RECLAMATION

Managing Water in the West

Draft Environmental Assessment

San Joaquin River Restoration Program Juvenile Fall-Run Chinook Salmon Trap and Haul Study

Prepared by:

United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

U.S. Department of the Interior
Bureau of Reclamation

February 2014

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Contents

Figures

Attachments

Section 1 Introduction

1.1 Background

In 1988, a coalition of environmental groups, led by the Natural Resources Defense Council (NRDC), filed a lawsuit challenging the renewal of long-term water service contracts between the United States and Central Valley Project (CVP) Friant Division (Friant Division). After more than 18 years of litigation, *NRDC, et al., v. Kirk Rodgers, et al.* (Settlement), a settlement was reached. On September 31, 2006, the Settling Parties, including NRDC, Friant Water Users Authority (now represented by the Friant Water Authority [FWA]), 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 (Court) on October 23, 2006. The Settlement establishes two primary goals:

- Restoration Goal – 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.

- Water Management Goal – To reduce or avoid adverse water supply impacts on all of the Friant Contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

The planning and environmental review necessary to implement the Settlement is authorized under Section 3406(c)(1) of the Central Valley Project Improvement Act (Public Law 102-575) and the San Joaquin River Restoration Settlement Act (Act), included in Public Law 111-11, the Omnibus Public Land Management Act of 2009. The Secretary of the Interior is authorized and directed to implement the terms and conditions of the Settlement through the Act. The San Joaquin River Restoration Program (SJRRP) is implementing the Settlement.

The SJRRP Fisheries Management Plan (FMP; SJRRP 2010) provides an adaptive management approach for the reintroduction of Chinook salmon and other fishes. Given the uncertainty associated with reintroduction of Chinook salmon and native fish to the San Joaquin River, and the complexity of the SJRRP, an adaptive management program is needed to ensure the SJRRP can be flexible in reaching its goals. The responses of translocated Chinook salmon and their progeny to physical factors such as streamflow, water temperature, and climate change are unknown. Adaptively managing fish populations under challenging water constraints will require the SJRRP to use a variety of strategies and techniques to take action when unfavorable environmental conditions persist, such as this year, which is projected to be a critical low water year. Because of the hydrologic conditions, Reclamation is proposing to move captured juvenile fall-run

Chinook salmon from upstream areas with unsuitable environmental conditions to downstream locations where their ocean migration can continue.

Incorporation of Related Environmental Documents

The SJRRP Program Environmental Impact Statement/Impact Report (PEIS/R) was finalized in July 2012 and the corresponding Record of Decision (ROD) was issued on September 28, 2012 (Reclamation 2012a and 2012b). The PEIS/R and ROD analyzed at a project-level the reoperation of Friant Dam to release Interim and Restoration Flows to the San Joaquin River, making water supplies available to Friant Division long-term contractors at a pre-established rate, and the recapture of Interim and Restoration Flows at existing facilities within the Restoration Area and the Delta.

This EA incorporates by reference the following information from the PEIS/R:

- **Chapter 3.0 - Considerations for Describing the Affected Environment and Environmental Consequences.** This EA incorporates the analysis and assumptions presented in the chapter, Specifically, analysis of the Study Area for the PEIS/R, the explanation of significance criteria, impact comparisons, impact levels, and mitigation measures are incorporated into the contents of this EA.

- **Chapter 4.0 – Air Quality.** This EA incorporates the affected environment description and analysis performed to assess impacts related to program-level actions. The assessment of impacts and ultimate determinations, all being less than significant for the operation of the SJRRP, are also incorporated.

- **Chapter 5.0 – Biological Resources - Fisheries**. This EA incorporates the affected environment description and analysis performed in order to support the analysis for the SJRRP. The incorporated material from the PEIS/R includes the quantitative and qualitative assessments of aquatic species impacts as a result of the implementation of the SJRRP, specifically related to physical processes such as water temperatures, water quality, flow patterns, fish habitat conditions, pollutant discharge and mobilization, turbidity, diversions and entrainment, predation, and food web support in the Sacramento-San Joaquin Delta. The assessment of impacts and determinations are also incorporated.

- **Chapter 6.0 – Biological Resources – Vegetation and Wildlife.** This EA incorporates the affected environment description and analysis performed in the PEIS/R related to the assessment of sensitive species and habitats in or near the project area.

- **Chapter 25.**0 – **Visual Resources.** This EA incorporates by reference the affected environment description and analysis performed in the PEIS/R related to the assessment of impacts to visual resources in the project area.

- **Chapter 26.0 – Cumulative Impacts.** This EA incorporates by reference the discussion of the effects of the SJRRP in relation to past, present, and reasonably foreseeable future actions. This includes discussion of planned actions associated with the collective CALFED Water Resources Projects, other water resource projects, resource management plans and programs, and the related impact analysis from the SJRRP on cumulative impacts to the resources addressed in this EA.

1.2 Purpose and Need

The purpose of the proposed action is to support the previously described Settlement Restoration Goal by taking adaptive management action to assess the feasibility of trapping and moving fall-run Chinook salmon in response to unsuitable environmental conditions. The FMP identifies rearing and juvenile migration as a life stage to be supported for successful completion of the salmon life cycle. Outmigration of juvenile salmon is critical for survival to adulthood. Factors determining successful outmigration include suitable water temperatures, adequate and timely flow for downstream movement, and a passable watercourse, none of which are available in the lower portions of the San Joaquin River and other downstream reaches of the Restoration Area during a Critical Low hydrologic water-year type. There are no restoration pulse flow requirements during a Critical Low water year. Low water conditions and water temperatures exceeding salmon thermal tolerance limits will cause physical and environmental barriers to downstream migration and result in lower salmon survival if no management action is taken.

This Page Intentionally Left Blank

Section 2 Alternatives

2.1 No Action Alternative

Under the no action alternative, Reclamation would not facilitate moving captured juvenile salmon from unsuitable conditions to downstream locations where their ocean migration can continue.

2.2 Proposed Action

Under the proposed action, Reclamation would implement a trap and haul study to assess the feasibility of moving juvenile fall-run Chinook salmon downstream of the Restoration Area where the San Joaquin River is connected in low flow years and no migration barriers exist and monitor fish movements in Reach 1 of the San Joaquin River during a Critical Low hydrologic water-year type where no flow pulses are available to cue juvenile salmon to downstream migration in already low water conditions. To capture juvenile fish, temporary fence weirs would be installed in three locations in Reach 1 of the San Joaquin River (Figure 1): within 1 mile downstream of the Highway 41 Bridge, at Scout Island, and within 1 mile downstream of the Highway 99 Bridge.

The fence weirs would be constructed from bank to bank, using wire mesh panels and supporting metal t-posts leading to a collection box (Figure 2). Fish would enter the collection box through a V-shaped passageway that inhibits exit. Restrictive bars at the collection box entrance would allow smaller fish to enter and block larger fish (i.e., predators). Collection boxes would most likely be 3'x4' or larger depending on site-specific river characteristics. In locations with flows exceeding the durability of mesh panels, weirs would be constructed of metal pickets (i.e., galvanized conduit) which are more resistant to higher water pressures and the accumulation of debris. Metal pickets supported by tripods and stringers would form a permeable wall at a 90° angle entering a trap box to guide and collect fish.

Alternative netting to fish weirs may be installed at a single location upstream of proposed weir locations. Entrainment-type netting could be installed at Donnie Bridge or Ledger Island Bridge. Entrainment-type nets

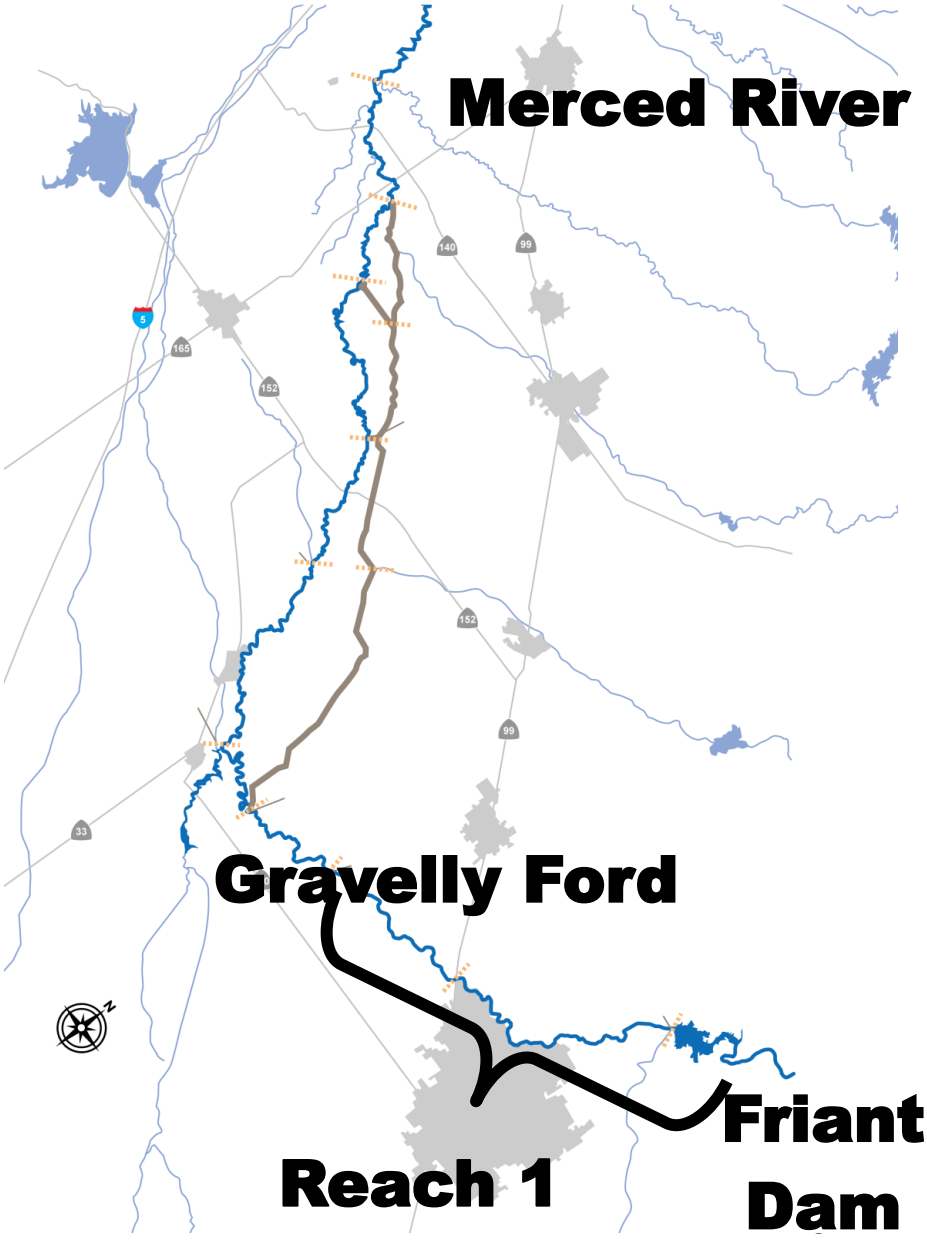

Figure 1 – Trapping Location General Vicinity

attached to steel frames guided horizontally in steel channel are fished and raised when not in use to capture fish moving downstream (Figure 3). Collection boxes would be checked for fish and weirs cleaned of debris daily. Any fish species other than Chinook salmon that may be incidentally trapped will be released immediately downstream of the collection structures.

Fish would be collected daily in the morning and transported to the release site using a standard size pickup truck. Fish would be netted and placed in 5-gallon buckets with lids to transfer them to a fish transport tank. Fish would be observed for suture marks (acoustically tagged fish) and wanded for PIT tags. Tagged fish would be released downstream of traps at all but the furthest downstream location.

Trap efficiency would be measured by marking 2 sizes classes of Chinook salmon collected to differentiate them from wild fish. The larger class size may be implanted with a PIT tag. Small Chinook salmon that are collected would not be marked in order to avoid causing additional handling stress that could decrease their chance for survival post-transport.

Fish would be transported in a 300-gallon tank filled with water collected from Reach 1of the San Joaquin River using a submersible pump. Salt (6‰) and Polyaqua would be added to transport tank water to alleviate osmotic imbalance and stress-related effects. Oxygen would be supplied and maintained at 8mg/L during transport. Visual inspections of fish and water quality would be made during transport to the release site. Any mortality during transport will be observed for physical damage, weighed, and measured.

Proposed release sites will be determined by water temperature, flow, and river connectivity, but could include: the confluence of the San Joaquin and Merced Rivers near Newman, or the confluence of the San Joaquin and Tuolumne Rivers near Patterson. Once at the release location, the transport tank water would be tempered to within 2^{0}C of the receiving water by slowly pumping release site water directly into the transportation tank. Once desired temperature is reached, fish would be released via a release tube. Any mortality during transport will be observed for physical damage, weighed, and measured.

Juvenile fall-run Chinook salmon trap and haul activities would occur from mid-February through May, as allowed by hydrologic conditions. If water temperatures reach a level that would compromise Chinook salmon survival, trapping would cease at that location. Following completion of trap and haul

activities, fish collection structures would be removed from the channel and stored at an off-site disposal facility.

To minimize potential impacts of the proposed action, Reclamation will implement the following measures:

- In accordance with the Service Conservation Guidelines for Valley Elderberry Longhorn Beetle (VELB), to avoid any impacts to VELB, no mechanized equipment will operate within 100 feet of elderberry shrubs, and no work will be done within 20 feet of the outer edge of any elderberry shrubs.

- The project area will be visually inspected prior to fish collection and release activities to ensure no kit foxes or dens are present.

- In order to avoid potentially working within areas that may be suitable for giant garter snake (GGS), a 100-foot buffer will be maintained around all backwater sloughs when installing t-posts for the temporary fish collection structures. Cut banks will be avoided when moving or anchoring equipment in order to avoid potential GGS dens.

    - Reclamation is coordinating with local stakeholders to better determine the potential level of impact, given the anticipated low water levels during the period of the proposed action, and feasible impact minimization measures

    - Reclamation will place signage to alert boaters of the temporary fish collection structures upstream and downstream of the temporary fish collection structures, and at Fresno Sportsmen's Club, Fort Washington Campground, Sycamore Island, and Friant Dam Landing.

    - Temporary fish collection structures will include flashing lights, and flagging to alert boaters.

    - Temporary fence weirs will include a removable panel marked with bright paint and signage to direct boaters and allow for boat passage.

Figure 2. Example Weir (Washington Department of Fish and Wildlife)

Figure 3. Example Entrainment Netting (Bureau of Reclamation)

Section 3 Affected Environment and Environmental Consequences

This section provides an overview of the physical environment and existing conditions that could be affected by the alternatives. The affected environment condition assumptions consist of the existing physical environmental conditions as of January 2014. The alternatives would have no effect on the following resources, and therefore they are not further discussed in this EA: groundwater, land use, geology and soils, agricultural resources, noise, power, public health, transportation, and utilities.

3.1 Surface Water Resources

3.1.1 Affected Environment

Under a Critical Low hydrologic water year type, flows will likely be only approximately 250 cfs to meet demands in February and will likely be reduced to around 130 cfs March 1st. There is no water allocated for restoration pulse flows during a Critical Low water year.

3.1.2 Environmental Consequences

No Action Alternative

The No Action Alternative would have no effect on surface water quantity, quality or hydrodynamics in the channel.

Proposed Action

Installation of the temporary fish collection structures and fish collection and release activities are not anticipated to significantly alter hydrodynamics in the river channel given the anticipated low flows. While increases in turbidity may occur during installation of the temporary fish collection structures and collection and release of fish, these impacts are anticipated to be minor, as all work would be done by hand, and these impacts would be temporary in nature.

3.2 Biological Resources

3.2.1 Affected Environment

Reclamation obtained a list of species listed as threatened or endangered under the Endangered Species Act (ESA) potentially occurring in the project area from the US Fish and Wildlife Service (Service) on 2/3/14 (Attachment A). The species that have the greatest potential to be in or near the project area are San Joaquin kit fox (kit fox), giant garter snake (GGS), and valley elderberry longhorn beetle (VELB). Other listed species are not anticipated to be present in the project area, and therefore are not further addressed.

San Joaquin Kit Fox
Kit fox diets vary based on prey availability, and includes small to mid0size mammals, ground-nesting birds, and insects. Kit foxes excavate their own dens, use dens made by other animals, or use human-made structures such as culverts, abandoned pipelines, and banks in sumps or roadbeds. Primary reasons for species decline include loss and degradation of habitat .

Kit foxes would not occur in the direct project area for the proposed action. It is unlikely that kit foxes would be present in the project vicinity.

Valley Elderberry Longhorn Beetle
Valley elderberry longhorn beetles (VELB), while not present in the direct action area of the river channel, may be located elderberry shrubs in riparian environments adjacent to the river channel in the project vicinity. VELB habitat consists of elderberry shrubs that are at least 1 inch or greater in diameter at ground level.

Giant Garter Snake
GGS inhabit sloughs, low-gradient streams, marshes, ponds, agricultural wetlands (e.g. rice fields), irrigation canals and drainage ditches and adjacent uplands. GGS populations in the San Joaquin Valley are small, fragmented unstable and believed to be decreasing. The species is threatened primarily by habitat conversion, fragmentation, and degradation resulting from urban development and incompatible agricultural practices.

While GGS are an aquatic species, it is highly unlikely that they would be present within the river channel itself, where the proposed action would occur. GGS generally prefer slow-moving or stagnant pools as opposed to moving water. While the species would not occur in the river, it may incidentally be located in upland areas adjacent to the river or in backwater sloughs that are connected to the river.

3.2.2 Environmental Consequences

No Action

Under the no action alternative, low water conditions and water temperatures exceeding salmon thermal tolerance limits would result in unsuitable environmental conditions for these fish. Physical and environmental barriers to downstream migration would result in lower salmon survival if no management action is taken.

Proposed Action

The proposed action would have a potential beneficial effect on fall-run Chinook salmon by moving captured juveniles from unsuitable conditions to downstream locations where their ocean migration can continue. While

larger fish would be excluded from the collection structures, it is possible that some smaller fry and lamprey may inadvertently be collected. Any fish species collected that are not Chinook salmon will be placed immediately downstream of the collection structures. Significant diurnal water temperature changes are not anticipated in the collection locations. The proposed action is not anticipated to have any adverse impacts on any other aquatic species, and would have no effect on ESA listed fish species.

Valley Elderberry Longhorn Beetle

No vegetation will be removed under the proposed action. Vehicle access for activities under the proposed action will be on existing roads and disturbed areas. In accordance with the Service Conservation Guidelines for VELB, to avoid any impacts to VELB, no mechanized equipment will operate within 100 feet of elderberry shrubs, and no work will be done within 20 feet of the outer edge of any elderberry shrubs.

San Joaquin Kit Fox

No habitat loss for kit fox or their prey would occur under the proposed action. While highly unlikely that kit fox would occur in the riparian areas adjacent to the project area, they could passively enter the project vicinity. The project area will be visually inspected prior to trap and haul activities to ensure no kit foxes or dens are present.

Giant Garter Snake

While the species would not occur in the river, it may incidentally be located in upland areas adjacent to the river or in backwater sloughs that are connected to the river. In order to avoid potentially working within areas that may be suitable for GGS, a 100-foot buffer will be maintained around all backwater sloughs when installing t-posts for the temporary fish collection structures. Cut banks will be avoided when moving or anchoring equipment in order to avoid potential GGS dens.

With the implementation of the previously described avoidance measures, the proposed action would have no effect on ESA listed species, including VELB, GGS and kit fox. The proposed action would have no adverse effects on any other vegetation, wildlife, including species protected by the Migratory Bird Treaty Act.

3.3 Recreation

3.3.1 Affected Environment

As further described in Chapter 21 of the PEIS/EIR, a range of recreation opportunities is possible in Reach 1, including boating, interpretation and educational activities, hiking, biking, horseback riding, wildlife viewing and nature observation, picnicking, and hunting.

3.3.2 Environmental Consequences

No Action
The no action alternative would have no effect on recreation.

Proposed Action
Because they would extend bank to bank, installation of the temporary fish collection structures could adversely impact boaters in this reach of the river, as they would have to navigate around the structures. However, initial coordination with stakeholders indicated that most canoers and kayakers utilize areas upstream of the proposed action, and thus would not be affected. Initial coordination with power boat operators has indicated that they can be present in this reach of the river at flows as low as 170-180 cfs (Moyle pers comm.). However, given current hydrologic conditions, flows in this reach of the river are anticipated to be around 130 cfs for the majority of the proposed action period, and flows are anticipated to be too low for power boats to navigate. To further avoid and minimize potential impacts to boaters from the proposed action, Reclamation will implement several impact minimization measures:

- Reclamation is coordinating with local stakeholders to better determine the potential level of impact, given the anticipated low water levels during the period of the proposed action, and feasible impact minimization measures

- Reclamation will place signage to alert boaters of the temporary fish collection structures upstream and downstream of the temporary fish collection structures, and at Fresno Sportsmen's Club, Fort Washington Campground, Sycamore Island, and Friant Dam Landing.

- Temporary fish collection structures will include flashing lights, and flagging to alert boaters.

- Temporary fence weirs will include a removable panel marked with bright paint and signage to direct boaters and allow for boat passage.

3.4 Visual Resources

3.4.1 Affected Environment
As further described in Section 25.1.2 of the PEIS/R, the overall visual quality in Reach 1A, where the temporary fish collection structures would be located, is low to moderate, and the overall visual quality in Reach 5, where fish release would occur is moderate.

3.4.2 Environmental Consequences

No Action

The No Action alternative would not affect visual resources.

Proposed Action

The proposed installation of fish collection structures could affect the visual resources of the direct project area in the areas described for fish collection. These structures would only be installed for approximately three months, and therefore any potential impacts to visual resources would be temporary, localized, and minor.

3.5 Cultural Resources

3.5.1 Affected Environment

Cultural resources is a term used to describe both 'archaeological sites' depicting evidence of past human use of the landscape and the 'built environment' which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government's responsibility to cultural resources. Other applicable cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPA), and the Archaeological Resources Protection Act (ARPA). Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to coordinate with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the late prehistoric period.

Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century has probably destroyed many Native American cultural sites

The historic era cultural resources along the Valley are diverse. Many of the historic era resources are related to farming in the San Joaquin Valley. Additionally, many of the urban landscapes have potentially significant architecture and other historic features such as roads, bridges.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, existing conditions would persist. Reclamation would not have an undertaking as defined by Section 301(7) of the NHPA and thus there would be no Federal nexus on Reclamation's part to initiate Section 106 review. As a result, implementation of the No Action alternative would result in no impacts to cultural resources by Reclamation.

Proposed Action

The proposed action involves the installation of temporary fish weirs into the main stem of the San Joaquin River during restoration flows. Reclamation would fund this activity which constitutes an undertaking as defined by Section 301(7) of the NHPA initiation Section 106 and its implementing regulations at 36 CFR § 800. Construction of the weir will be limited to the main stem of the waterway and involve the anchoring of T-posts into the waterway. The project is a small scale construction project and would not require additional staging beyond the existing roadways and parking areas. Once the collection is complete the weirs will be removed. The captured fish will be transported downstream and placed back into the San Joaquin River utilizing existing roadways. Because all ground actions are limited to the main stem of the San Joaquin River, the undertaking has no potential to cause effects to historic properties pursuant to 36 CFR § 800.3(a)(1). Should the proposed action alternative be selected, the resulting activity will have no impact to cultural resources resulting from the proposed action alternative.

3.6 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the U.S. Government for federally recognized Indian tribes or individuals. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. "Assets" are anything owned that holds monetary value. "Legal interests" means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. ITAs cannot be sold, leased or otherwise alienated without the United States' approval. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITAs may be located off trust land. Reclamation shares the Indian trust responsibility with all other

agencies of the Executive Branch to protect and maintain ITAs reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order. The proposed action does not have the potential to impact ITAs.

3.7 Air Quality

3.7.1 Affected Environment

The project area is located within the San Joaquin Valley Air Basin (SJVAB) which is the second largest air basin in California. Despite years of improvements, the SJVAB does not meet State and Federal health-based air quality standards. The governing body over the SJVAB, the San Joaquin Valley Air Pollution Control District (SJVAPCD), has adopted stringent control measures to reduce emissions and improve overall air quality within the SJVAB.

3.7.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no increase in emissions and, therefore, it is reasonable to assume there would be no impacts or change to air quality.

Proposed Action

The proposed action would be temporary in nature, and would only result in daily trips in a standard size pickup truck to the fish collection and release sites for approximately 3 months. The proposed action would not result in a substantial increase in long-term regional or local emissions. Therefore, emissions would not be anticipated to violate an air quality standard, contribute substantially to an existing or projected air quality violation or conflict with or obstruct implementation of the California Air Resources Board and SJVAPCD air planning efforts.

3.8 Global Climate Change

3.8.1 Affected Environment

Climate change refers to significant change in measures of climate that last for decades or longer. Many environmental and anthropogenic factors can contribute to climate change, including the burning of fossil fuels, deforestation, changes in ocean currents, urbanization, etc. Carbon dioxide, which is produced when fossil fuels are burned, is a greenhouse gas (GHG) that effectively traps heat in the lower atmosphere. Some carbon dioxide is liberated naturally, but this may be augmented greatly through human activities.

Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. Approximately 20 million Californians rely on the CVP and SWP for water deliveries. Global shifts

related to climate change may lead to impacts to California's water resources and project operations.

3.8.2 Environmental Consequences

No Action Alternative

Under the no action alternative, there would be no increase in emissions and, therefore, it is reasonable to assume there would be no impacts or change to or from climate change.

Proposed Action

The proposed action would not result in a substantial increase in long-term regional or local emissions. Because the Proposed Action would not add to the global inventory of gases that would contribute to global climate change, the Proposed Action would not result in increases in GHG emissions. The proposed action would be temporary and occur approximately three months, and thus would not be affected by long term effects of climate change.

3.9 Cumulative Impacts

The proposed action would not have any controversial or highly uncertain effects, or involve unique or unknown environmental risks. The proposed action would contribute to cumulative effects to physical resources when added to other past, present or reasonably foreseeable actions.

The remainder of the SJRRP actions, including the continued release of future Restoration flows from Friant Dam, the recapture of flows at specific San Joaquin River diversion and/or pumping facilities, and future site-specific actions are all reasonably foreseeable and required under the Settlement and the Act. Future program actions related to the SJRRP have been addressed in the SJRRP PEIS/R (Reclamation 2012a), discussed earlier in this EA. Areas of potential concern, such as water supply impacts, recapture mechanisms, and cumulative impacts have been discussed within the PEIS/R.

The proposed action analyzed in this EA, when added to other actions, would not contribute to significant improvements or declines in environmental conditions. The proposed action would occur only for only approximately three months. The proposed action would not contribute to cumulative impacts on water resources, biological resources, recreation, cultural resources, ITAs, air quality, or global climate change.

This page left blank intentionally.

Section 4 Consultation and Coordination

4.1 National Environmental Policy Act

This draft EA has been prepared pursuant to NEPA, which was signed into law in 1969 (42 USC Section 4321 et seq.). In addition, it was prepared in accordance with CEQ regulations for implementing NEPA, 40 CFR Parts 1500-1508, and General Services Administration (GSA) Order ADM 1095.1F. This draft EA assesses if the proposed action would cause any significant environmental effects. Given the short time allotted to implement the proposed action in response to extreme hydrologic conditions, this draft EA is being circulated for 10 days for public review and comment.

4.2 Fish and Wildlife Coordination Act of 1934

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The Proposed Action does not involve federal water development projects; therefore, the FWCA does not apply.

4.3 Endangered Species Act of 1973

Section 7 of the Endangered Species Act (ESA) requires Federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species. As previously described, the proposed action would have no effect on ESA listed species.

4.4 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act establishes a management system for national marine and estuarine fishery resources. This legislation requires that all Federal agencies consult with the National Marine Fisheries Service (NMFS) regarding proposed actions that may adversely affect essential fish habitat (EFH). EFH is defined as “those waters and substrate

necessary to fish for spawning, breeding, feeding or growth to maturity". Reclamation is coordinating with NMFS on the proposed action's potential effects to EFH. The proposed action is not anticipated to adversely affect EFH.

4.5 Clean Water Act

Sections 404 and 401 of the CWA address discharge of fill or pollutants into waters of the United States. Reclamation is coordinating with the Corps regarding the proposed action and compliance with the CWA.

4.6 Rivers and Harbors Act of 1899 as Amended (Section 10)

The Rivers and Harbors Act (RHA) addresses activities that involve construction in navigable waters. Reclamation is coordinating with the Corps regarding compliance with Section 10 of the RHA.

4.7 National Historic Preservation Act

The National Historic Preservation Act is discussed in Section 3.5.

4.8 Migratory Bird Treaty Act of 1918

The MBTA implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the MBTA, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns. The proposed action would have no effect on birds protected by the MBTA.

4.9 Executive Order 113007 and American Indian Religious

Freedom Act of 1978 – Indian Trust Assets and Sacred Sites on Federal Lands Executive Order 113007 and the American Indian Religious Freedom Act of 1978 are designed to protect ITAs, accommodate access and ceremonial use of Native American sacred sites by Native American religious practitioners, avoid adversely affecting the physical integrity of such sacred sites, and protect and preserve the observance of traditional Native American religions. The proposed action would not violate these protections.

4.10 Executive Order 12898 – Environmental Justice in Minority and Low-Income Populations

Executive Order 12898 requires Federal agencies to identify and address disproportionately high and adverse human health and environmental effects of Federal programs, policies, and activities on minority and low-income populations. The proposed action has been assessed for potential environmental, social, and economic impacts on minority and low-income populations. Minority and low-income populations would not be disproportionately exposed to adverse effects relative to the benefits of the action.

Section 5 List of Preparers and Reviewers

5.1 U.S. Department of the Interior, Bureau of Reclamation

Becky Victorine, Natural Resources Specialist, San Joaquin River Restoration Program

This page left blank intentionally.

Section 6 References

Reclamation 2012a. San Joaquin River Restoration Program Program Environmental Impact Statement/Impact Report (PEIS/R).

Reclamation 2012b. San Joaqion River Restoration Program Record of Decision.

San Joaquin River Restoration Program 2010. San Joaquin River Restoration Program Fisheries Management Plan.

Attachment A

US Fish and Wildlife Service Species List

- **U.S. Fish & Wildlife Service**
- **Sacramento Fish & Wildlife Office**
- **Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 140203011445

Database Last Updated: September 18, 2011

No quad species lists requested.

County Lists

Fresno County

Listed Species

Invertebrates

- Branchinecta conservatio
  - Conservancy fairy shrimp (E)

- Branchinecta longiantenna
  - longhorn fairy shrimp (E)

- Branchinecta lynchi
  - Critical habitat, vernal pool fairy shrimp (X)
  - vernal pool fairy shrimp (T)

- Desmocerus californicus dimorphus
  - valley elderberry longhorn beetle (T)

- Lepidurus packardi
  - Critical habitat, vernal pool tadpole shrimp (X)
  - vernal pool tadpole shrimp (E)

Fish

- Gila bicolor snyderi
  - Owens tui chub (E)

- Hypomesus transpacificus
  - delta smelt (T)

- Oncorhynchus (=Salmo) clarki henshawi
  - Lahontan cutthroat trout (T)

- Oncorhynchus (=Salmo) clarki seleniris
  - Paiute cutthroat trout (T)

- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)

Amphibians

- Ambystoma californiense
  - California tiger salamander, central population (T)
  - Critical habitat, CA tiger salamander, central population (X)

- Rana draytonii
  - California red-legged frog (T)

    - Critical habitat, California red-legged frog (X)

- Rana muscosa
    - Mountain yellow legged frog (PX)

- Rana sierrae
    - Mountain yellow legged frog (PX)

Reptiles

- Gambelia (=Crotaphytus) sila
    - blunt-nosed leopard lizard (E)

- Thamnophis gigas
    - giant garter snake (T)

Birds

- Gymnogyps californianus
    - California condor (E)

Mammals

- Dipodomys ingens
    - giant kangaroo rat (E)

- Dipodomys nitratoides exilis
    - Critical habitat, Fresno kangaroo rat (X)
    - Fresno kangaroo rat (E)

- Dipodomys nitratoides nitratoides

  - Tipton kangaroo rat (E)

- Ovis canadensis californiana
  - Sierra Nevada (=California) bighorn sheep (E)

- Vulpes macrotis mutica
  - San Joaquin kit fox (E)

Plants

- Calyptridium pulchellum
  - Mariposa pussy-paws (T)

- Camissonia benitensis
  - San Benito evening-primrose (T)

- Castilleja campestris ssp. succulenta
  - Critical habitat, succulent (=fleshy) owl's-clover (X)
  - succulent (=fleshy) owl's-clover (T)

- Caulanthus californicus
  - California jewelflower (E)

- Cordylanthus palmatus
  - palmate-bracted bird's-beak (E)

- Monolopia congdonii (=Lembertia congdonii)
  - San Joaquin woolly-threads (E)

- Orcuttia inaequalis
    - Critical habitat, San Joaquin Valley Orcutt grass (X)
    - San Joaquin Valley Orcutt grass (T)

- Orcuttia pilosa
    - Critical habitat, hairy Orcutt grass (X)
    - hairy Orcutt grass (E)

- Pseudobahia bahiifolia
    - Hartweg's golden sunburst (E)

- Pseudobahia peirsonii
    - San Joaquin adobe sunburst (T)

- Sidalcea keckii
    - Critical habitat, Keck's checker-mallow (X)
    - Keck's checker-mallow (=checkerbloom) (E)

- Tuctoria greenei
    - Greene's tuctoria (=Orcutt grass) (E)

Proposed Species

Amphibians

- Anaxyrus canorus
    - Yosemite toad (PX)

Candidate Species

Amphibians

- Bufo canorus
  - Yosemite toad (C)

- Rana muscosa
  - mountain yellow-legged frog (C)

Birds

- Coccyzus americanus occidentalis
  - Western yellow-billed cuckoo (C)

Mammals

- Martes pennanti
  - fisher (C)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.
See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be May 04, 2014.