



State of California –The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Northern Region
601 Locust Street
Redding, CA 96001
www.wildlife.ca.gov

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



RECEIVED

April 5, 2016

Gary Antone, P.E., Director of Public Works
Tehama County Department of Public Works
9380 San Benito Avenue
Gerber, CA 96035

APR 7 2016

TEHAMA COUNTY
PUBLIC WORKS

**Subject: Incidental Take Permit for Jellys Ferry Road Bridge Replacement Project
(2081-2016-002-01)**

Dear Mr. Antone:

Enclosed you will find two originals of the incidental take permit for the above referenced Project, which have been signed by the Department. Please read the permit carefully, sign the acknowledgement on both copies of the permit, and return one original **no later than 30 days from Department signature**, and prior to initiation of ground-disturbing activities, to:

Department of Fish and Wildlife
Habitat Conservation Planning Branch, CESA Permitting
1416 Ninth Street, 12th Floor
Sacramento, CA 95814

You are advised to keep the other original signature permit in a secure location and distribute copies to appropriate project staff responsible for ensuring compliance with the conditions of approval of the permit. Note that you are required to comply with certain conditions of approval prior to initiation of ground-disturbing activities. Additionally, a copy of the permit must be maintained at the project work site and made available for inspection by Department staff when requested.

The permit will not take effect until the signed acknowledgement is received by the Department. If you wish to discuss these instructions or have questions regarding the permit, please contact Adam McKannay, Environmental Scientist, at (530) 225-2124.

Sincerely,

for Neil Manji, Regional Manager
Northern Region
California Department of Fish and Wildlife

Enclosures (2)

Conserving California's Wildlife Since 1870

Mr. Gary Antone, P.E.

April 5, 2016

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Ec: Kevin Rosser, P.E., Tehama County Department of Public Works
Mike Trueblood, LSA Associates, Inc.



California Department of Fish and Wildlife
Northern Region
601 LOCUST STREET
REDDING, CA 96001

California Endangered Species Act
Incidental Take Permit No. 2081-2016-002-01

JELLYS FERRY ROAD BRIDGE REPLACEMENT PROJECT

Authority: This California Endangered Species Act (CESA) incidental take permit (ITP) is issued by the California Department of Fish and Wildlife (CDFW) pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and California Code of Regulations, Title 14, section 783.0 et seq. CESA prohibits the take¹ of any species of wildlife designated by the California Fish and Game Commission as an endangered, threatened, or candidate species.² CDFW may authorize the take of any such species by permit if the conditions set forth in Fish and Game Code section 2081, subdivisions (b) and (c) are met. (See Cal. Code Regs., tit. 14, § 783.4).

Permittee: Tehama County Department of Public Works
Principal Officer: Gary Antone, P.E., Director of Public Works
Contact Person: Kevin Rosser, P.E., Senior Civil Engineer, (530) 385-1462
Mailing Address: 9380 San Benito Avenue
Gerber, California 96035

Effective Date and Expiration Date of this ITP:

This ITP shall be executed in duplicate original form and shall become effective once a duplicate original is acknowledged by signature of the Permittee on the last page of this ITP and returned to CDFW's Habitat Conservation Planning Branch at the address listed in the Notices section of this ITP. Unless renewed by CDFW, this ITP's authorization to take the Covered Species shall expire on **December 31, 2019**.

Notwithstanding the expiration date on the take authorization provided by this ITP, Permittee's obligations pursuant to this ITP do not end until CDFW accepts as complete the Permittee's Final Mitigation Report required by Condition of Approval 7.7 of this ITP.

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

²"The definition of an endangered, threatened, and candidate species for purposes of CESA are found in Fish and Game Code sections 2062, 2067, and 2068, respectively.

Project Location:

The Jellys Ferry Road Bridge Replacement Project (Project) is located Jellys Ferry Road over the Sacramento River, approximately 9 miles north of the City Red Bluff, Tehama County (See Figure 1). The Project is located approximately 7.5 miles east of Interstate 5 at approximate Latitude 40.3172N, Longitude 122.1897W.

Project Description:

The Project consists of three elements; replacement of the existing bridge, realignment of Jellys Ferry Road, and relocation of a portion of the Bureau of Land Management (BLM) recreational facilities. The purpose of the Project is to provide a safe vehicular crossing over the Sacramento River on Jellys Ferry Road by replacing the existing structurally and seismically deficient bridge with a new bridge that meets current design standards. As such, replacement of the bridge is needed to improve public safety.

The new bridge and roadway alignment would begin approximately 800- feet south of the existing bridge and end approximately 3,300 feet north of the existing bridge. The new bridge would be constructed on a new alignment approximately 45 feet west (upstream) of the existing bridge, measured at the south bank of the Sacramento River and approximately 190 feet west (upstream) of the existing bridge measured at the north bank of the Sacramento River. The new bridge would be approximately 1,264 feet in length and comprised of a six-span cast-in-place post-tensioned box girder superstructure with varying depth supported on single column piers founded on cast-in-drilled-hole concrete piles.

Temporary instream work platforms are required during construction of the new bridge and removal of the existing bridge. In order to maintain water flows, at least a portion of the temporary work platforms must be an elevated structure (i.e., a trestle) that would be supported on piles driven into the streambed. To minimize the quantity of piles required, gravel approach pads will be constructed at both ends of the trestles. A minimum 200-foot wide section of the river will remain open, between the two gravel pads, throughout the duration of construction.

Construction Project will last approximately 18 months and span two construction seasons; construction is scheduled to begin in April and end in October of the following year (e.g., April 2016 through October 2017). In-water work activities in the Sacramento River would be conducted during two discreet periods: the first in-water work period would last approximately 18 weeks, from May 15 through September 30 of the first construction season; the second in-water work period would last approximately 25 weeks, from late-March through mid-September of the second construction season.

Construction activities that will be conducted during the first in-water work period include construction of the instream gravel work pads and the temporary work trestles, construction

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of the cast-in-drill hole (CIDH) piles for piers 2 and 3, and driving the piles for the temporary falsework. All pile driving activities (i.e., for construction of the temporary trestles and the temporary falsework) will be completed during the first in-water work period.

Construction activities that will occur during the second in-water work period include removing the falsework piling, removing/demolishing in-water piers from the existing bridge, and removing the temporary trestles and gravel construction pads.

Installation and removal of the anti-spawning mats will occur independent from the in-water work periods, between March 1 and April 15, and between October 15 and October 30, respectively.

Typically, the construction contractor will be permitted to work during daylight hours to complete all construction activities associated with construction of the new bridge and demolition of the existing bridge, including construction of the temporary gravel work pads, temporary trestles, and temporary falsework. In some instances, the contractor may be permitted to work during nighttime hours to complete detour maintenance/traffic control.

The Project will require the relocation of the BLM recreation area access road and realignment of the existing recreational area circulation road. Access to the BLM recreational site will be relocated to the east side of Jellys Ferry Road approximately 550 feet to the north of the existing entrance.

The Project will require retaining walls, storm water drainage facilities, bank protection, reconstruction of existing residential driveways, replacement or relocation of existing fencing, and the restoration of existing landscaping.

Covered Species Subject to Take Authorization Provided by this ITP:

This ITP covers the following species:

Name	CESA Status
1. Sacramento River Winter-Run Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)	Endangered ³
2. Central Valley Spring-Run Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)	Threatened ⁴

These species and only these species are the "Covered Species" for the purposes of this

³See *Id.*, subd. (a)(2)(M).

⁴See Cal. Code Regs. tit. 14 § 670.5, subd. (b)(2)(C).

ITP.

Impacts of the Taking on Covered Species:

Project activities and their resulting impacts are expected to result in the incidental take of individuals of the Covered Species. The activities described above expected to result in incidental take of individuals of the Covered Species include installation of the temporary gravel pads, pile driving associated with the construction of the temporary trestle, installation of anti-spawning mats, installation of temporary CIDH casings, and fish salvage and relocation from within temporary CIDH casings (Covered Activities).

Incidental take of individuals of the Covered Species in the form of mortality ("kill") may occur as a result of Covered Activities such as crushing, entombing, dewatering, entrainment, relocation, desiccation, stranding, thermal stress, and barotraumas. Incidental take of individuals of the Covered Species may also occur from the Covered Activities in the form of pursue, catch, capture, or attempt to do so of the Covered Species from fish salvage and relocation. The areas where authorized take of the Covered Species is expected to occur include: the immediate impact area of the Project is 350-foot wide (the bankfull width of the stream in the area), extending upstream and downstream 105 feet to the outer limits of the hydroacoustic impacts that could result in mortality (collectively, the Project Area).

The Project is expected to cause the net loss of 0.01 acres of instream habitat for the Covered Species, and a temporary loss of 0.95 acres of instream habitat for the Covered Species. The Project will also result in the permanent loss of 2.26 acres of shaded riverine riparian habitat. The reach of the Sacramento River in the vicinity of the project is approximately 350-foot wide and varies from approximately 6- to 8-feet deep in the summer and 14- to 16-deet deep in the winter. Consequently, this reach of the river provides a substantial area for movement, protection, and foraging. However, the river bottom of the Sacramento River in the Project area is generally unsuitable spawning habitat for the Covered Species due to the coarse sand-embedded substrate. The riparian zone adjacent to the Sacramento River in the Project Area is an important habitat type for the Covered Species as it provides shade and rearing areas for fry and juveniles. Impacts of the authorized taking also include adverse impacts to the Covered Species related to temporal losses, increased habitat fragmentation and edge effects, and the Project's incremental contribution to cumulative impacts (indirect impacts). These impacts include: stress resulting from noise and vibrations from pile driving, capture and relocation, displacement from preferred habitat, increased competition for food and space, and increased vulnerability to predation.

Incidental Take Authorization of Covered Species:

This ITP authorizes incidental take of the Covered Species and only the Covered Species. With respect to incidental take of the Covered Species, CDFW authorizes the Permittee, its

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employees, contractors, and agents to take Covered Species incidentally in carrying out the Covered Activities, subject to the limitations described in this section and the Conditions of Approval identified below. This ITP does not authorize take of Covered Species from activities outside the scope of the Covered Activities, take of Covered Species outside of the Project Area, take of Covered Species resulting from violation of this ITP, or intentional take of Covered Species except for capture and relocation of Covered Species as authorized by this ITP.

Conditions of Approval:

Unless specified otherwise, the following measures apply to all Covered Activities within the Project Area, including areas used for vehicular ingress and egress, staging and parking, and noise and vibration generating activities that may/will cause take. CDFW's issuance of this ITP and Permittee's authorization to take the Covered Species are subject to Permittee's compliance with and implementation of the following Conditions of Approval:

1. **Legal Compliance:** Permittee shall comply with all applicable federal, state, and local laws in existence on the effective date of this ITP or adopted thereafter.
2. **CEQA Compliance:** Permittee shall implement and adhere to the mitigation measures related to the Covered Species in the Biological Resources section of the Mitigated Negative Declaration and Initial Study (SCH No.: 2007082085) adopted by Tehama County Public Works on June 24, 2014, as lead agency for the Project pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.).
3. **LSA Agreement Compliance:** Permittee shall implement and adhere to the mitigation measures and conditions related to the Covered Species in the Lake and Streambed Alteration Agreement (LSAA) (Notification No. 1600-2015-0348-R1 for the Project executed by CDFW pursuant to Fish and Game Code section 1600 et seq.
4. **ESA Compliance:** Permittee shall implement and adhere to the terms and conditions related to the Covered Species in the National Marine Fisheries Service (NMFS) Biological Opinion for the Jellys Ferry Road Bridge Replacement Project (Biological Opinion No. 151422SWR2013SA00088 (T/N 2013/9541)) for the Project pursuant to the Federal Endangered Species Act (ESA). For purposes of this ITP, where the terms and conditions for the Covered Species in the federal authorization are less protective of the Covered Species or otherwise conflict with this ITP, the conditions of approval set forth in this ITP shall control.
5. **ITP Time Frame Compliance:** Permittee shall fully implement and adhere to the conditions of this ITP within the time frames set forth below and as set forth in the

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Mitigation Monitoring and Reporting Program (MMRP), which is included as Attachment 1 to this ITP.

6. General Provisions:

- 6.1. Designated Representative. Before starting Covered Activities, Permittee shall designate a representative (Designated Representative) responsible for communications with CDFW and overseeing compliance with this ITP. Permittee shall notify CDFW in writing before starting Covered Activities of the Designated Representative's name, business address, and contact information, and shall notify CDFW in writing if a substitute Designated Representative is selected or identified at any time during the term of this ITP.
- 6.2. Designated Biologist. Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information of a biological monitor (Designated Biologist) at least 30 days before starting Covered Activities. Permittee shall ensure that the Designated Biologist is knowledgeable and experienced in the biology, natural history, collecting and handling of the Covered Species. The Designated Biologist shall be responsible for monitoring Covered Activities to help minimize and fully mitigate or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. Permittee shall obtain CDFW approval of the Designated Biologist in writing before starting Covered Activities, and shall also obtain approval in advance in writing if the Designated Biologist must be changed.
- 6.3. Designated Biologist Authority. To ensure compliance with the Conditions of Approval of this ITP, the Designated Biologist shall have authority to immediately stop any activity that does not comply with this ITP, and/or to order any reasonable measure to avoid the unauthorized take of an individual of the Covered Species.
- 6.4. Education Program. Permittee shall conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the Designated Biologist that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in this ITP. Permittee shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the Project Area. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing

this information for workers to carry in the Project Area. Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.

- 6.5. Construction Monitoring Notebook. The Designated Biologist shall maintain a construction-monitoring notebook on-site throughout the construction period, which shall include a copy of this ITP with attachments and a list of signatures of all personnel who have successfully completed the education program. Permittee shall ensure a copy of the construction-monitoring notebook is available for review at the Project site upon request by CDFW.
- 6.6. Trash Abatement. Permittee shall initiate a trash abatement program before starting Covered Activities and shall continue the program for the duration of the Project. Permittee shall ensure that trash and food items are contained in animal-proof containers and removed at least once a week to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.
- 6.7. Dust Control. Permittee shall implement dust control measures during Covered Activities to facilitate visibility for monitoring of the Covered Species by the Designated Biologist. Permittee shall keep the amount of water used to the minimum amount needed, and shall not allow water to form puddles.
- 6.8. Erosion Control Materials. Permittee shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as monofilament netting (erosion control matting) or similar material, in potential Covered Species' habitat.
- 6.9. Delineation of Property Boundaries. Before starting Covered Activities Permittee shall clearly delineate the boundaries of the Project Area with fencing, stakes, or flags. Permittee shall restrict all Covered Activities to within the fenced, staked, or flagged areas. Permittee shall maintain all fencing, stakes, and flags until the completion of Covered Activities.
- 6.10. Delineation of Habitat. Permittee shall clearly delineate habitat of the Covered Species within the Project Area with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of Covered Species' habitat.

- 6.11. Project Access. Project-related personnel shall access the Project Area using routes identified in the Project Description and shall not cross Covered Species' habitat outside of or en route to the Project Area. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. If Permittee determines construction of routes for travel are necessary outside of the Project Area, the Designated Representative shall contact CDFW for written approval before carrying out such an activity. CDFW may require an amendment to this ITP, among other reasons, if additional take of Covered Species will occur as a result of the Project modification.
- 6.12. Staging Areas. Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the Project Area using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked Project Area unless provided for as described in Condition of Approval 6.11 of this ITP.
- 6.13. Hazardous Waste. Permittee shall immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. Permittee shall exclude the storage and handling of hazardous materials from the Project Area and shall properly contain and dispose of any unused or leftover hazardous products off-site.
- 6.14. CDFW Access. Permittee shall provide CDFW staff with reasonable access to the Project and mitigation lands under Permittee control, and shall otherwise fully cooperate with CDFW efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.
- 6.15. Refuse Removal. Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.

7. Monitoring, Notification and Reporting Provisions:

- 7.1. Notification Before Commencement. The Designated Representative shall notify CDFW 14 calendar days before starting Covered Activities and shall document compliance with all pre-Project Conditions of Approval before starting Covered Activities.

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- 7.2. Notification of Non-Compliance. The Designated Representative shall immediately notify CDFW in writing if it determines that the Permittee is not in compliance with any Condition of Approval of this ITP, including but not limited to any actual or anticipated failure to implement measures within the time periods indicated in this ITP and/or the MMRP. The Designated Representative shall report any non-compliance with this ITP to CDFW within 24 hours.
- 7.3. Compliance Monitoring. The Designated Biologist shall be on-site daily when Covered Activities occur. The Designated Biologist shall conduct compliance inspections to (1) minimize incidental take of the Covered Species; (2) prevent unlawful take of species; (3) check for compliance with all measures of this ITP; (4) check all exclusion zones; and (5) ensure that signs, stakes, and fencing are intact, and that Covered Activities are only occurring in the Project Area. The Designated Representative or Designated Biologist shall prepare daily written observation and inspection records summarizing: oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this ITP.
- 7.4. Quarterly Compliance Report. The Designated Representative or Designated Biologist shall compile the observation and inspection records identified in Condition of Approval 7.3 into a Quarterly Compliance Report and submit it to CDFW along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Quarterly Compliance Reports shall be submitted to the CDFW offices listed in the Notices section of this ITP and via e-mail to CDFW's Regional Representative and Headquarters CESA Program. At the time of this ITP's approval, the CDFW Regional Representative is Adam McKannay (adam.mckannay@wildlife.ca.gov) and Headquarters CESA Program email is CESA@wildlife.ca.gov. CDFW may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If CDFW determines the reporting schedule must be changed, CDFW will notify Permittee in writing of the new reporting schedule.
- 7.5. Annual Status Report. Permittee shall provide CDFW with an Annual Status Report (ASR) no later than January 31 of every year beginning with issuance of this ITP and continuing until CDFW accepts the Final Mitigation Report identified below. Each ASR shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports for that year identified in Condition of Approval 7.4; (2) a general description of the status of the Project Area and Covered Activities, including actual or projected completion dates, if known; (3) a copy of the table in the MMRP with

notes showing the current implementation status of each mitigation measure; (4) an assessment of the effectiveness of each completed or partially completed mitigation measure in avoiding, minimizing and mitigating Project impacts; (5) all available information about Project-related incidental take of the Covered Species; (6) an accounting of the number of acres subject to both temporary and permanent disturbance, both for the prior calendar year, and a total since ITP issuance; and (7) information about other Project impacts on the Covered Species.

- 7.6. CNDDDB Observations. The Designated Biologist shall submit all observations of Covered Species to CDFW's California Natural Diversity Database (CNDDDB) within 60 calendar days of the observation and the Designated Biologist shall include copies of the submitted forms with the next Quarterly Compliance Report or ASR, whichever is submitted first relative to the observation.
- 7.7. Final Mitigation Report. No later than 45 days after completion of all mitigation measures, Permittee shall provide CDFW with a Final Mitigation Report. The Designated Biologist shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports and all ASRs; (2) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and (8) any other pertinent information. CDFW shall provide concurrence that mitigation is complete or recommend additional remedies to fulfill outstanding mitigation requirements.
- 7.8. Notification of Take or Injury. Permittee shall immediately notify the Designated Biologist if a Covered Species is taken or injured by a Project-related activity, or if a Covered Species is otherwise found dead or injured within the vicinity of the Project. The Designated Biologist or Designated Representative shall provide initial notification to CDFW by calling the Regional Office at (530) 225-2124. The initial notification to CDFW shall include information regarding the location, species, and number of animals taken or injured and the ITP Number. Following initial notification, Permittee shall send CDFW a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, and if possible provide a photograph, explanation as to cause of take or injury, and any other pertinent information.

8. Take Minimization Measures:

The following requirements are intended to ensure the minimization of incidental take of Covered Species in the Project Area during Covered Activities. Permittee shall implement and adhere to the following conditions to minimize take of Covered Species:

Work Periods

- 8.1. Instream Work Period. In-water work shall be limited to the period of May 1 to August 15 during the first construction season, and during the period of late March 15 to September 15 during the second construction season.
- 8.2. Work During Daylight Hours. All construction activities associated with construction of the new bridge and demolition of the existing bridge, including construction of the temporary gravel work pads, temporary trestles, and temporary falsework, shall be conducted during daylight hours. The exception is minor activities associated with detour maintenance/traffic control, which may be conducted during nighttime hours. Percussive work shall not occur from one (1) hour before sunset to one (1) hour after sunrise.

Anti-Spawning Mats

- 8.3. Anti-Spawning Mat Installation. Anti-spawning mats shall only be utilized during the first construction season. The mats shall be installed between March 1 and April 15. Installation shall be monitored by the Designated Biologist.
- 8.4. Anti-Spawning Mat Locations. Anti-spawning mats shall be limited to the 0.08 acre area identified during underwater surveys as providing potential spawning habitat for Covered Species.
- 8.5. Anti-Spawning Mat Removal. Anti-spawning mats shall be removed between November 1 and November 30 (of the first construction season). Removal shall be monitored by the Designated Biologist.
- 8.6. Anti-Spawning Mat Monitoring. Anti-spawning mats shall be monitored on a weekly basis, by the Designated Biologist, and maintained in proper functioning condition (i.e., secured to substrate without holes or establishment of spawning gravels on top of the mats). Should the anti-spawning mats not be functioning properly, all

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percussive construction work shall cease until the mats have been restored to proper functioning condition.

Gravel Work Pads

- 8.7. Notify CDFW Before Beginning Gravel Work Pad Installation. Permittee shall notify CDFW in writing/email at least fourteen (14) days prior to beginning gravel work pad installation in order to allow a CDFW staff person to be onsite during installation.
- 8.8. Gravel Work Pad Installation. Temporary gravel work pads shall be constructed on either end of the temporary work trestles to minimize the length of the trestles and, therefore, the number of piles required to support the trestles. Permittee shall ensure that the platform is installed in a manner that prevents turbidity, siltation, or pollution.
- 8.9. Gravel Work Pad Materials. Gravel used for the temporary work pads shall consist of 1-inch to 4-inches diameter uncrushed, washed and rounded river rock (aka Chinook spawning sized gravel) and shall meet the Caltrans Gravel Cleanliness Specification No. 85. The stable layer that would need to be placed for the gravel approaches shall consist of the cleanest possible materials (i.e., metal sheets similar to air craft landing mats). If unclean materials such as dirt need to be used, they shall be enveloped in geotextile fabric over the clean gravel to contain the material and allow for a more complete and clean gravel removal from the river.
- 8.10. Gravel Spillage. Permittee shall ensure that gravel from work pads remains contained within the intended construction area and cannot be used for spawning until after the Project is complete. Permittee shall contain the gravel with K-Rails, geotextiles or other barriers and slope protection types that prevent unintended spillage of gravel into the stream channel.
- 8.11. Leave Gravel in Place. Following completion of construction, at least the bottom 1 foot of gravel shall be left in the channel to avoid impacts to the natural bed of the river and to provide a source of suitable spawning gravel to be dispersed by natural flows in the river. Any additional gravel left in the channel shall be pushed towards the stream bank where it can wash into the stream during high flows.
- 8.12. No Harvesting of Gravels. No on-site harvesting of in-situ gravel or cobble may occur for temporary landings or ramps. Where additional material is required within the stream the Permittee shall use off-site commercial/permitted clean round river cobble.

Cast-In-Drilled-Hole (CIDH) Temporary Casings

- 8.13. CIDH Water Removal. Water collected in the CIDH casings shall be pumped into settling basins or into Baker tanks for off-site disposal.
- 8.14. CIDH Temporary Casing Fish Monitoring and Relocation. If a temporary CIDH casing is installed in free standing water, water trapped inside the casing shall be inspected by the Designated Biologist, prior to the next step in CIDH pile construction, immediately following embedment of the temporary casing in the stream bed to ensure that no salmonids or sturgeon have been trapped within the casing (3/32-inch wire mesh would be installed on the bottom of the CIDH casing to prevent entrapment of salmonids or sturgeon inside the casing). Any trapped salmonids or sturgeon shall be removed and returned to the river. The Designated Biologist shall note the number and condition of individuals trapped, the number of individuals relocated, and the date and time of collection and relocation. One or more of the following CDFW/NMFS-approved capture techniques shall be used: dip net, seine, throw net, minnow trap, or hand. Electro fishing may be used if CDFW/NMFS has reviewed and approved the Designated Biologist's qualifications and provided written approval.

Fish Passage

- 8.15. Fish Passage Through Worksite. Adequate fish passage within the Sacramento River at the Project site shall be maintained at all times. At least 200 feet of river channel width shall remain open for fish passage. Unless otherwise directed by the CDFW, velocities shall be suitable to allow efficient and safe passage of all aquatic organisms and life stages.

Pile Driving

- 8.16. Hydroacoustic Thresholds. At no time shall Permittee exceed 183 decibel (dB) accumulated sound exposure level (SEL) as measured 32 meters (m) from the pile, mid-depth in the water column.
- 8.17. Hydroacoustic Monitoring and Reporting. The following measures shall be taken to minimize the number of piles used and duration of pile driving and its potential impacts on listed salmonids and to monitor the range and distance of high underwater sound levels generated by pile driving operations:
- 8.17.1. Real-time monitoring shall be conducted to ensure that underwater sound levels do not exceed the established distances described for pile driving construction.

Monitoring shall follow NMFS standard practices of 2 hydrophones used, the first being placed at 10 m from the pile, mid-depth in the water column, and the second being placed further away near the isopleth estimated for the cumulative (SEL) distance (~32m).

- 8.17.2. The Permittee shall monitor underwater sound during all impact hammer pile driving activities. If underwater sound exceeds the established thresholds at the distances provided above from the piles being driven, then CDFW/NMFS must be contacted within 24 hours before continuing to drive additional piles. No additional pile driving shall occur until approved by CDFW/NMFS in writing.
- 8.17.3. The Permittee shall submit to CDFW/NMFS a monitoring and reporting plan that will incorporate provisions to provide daily, monthly, and seasonal summaries of all Hydroacoustic monitoring results during the pile driving season for approval at least 60 days prior to the start of construction activities. In regards to the daily reports, the Permittee shall submit to CDFW/NMFS a monitoring report (by close of business of the day following the pile driving activities) that provides real-time data regarding the distance (actual or estimated using propagation models) to the thresholds (183 dB accumulated SEL and 150 dB root mean squared (RMS) to determine adverse effects to listed species. Specifically, the reports shall:
- a. Describe the locations of hydroacoustic monitoring stations that were used to document the extent of the underwater sound footprint during pile driving activities, including the number, location, distances, and depths of hydrophones and associated monitoring equipment;
 - b. Include the total number of pile strikes per pile, the interval between strikes, the peak sound pressure level (SPL) and SEL per strike, and accumulated SEL and 150 dB RMS per day for each hydroacoustic monitor deployed;
- 8.17.4. The Permittee shall submit to CDFW/NMFS a final hydroacoustic monitoring summary due 30 days following pile driving events for each temporary and permanent structure required for bridge construction. The reports shall provide a review of the daily, monthly, and seasonal monitoring data and process, as well as any problems that were encountered.

Bridge Demolition

- 8.18. Hazardous Substances and Debris. Construction debris, paint or other coating material, welding products and by-products or any other substances which could be

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hazardous to aquatic life, resulting from Project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. The Permittee shall ensure that all debris, paint overspray, drippings and welding debris are fully contained and unable to enter the stream.

Pumping

- 8.19. Covered Species Entrainment. Permittee shall minimize the potential for Covered Species to be entrained during CIDH de-watering or water drafting activities. Pump intakes shall be placed away from undercut banks that may contain habitat for the Covered Species. The Permittee shall implement the use of a screen in accordance with the NMFS 1996 Juvenile Fish Screen Criteria for Pump Intakes. Screen material may be constructed of any rigid woven, perforated, or slotted material that provides water passage while physically excluding fish. Round openings in the screen shall not exceed 3/32-inch diameter, square openings shall not exceed 3/32-inch measured diagonally, and slotted openings shall not exceed 0.069 inches in width. Approach velocity shall not exceed 0.33 feet per second.

Bridge Lighting

- 8.20. Illumination Levels of Riverine Areas. To minimize impacts to juvenile salmonid migration, bridge lighting, both temporary and permanent, shall be kept to the absolute minimum necessary to provide safe pedestrian and automobile access. Lighting should only be directed at areas intended for illumination. Light reaching the water surface of the Sacramento River immediately below and adjacent to the bridge alignment shall be kept as close to 1.0 lux as feasible. Within 45 days of completion of bridge construction, Permittee shall provide CDFW measurements of lighting intensities, at water level, immediately below, and at stations 50 feet, 100 feet, and 200 feet upstream and downstream the bridge. If 1.0 lux is substantially exceeded at any of these locations corrective actions shall be made to bridge lighting to achieve the desired illuminance.

Erosion Control

- 8.21. Stormwater Pollution Prevention Plan (SWPPP). Permittee shall prepare and implement a SWPPP for the Project. A copy of the SWPPP shall be provided to CDFW prior to beginning Project activities.
- 8.22. No New Project Phase without Erosion Control. No phase of the Project may be started if that phase and its associated erosion control measures cannot be completed prior to the onset of a storm event if that construction phase may cause

the introduction of sediments into the stream. Permittee shall consult 72 hour weather forecasts from the National Weather Service prior to start up of any phase of the Project that may result in sediment runoff to the stream. Erosion control measures shall be inspected frequently, to minimize failure, conduct repairs

9. Habitat Restoration:

CDFW has determined that the creation of compensatory habitat is necessary and required pursuant to CESA to fully mitigate Project-related impacts of the taking on the Covered Species that will result with implementation of the Covered Activities. This determination is based on factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, and CDFW's estimate of the acreage required to provide for adequate compensation.

To meet this requirement, the Permittee shall create 0.95 acres of new spawning habitat by leaving at least the bottom 1-foot of temporary work pad gravel in the stream in order to offset the permanent loss of 0.01 acres of riverine habitat pursuant to Condition of Approval 9.2. Additional gravel may be left against the bank where it can be washed into the stream at high flows. This will improve spawning conditions within the Project reach where one of the Covered Species, Winter-run Chinook salmon, is present and known to spawn. In addition, impacts to both Covered Species will be mitigated through the restoration of 6.78 acres of mixed riparian forest at the Rancho Breisgau Restoration Site, which would offset the permanent effects to 2.26 acres of shaded riverine habitat (i.e. a 3:1 ratio) pursuant to Condition of Approval 9.3. The Rancho Breisgau site is located at the confluence of Battle Creek and the Sacramento River, adjacent to the Battle Creek Salmon and Steelhead Restoration Project and other public lands administered by the Bureau of Land Management and the CDFW. Restoration of habitat must be complete before starting Covered Activities or within 18 months of the effective date of the ITP if Security is provided pursuant to Condition 10 below.

9.1. Cost Estimates. CDFW has estimated the cost of spawning gravel augmentation and restoration of 6.78 acres of mixed riparian forest at Ranch Breisgau as follows:

- 9.1.1. Spawning gravel augmentation costs are estimated at **\$75,000**, per Condition of Approval 9.2 below. This estimate is based off the approximately 1,667 cubic yards of gravel, at a cost of \$45 per cubic yard, needed to cover 0.95 acres 1-foot deep in spawning size gravel.
- 9.1.2. Permittee shall fund River Partners to restore 6.78 acres of riparian habitat, totaling **\$117,800**, per Condition of Approval 9.3 below. This estimate is based off of a **\$50,000** base startup cost and an additional \$10,000/acre for 6.78 acres: **\$67,800**.

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- 9.2. Spawning Habitat Restoration. Permittee shall restore on-site 0.95 acres of Covered Species spawning habitat. Permittee shall place gravel work pads prior to beginning any instream work (percussive, CIDH casing placement, etc). Within one (1) month of completing instream work and removing the top surface of the gravel work pad, Permittee shall provide a final report to CDFW indicating that at least 0.95 acres of gravel at least 1-foot in depth has been left in place by the Permittee to create spawning habitat. Additional gravel may be placed against the streambank where it can wash back into the stream at high flows.
- 9.3. Riparian Restoration at Rancho Breisgau Restoration Site. Permittee shall fund River Partners to undertake 6.78 acres of riparian restoration at the Rancho Breisgau Restoration Site. Restoration shall be consistent with the Riparian Restoration Plan for Rancho Breisgau, prepared by River Partners, February 23, 2015 (Attachment 2). Restoration of habitat must be complete before starting Covered Activities or within 18 months of the effective date of the ITP if Security is provided pursuant to Condition 10 below.
- 9.4. Riparian Maintenance and Monitoring Plan. To ensure a successful riparian restoration effort, all plants shall be monitored and maintained as necessary for a minimum of five years. Annual monitoring reports shall be submitted by December 31 for five years following completion of riparian restoration. All planting shall have a minimum of 80% survival at the end of five years. To help meet this objective, Permittee shall prepare and submit a draft Riparian Maintenance and Monitoring Plan (RMMP) to CDFW at least 60 days prior to beginning restoration activities. At its discretion CDFW may provide changes and recommendations to the draft RMMP. The RMMP shall identify actions necessary for maintaining the plants for five years, including, but not limited to, invasive species management, weeding, deer protection, replacement and other anticipated maintenance activities. The RMMP shall include an outline of the information to be collected for annual reports. It should also provide an outline of corrective actions that may be necessary during the five year mitigation monitoring period and procedures necessary for implementing corrective actions. If revegetation survival and/or cover requirements do not meet established goals, Permittee is responsible for replacement planting, additional watering, weeding, invasive exotic eradication, or any other practice, to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for five years after planting.

10. Performance Security

The Permittee may proceed with Covered Activities only after the Permittee has ensured funding (Security) to complete any activity required by Condition of Approval 9 that has

not been completed before Covered Activities begin. Permittee shall provide Security as follows:

- 10.1. Security Amount. The Security shall be in the amount of **\$192,800**. This amount is based on the cost estimates identified in Condition of Approval 9.1 above.
- 10.2. Security Form. The Security shall be in the form of an irrevocable letter of credit (see Attachment 3) or another form of Security approved in advance in writing by CDFW's Office of the General Counsel.
- 10.3. Security Timeline. The Security shall be provided to CDFW before Covered Activities begin or within 30 days after the effective date of this ITP, whichever occurs first.
- 10.4. Security Holder. The Security shall be held by CDFW or in a manner approved in advance in writing by CDFW.
- 10.5. Security Transmittal. If CDFW holds the Security, Permittee shall transmit it to CDFW with a completed Mitigation Payment Transmittal Form (see Attachment 4) or by way of an approved instrument such as escrow, irrevocable letter of credit, or other.
- 10.6. Security Drawing. The Security shall allow CDFW to draw on the principal sum if CDFW, in its sole discretion, determines that the Permittee has failed to comply with the Conditions of Approval of this ITP.
- 10.7. Security Release. The Security (or any portion of the Security then remaining) shall be released to the Permittee after CDFW has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied, as evidenced by:
 - Written documentation of the augmentation of spawning gravel and restoration of 6.78 acres of the Rancho Breisgau site;
 - Timely submission of all required reports;
 - An onsite inspection by CDFW; and
 - Written approval from CDFW

Even if Security is provided, the Permittee must complete the mitigation requirements no later than 18 months from the effective date of this ITP. CDFW may require the Permittee to provide additional mitigation and/or additional funding to ensure the impacts of the taking are minimized and fully mitigated, as required by law, if the Permittee does not

complete these requirements within the specified timeframe.

Amendment:

This ITP may be amended as provided by California Code of Regulations, Title 14, section 783.6, subdivision (c), and other applicable law. This ITP may be amended without the concurrence of the Permittee as required by law, including if CDFW determines that continued implementation of the Project as authorized under this ITP would jeopardize the continued existence of the Covered Species or where Project changes or changed biological conditions necessitate an ITP amendment to ensure that all Project-related impacts of the taking to the Covered Species are minimized and fully mitigated.

Stop-Work Order:

CDFW may issue Permittee a written stop-work order requiring Permittee to suspend any Covered Activity for an initial period of up to 25 days to prevent or remedy a violation of this ITP, including but not limited to the failure to comply with reporting or monitoring obligations, or to prevent the unauthorized take of any CESA endangered, threatened, or candidate species. Permittee shall stop work immediately as directed by CDFW upon receipt of any such stop-work order. Upon written notice to Permittee, CDFW may extend any stop-work order issued to Permittee for a period not to exceed 25 additional days. Suspension and revocation of this ITP shall be governed by California Code of Regulations, Title 14, section 783.7, and any other applicable law. Neither the Designated Biologist nor CDFW shall be liable for any costs incurred in complying with stop-work orders.

Compliance with Other Laws:

This ITP sets forth CDFW's requirements for the Permittee to implement the Project pursuant to CESA. This ITP does not necessarily create an entitlement to proceed with the Project. Permittee is responsible for complying with all other applicable federal, state, and local law.

Notices:

The Permittee shall deliver a fully executed duplicate original ITP by registered first class mail or overnight delivery to the following address:

Habitat Conservation Planning Branch
California Department of Fish and Wildlife
Attention: CESA Permitting Program
1416 Ninth Street, Suite 1266
Sacramento, CA 95814

Written notices, reports and other communications relating to this ITP shall be delivered to CDFW by registered first class mail at the following address, or at addresses CDFW may subsequently provide the Permittee. Notices, reports, and other communications shall

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reference the Project name, Permittee, and ITP Number 2081-2016-002-01 in a cover letter and on any other associated documents.

Original cover with attachment(s) to:

Neil Manji, Regional Manager
California Department of Fish and Wildlife
Northern Region
601 Locust Street
Redding, CA 96001
(530) 225-2300
Fax (530)225-2055

and a copy to:

Habitat Conservation Planning Branch
California Department of Fish and Wildlife
Attention: CESA Permitting Program
1416 Ninth Street, Suite 1266
Sacramento, CA 95814

Unless Permittee is notified otherwise, CDFW's Regional Representative for purposes of addressing issues that arise during implementation of this ITP is:

Adam McKannay
601 Locust Street
Redding, CA 96001
(530) 225-2124
FAX (530) 225-0325
Adam.McKannay@wildlife.ca.gov

Compliance with CEQA:

CDFW's issuance of this ITP is subject to CEQA. CDFW is a responsible agency pursuant to CEQA with respect to this ITP because of prior environmental review of the Project by the lead agency, Tehama County Department of Public Works (See generally Pub. Resources Code, §§ 21067, 21069.) The lead agency's prior environmental review of the Project is set forth in the Mitigated Negative Declaration and Initial Study, (SCH No.: 2007082085) dated June, 2014, that the Tehama County Department of Public Works adopted for Jellys Ferry Road Bridge Replacement Project on June 24, 2014. At the time the lead agency adopted the

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Mitigated Negative Declaration and approved the Project it also adopted various mitigation measures for the Covered Species as conditions of Project approval.

This ITP, along with CDFW's related CEQA findings, which are available as a separate document, provide evidence of CDFW's consideration of the lead agency's Mitigated Negative Declaration for the Project and the environmental effects related to issuance of this ITP (CEQA Guidelines, § 15096, subd. (f)). CDFW finds that issuance of this ITP will not result in any previously undisclosed potentially significant effects on the environment or a substantial increase in the severity of any potentially significant environmental effects previously disclosed by the lead agency. Furthermore, to the extent the potential for such effects exists, CDFW finds adherence to and implementation of the Conditions of Project Approval adopted by the lead agency, and that adherence to and implementation of the Conditions of Approval imposed by CDFW through the issuance of this ITP, will avoid or reduce to below a level of significance any such potential effects. CDFW consequently finds that issuance of this ITP will not result in any significant, adverse impacts on the environment.

Findings Pursuant to CESA:

These findings are intended to document CDFW's compliance with the specific findings requirements set forth in CESA and related regulations. (Fish & G. Code § 2081, subs. (b)-(c); Cal. Code Regs., tit. 14, §§ 783.4, subds. (a)-(b), 783.5, subd. (c)(2).)

CDFW finds based on substantial evidence in the ITP application, Mitigated Negative Declaration, NMFS Biological Opinion, the results of site visits and consultations, and the administrative record of proceedings, that issuance of this ITP complies and is consistent with the criteria governing the issuance of ITPs pursuant to CESA:

- (1) Take of Covered Species as defined in this ITP will be incidental to the otherwise lawful activities covered under this ITP;
- (2) Impacts of the taking on Covered Species will be minimized and fully mitigated through the implementation of measures required by this ITP and as described in the MMRP. Measures include: (1) spawning habitat creation and restoration; (2) restoration of 6.78 acres of riparian habitat; (3) establishment of avoidance zones; (4) worker education; and (5) Quarterly Compliance Reports. CDFW evaluated factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, and CDFW's estimate of the acreage required to provide for adequate compensation. Based on this evaluation, CDFW determined that the creation of 0.95 acres of compensatory spawning habitat that is contiguous with other protected Covered Species habitat and is of higher quality than the habitat being destroyed by the Project as well as 6.78 acres of riparian habitat restoration, along with the minimization, monitoring, reporting, and funding

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requirements of this ITP minimizes and fully mitigates the impacts of the taking caused by the Project;

- (3) The take avoidance and mitigation measures required pursuant to the conditions of this ITP and its attachments are roughly proportional in extent to the impacts of the taking authorized by this ITP;
- (4) The measures required by this ITP maintain Permittee's objectives to the greatest extent possible;
- (5) All required measures are capable of successful implementation;
- (6) This ITP is consistent with any regulations adopted pursuant to Fish and Game Code sections 2112 and 2114;
- (7) Permittee has ensured adequate funding to implement the measures required by this ITP as well as for monitoring compliance with, and the effectiveness of, those measures for the Project; and
- (8) Issuance of this ITP will not jeopardize the continued existence of the Covered Species based on the best scientific and other information reasonably available, and this finding includes consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities. Moreover, CDFW's finding is based, in part, on CDFW's express authority to amend the terms and conditions of this ITP without concurrence of the Permittee as necessary to avoid jeopardy and as required by law.

Attachments:

FIGURE 1	Map of Project
ATTACHMENT 1	Mitigation Monitoring and Reporting Program
ATTACHMENT 2	Riparian Restoration Plan for Rancho Breisgau
ATTACHMENT 3	Letter of Credit Form
ATTACHMENT 4	Mitigation Payment Transmittal Form

ISSUED BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

on 4/5/10



Neil Manji, Regional Manager
NORTHERN REGION

ACKNOWLEDGMENT

The undersigned: (1) warrants that he or she is acting as a duly authorized representative of the Permittee, (2) acknowledges receipt of this ITP, and (3) agrees on behalf of the Permittee to comply with all terms and conditions

By:  Date: 4-7-16

Printed Name: GARY ANTONE Title: DPW

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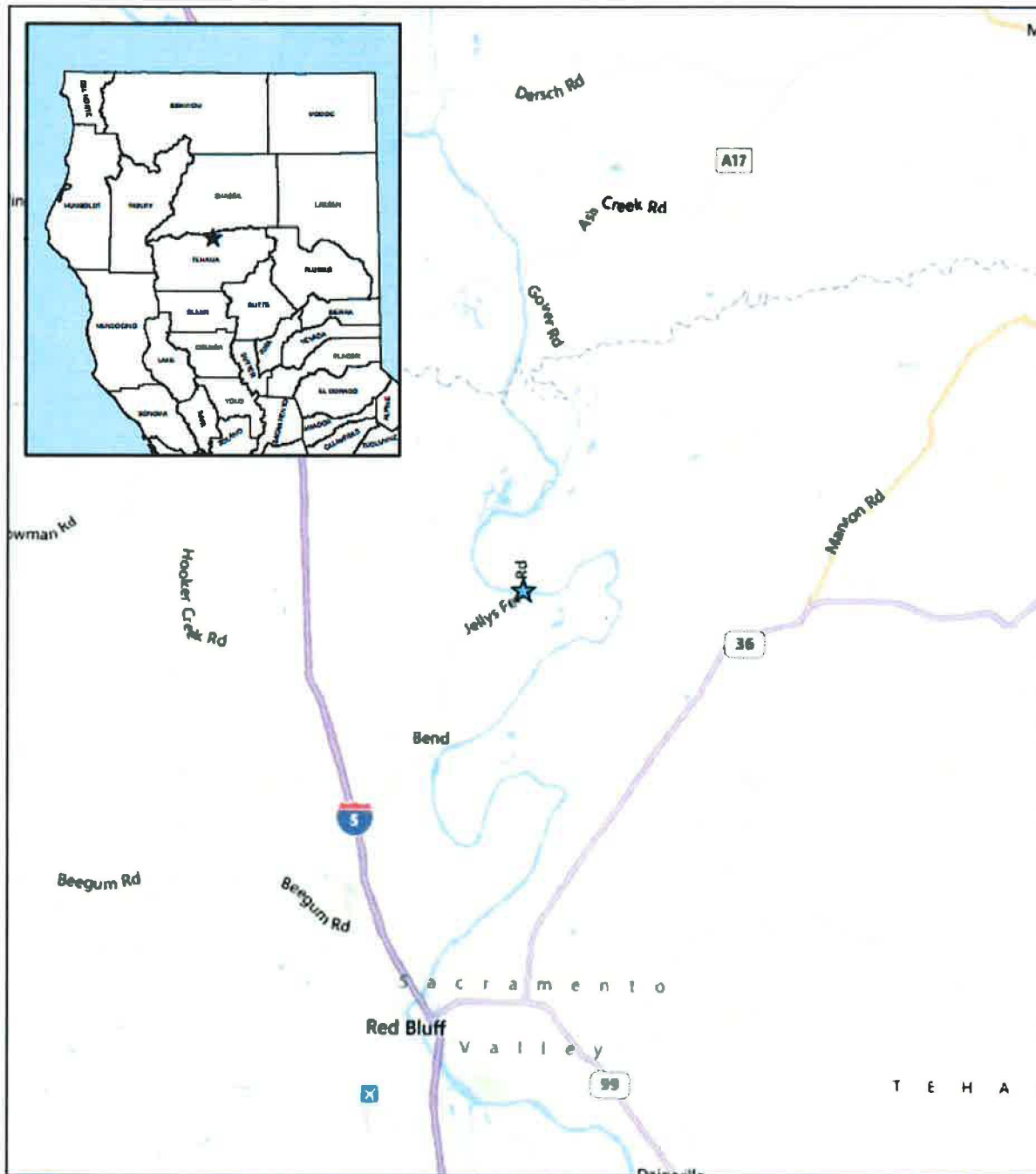


FIGURE 1



0 1.5 3
MILES

LEGEND

★ Project Location

SOURCE: Microsoft Bing Map - Roads (2010)

[ATy]0602[gn]ba_usfw_fig1-proj_loc_8.13.mxd (8/13/2013)

*Jellys Ferry Road Over the Sacramento
River Bridge (08C0043) Replacement
(SPK-2008-01568)
02-TEHAMA-0-CR
Federal Project No. BRLSZD-5908 (031)
Project Location*

Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE MITIGATION MONITORING AND REPORTING PROGRAM (MMRP) CALIFORNIA ENDANGERED SPECIES ACT

INCIDENTAL TAKE PERMIT NO. 2081-2016-002-01

PERMITTEE: Tehama County Department of Public Works

PROJECT: Jellys Ferry Road Bridge Replacement Project

PURPOSE OF THE MMRP

The purpose of the MMRP is to ensure that the impact minimization and mitigation measures required by the Department of Fish and Wildlife (CDFW) for the above-referenced Project are properly implemented, and thereby to ensure compliance with section 2081(b) of the Fish and Game Code and section 21081.6 of the Public Resources Code. A table summarizing the mitigation measures required by CDFW is attached. This table is a tool for use in monitoring and reporting on implementation of mitigation measures, but the descriptions in the table do not supersede the mitigation measures set forth in the California Incidental Take Permit (ITP) and in attachments to the ITP, and the omission of a permit requirement from the attached table does not relieve the Permittee of the obligation to ensure the requirement is performed.

OBLIGATIONS OF PERMITTEE

Mitigation measures must be implemented within the time periods indicated in the table that appears below. Permittee has the primary responsibility for monitoring compliance with all mitigation measures and for reporting to CDFW on the progress in implementing those measures. These monitoring and reporting requirements are set forth in the ITP itself and are summarized at the front of the attached table.

VERIFICATION OF COMPLIANCE, EFFECTIVENESS

CDFW may, at its sole discretion, verify compliance with any mitigation measure or independently assess the effectiveness of any mitigation measure.

TABLE OF MITIGATION MEASURES

The following items are identified for each mitigation measure: Mitigation Measure, Source, Implementation Schedule, Responsible Party, and Status/Date/Initials. The Mitigation Measure column summarizes the mitigation requirements of the ITP. The Source column identifies the ITP condition that sets forth the mitigation measure. The Implementation Schedule column shows the date or phase when each mitigation measure will be implemented. The Responsible Party column identifies the person or agency that is primarily responsible for implementing the mitigation measure. The Status/Date/Initials column shall be completed by the Permittee during preparation of each Status Report and the Final Mitigation Report, and must identify the implementation status of each mitigation measure, the date that status was determined, and the initials of the person determining the status.

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
BEFORE DISTURBING SOIL OR VEGETATION					
1	<u>Designated Representative</u> - Before starting Covered Activities, Permittee shall designate a representative (Designated Representative) responsible for communications with CDFW and overseeing compliance with the ITP. Permittee shall notify CDFW in writing before starting Covered Activities of the Designated Representative's name, business address, and contact information, and shall notify CDFW in writing if a substitute Designated Representative is selected or identified at any time during the term of the ITP.	ITP Condition # 6.1	Before commencing ground- or vegetation-disturbing activities/ Entire Project	Permittee	
2	<u>Designated Biologist</u> - Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information of a biological monitor (Designated Biologist) at least 30 days before starting Covered Activities. Permittee shall ensure that the Designated Biologist is knowledgeable and experienced in the biology, natural history, collecting and handling of the Covered Species. The Designated Biologist shall be responsible for monitoring Covered Activities to help minimize and fully mitigate or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. Permittee shall obtain CDFW approval of the Designated Biologist in writing before starting Covered Activities, and shall also obtain approval in advance in writing if the Designated Biologist must be changed.	ITP Condition # 6.2	Before commencing ground- or vegetation-disturbing activities	Permittee	
3	<u>Education Program</u> - Permittee shall conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the Designated Biologist that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in the ITP. Permittee shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the Project Area. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the Project Area. Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.	ITP Condition # 6.4	Before commencing ground- or vegetation-disturbing activities / Entire Project	Permittee	
4	<u>Trash Abatement</u> - Permittee shall initiate a trash abatement program before starting Covered Activities and shall continue the program for the duration of the Project. Permittee shall ensure that trash and food items are contained in closed (animal-proof) containers and removed regularly (at least once a week) to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.	ITP Condition # 6.6	Before commencing ground- or vegetation-disturbing activities / Entire Project	Permittee	
5	<u>Dust Control</u> - Permittee shall implement dust control measures during Covered Activities to facilitate visibility for monitoring of the Covered Species by the Designated Biologist. Permittee shall keep the amount of water used to the minimum amount needed, and shall not allow water to form puddles.	ITP Condition # 6.7	Before commencing ground- or vegetation-disturbing activities/ Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
6	<u>Delineation of Property Boundaries</u> - Before starting Covered Activities, Permittee shall clearly delineate the boundaries of the Project Area with fencing, stakes or flags. Permittee shall restrict all Covered Activities to within the fenced, staked or flagged areas. Permittee shall maintain all fencing, stakes and flags until the completion of Covered Activities in that area.	ITP Condition # 6.9	Before commencing ground- or vegetation-disturbing activities / Entire Project	Permittee	
7	<u>Delineation of Habitat</u> - Permittee shall clearly delineate habitat of the Covered Species within the Project Area with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of Covered Species' habitat.	ITP Condition # 6.10	Before commencing ground- or vegetation-disturbing activities / Entire Project	Permittee	
8	<u>Notification Before Commencement</u> - The Designated Representative shall notify CDFW 14 calendar days before starting Covered Activities and shall document compliance with all pre-Project Conditions of Approval before starting Covered Activities.	ITP Condition # 7.1	Before commencing ground- or vegetation-disturbing activities	Permittee	
9	<u>Habitat Restoration</u> - Permittee shall create 0.95 acres of new spawning habitat by leaving at least the bottom 1-foot of temporary work pad gravel in the stream in order to offset the permanent loss of 0.01 acres of riverine habitat pursuant to Condition of Approval 9.2. Additional gravel may be left against the bank where it can be washed into the stream at high flows. This will improve spawning conditions within the Project reach where one of the Covered Species, Winter-run Chinook salmon, is present and known to spawn. In addition, impacts to both Covered Species will be mitigated through the restoration of 6.78 acres of mixed riparian forest at the Rancho Breisgau Restoration Site, which would offset the permanent effects to 2.26 acres of shaded riverine habitat (i.e. a 3:1 ratio) pursuant to Condition of Approval 9.3. Restoration of habitat must be complete before starting Covered Activities or within 18 months of the effective date of the ITP if Security is provided pursuant to Condition 10 below.	ITP Condition # 9	Before commencing ground- or vegetation-disturbing activities (or within 18 months of issuance of the ITP if Security is provided)	Permittee	
10	<p><u>Cost Estimates</u> - CDFW has estimated the cost of spawning gravel augmentation and restoration of 6.78 acres of mixed riparian forest at Ranch Breisgau as follows:</p> <ul style="list-style-type: none"> a) Spawning gravel augmentation costs are estimated at \$75,000, per Condition of Approval 9.2 below. This estimate is based off the approximately 1,667 cubic yards of gravel, at a cost of \$45 per cubic yard, needed to cover 0.95 acres 1-foot deep in spawning size gravel. b) Permittee shall fund River Partners to restore 6.78 acres of riparian habitat, totaling \$117,800, per [Condition of Approval 9.3] below. This estimate is based off of a \$50,000 base startup cost and an additional \$10,000/acre for 6.78 acres: \$67,800. 	ITP Condition # 9.1	Before commencing ground- or vegetation-disturbing activities (or within 18 months of issuance of the ITP if Security is provided)	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
11	Spawning Habitat Restoration - Permittee shall restore on-site 0.95 acres of Covered Species spawning habitat. Permittee shall place gravel work pads prior to beginning any instream work (percussive, CIDH casing placement, etc). Within one (1) month of completing instream work and removing the top surface of the gravel work pad, Permittee shall provide a final report to CDFW indicating that at least 0.95 acres of gravel at least 1-foot in depth has been left in place by the Permittee to create spawning habitat. Additional gravel may be placed against the streambank where it can wash back into the stream at high flows.	ITP Condition # 9.2	Before commencing ground- or vegetation-disturbing activities (or within 18 months of issuance of the ITP if Security is provided)	Permittee	
12	Riparian Restoration at Rancho Breisgau Restoration Site - Prior to initiating Covered Activities, or no later than 18 months from the issuance of the ITP if Security is provided pursuant to Condition 10 below, the Permittee shall fund River Partners to undertake 6.78 acres of riparian restoration at the Rancho Breisgau Restoration Site. Restoration shall be consistent with the Riparian Restoration Plan for Rancho Breisgau. Restoration of habitat must be complete before starting Covered Activities or within 18 months of the effective date of the ITP if Security is provided pursuant to Condition 10 below.	ITP Condition # 9.3	Before commencing ground- or vegetation-disturbing activities (or within 18 months of issuance of the ITP if Security is provided)	Permittee	
13	Riparian Restoration And Monitoring Plan. To ensure a successful riparian restoration effort, all plants shall be monitored and maintained as necessary for a minimum of five years. All planting shall have a minimum of 80% survival at the end of five years. Annual monitoring reports shall be submitted by December 31 st for five years following completion of riparian restoration. The help meet this objective, Permittee shall prepare and submit a draft Riparian Restoration and Monitoring Plan (RMMP) to CDFW at least 60 days prior to beginning restoration activities. At its discretion CDFW may provide changes and recommendations to the draft RMMP. The RMMP shall identify actions necessary for maintaining the plants for five years, including, but not limited to, invasive species management, weeding, deer protection, replacement and other anticipated maintenance activities. The RMMP shall include an outline of the information to be collected for annual reports. It should also provide an outline of corrective actions that may be necessary during the five year mitigation monitoring period and procedures necessary for implementing corrective actions. If revegetation survival and/or cover requirements do not meet established goals, Permittee is responsible for replacement planting, additional watering, weeding, invasive exotic eradication, or any other practice, to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for five years after planting.	ITP Condition # 9.4	Before commencing ground- or vegetation-disturbing activities (or within 18 months of issuance of the ITP if Security is provided)	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
14	<p>The Permittee may proceed with Covered Activities only after the Permittee has ensured funding (Security) to complete any activity required by Condition of Approval 9 that has not been completed before Covered Activities begin. Permittee shall provide Security as follows:</p> <p>c) <u>Security Amount</u>. The Security shall be in the amount of \$192,800. This amount is based on the cost estimates identified in Condition of Approval 9.1 above.</p> <p>d) <u>Security Form</u>. The Security shall be in the form of an irrevocable letter of credit (see [Attachment 3]) or another form of Security approved in advance in writing by CDFW's Office of the General Counsel.</p> <p>e) <u>Security Timeline</u>. The Security shall be provided to CDFW before Covered Activities begin or within 30 days after the effective date of the ITP, whichever occurs first.</p> <p>f) <u>Security Holder</u>. The Security shall be held by CDFW or in a manner approved in advance in writing by CDFW.</p> <p>g) <u>Security Transmittal</u>. If CDFW holds the Security, Permittee shall transmit it to CDFW with a completed Mitigation Payment Transmittal Form (see [Attachment 4]) or by way of an approved instrument such as escrow, irrevocable letter of credit, or other.</p> <p>h) <u>Security Drawing</u>. The Security shall allow CDFW to draw on the principal sum if CDFW, in its sole discretion, determines that the Permittee has failed to comply with the Conditions of Approval of the ITP.</p> <p>i) <u>Security Release</u>. The Security (or any portion of the Security then remaining) shall be released to the Permittee after CDFW has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied, as evidenced by:</p> <ul style="list-style-type: none"> • Written documentation of the augmentation of spawning gravel and restoration of 6.78 acres of the Rancho Breisgau site; • Timely submission of all required reports. • An onsite inspection by CDFW; and • Written approval from CDFW <p>Even if Security is provided, the Permittee must complete the mitigation requirements no later than 18 months from the effective date of the ITP. CDFW may require the Permittee to provide additional mitigation and/or additional funding to ensure the impacts of the taking are minimized and fully mitigated, as required by law, if the Permittee does not complete these requirements within the specified timeframe.</p>	ITP Condition # 10	Before commencing ground- or vegetation-disturbing activities (or within 18 months of issuance of the ITP if Security is provided)	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
DURING CONSTRUCTION					
15	<u>Compliance Monitoring</u> - The Designated Biologist shall be on-site daily when Covered Activities occur. The Designated Biologist shall conduct compliance inspections to (1) minimize incidental take of the Covered Species; (2) prevent unlawful take of species; (3) check for compliance with all measures of the ITP; (4) check all exclusion zones; and (5) ensure that signs, stakes, and fencing are intact, and that Covered Activities are only occurring in the Project Area. The Designated Representative or Designated Biologist shall prepare daily written observation and inspection records summarizing: oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by the ITP.	ITP Condition # 7.3	Entire Project	Permittee	
16	<u>Quarterly Compliance Report</u> - The Designated Representative or Designated Biologist shall compile the observation and inspection records identified in Condition of Approval 7.3 into a Quarterly Compliance Report and submit it to CDFW along with a copy of this MMRP table with notes showing the current implementation status of each mitigation measure. Quarterly Compliance Reports shall be submitted to the CDFW offices listed in the Notices section of this ITP and via e-mail to CDFW's Regional Representative and Headquarters CESA Program. At the time of the ITP's approval, the CDFW Regional Representative is Adam McKannay (adam.mckannay@wildlife.ca.gov) and Headquarters CESA Program email is CESA@wildlife.ca.gov. CDFW may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If CDFW determines the reporting schedule must be changed, CDFW will notify Permittee in writing of the new reporting schedule.	ITP Condition # 7.4	Entire Project	Permittee	
17	<u>Annual Status Report</u> - Permittee shall provide CDFW with an Annual Status Report (ASR) no later than January 31 of every year beginning with issuance of the ITP and continuing until CDFW accepts the Final Mitigation Report identified below. Each ASR shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports for that year identified in Condition of Approval 7.4; (2) a general description of the status of the Project Area and Covered Activities, including actual or projected completion dates, if known; (3) a copy of the table in this MMRP with notes showing the current implementation status of each mitigation measure; (4) an assessment of the effectiveness of each completed or partially completed mitigation measure in avoiding, minimizing and mitigating Project impacts; (5) all available information about Project-related incidental take of the Covered Species; (6) an accounting of the number of acres subject to both temporary and permanent disturbance, both for the prior calendar year, and a total since ITP issuance; and (7) information about other Project impacts on the Covered Species.	ITP Condition # 7.5	Entire Project	Permittee	
18	<u>CNDDDB Observation</u> - The Designated Biologist shall submit all observations of Covered Species to CDFW's California Natural Diversity Database (CNDDDB) within 60 calendar days of the observation and the Designated Biologist shall include copies of the submitted forms with the next Quarterly Compliance Report or ASR, whichever is submitted first relative to the observation.	ITP Condition # 7.6	Entire Project	Permittee	
19	<u>Notification of Non-compliance</u> - The Designated Representative shall immediately notify CDFW in writing if it determines that the Permittee is not in compliance with any Condition of Approval of the ITP, including but not limited to any actual or anticipated failure to implement measures within the time periods indicated in the ITP and/or this MMRP. The Designated Representative shall report any non-compliance with the ITP to CDFW within 24 hours.	ITP Condition # 7.2	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
20	<u>Construction Monitoring Notebook</u> - The Designated Biologist shall maintain a construction-monitoring notebook on-site throughout the construction period which shall include a copy of the ITP with attachments and a list of signatures of all personnel who have successfully completed the education program. Permittee shall ensure a copy of the construction-monitoring notebook is available for review at the Project site upon request by CDFW.	ITP Condition # 6.5	Entire Project	Permittee	
21	<u>Erosion Control Materials</u> - Permittee shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as monofilament netting (erosion control matting) or similar material, in potential Covered Species' habitat.	ITP Condition # 6.8	Entire Project	Permittee	
22	<u>Project Access</u> - Project-related personnel shall access the Project Area using routes identified in the Project Description and shall not cross Covered Species' habitat outside of or en route to the Project Area. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. If Permittee determines construction of routes for travel are necessary outside of the Project Area, the Designated Representative shall contact CDFW for written approval before carrying out such an activity. CDFW may require an amendment to the ITP, among other reasons, if additional take of Covered Species will occur as a result of the Project modification.	ITP Condition # 6.11	Entire Project	Permittee	
23	<u>Staging Areas</u> - Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the Project Area using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked Project Area unless provided for as described in Condition of Approval 6.11 of the ITP.	ITP Condition # 6.12	Entire Project	Permittee	
24	<u>Hazardous Waste</u> - Permittee shall immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. Permittee shall exclude the storage and handling of hazardous materials from the Project Area and shall properly contain and dispose of any unused or leftover hazardous products off-site.	ITP Condition # 6.13	Entire Project	Permittee	
25	<u>CDFW Access</u> - Permittee shall provide CDFW staff with reasonable access to the Project and mitigation lands under Permittee control, and shall otherwise fully cooperate with CDFW efforts to verify compliance with or effectiveness of mitigation measures set forth in the ITP.	ITP Condition # 6.14	Entire Project	Permittee	
26	<u>Notification of Take or Injury</u> - Permittee shall immediately notify the Designated Biologist if a Covered Species is taken or injured by a Project-related activity, or if a Covered Species is otherwise found dead or injured within the vicinity of the Project. The Designated Biologist or Designated Representative shall provide initial notification to CDFW by calling the Regional Office at (530) 225-2124. The initial notification to CDFW shall include information regarding the location, species, and number of animals taken or injured and the ITP Number. Following initial notification, Permittee shall send CDFW a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, and if possible provide a photograph, explanation as to cause of take or injury, and any other pertinent information.	ITP Condition # 7.8	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
27	<u>Designated Biologist Authority</u> - To ensure compliance with the Conditions of Approval of the ITP, the Designated Biologist shall have authority to immediately stop any activity that does not comply with the ITP, and/or to order any reasonable measure to avoid the unauthorized take of an individual of the Covered Species.	ITP Condition # 6.3	Entire Project	Permittee	
28	<u>Instream Work Period.</u> In-water work shall be limited to the period of May 1 to August 15 during the first construction season, and during the period of late March 15 to September 15 during the second construction season.	ITP Condition # 8.1	Entire Project	Permittee	
29	<u>Work During Daylight Hours.</u> All construction activities associated with construction of the new bridge and demolition of the existing bridge, including construction of the temporary gravel work pads, temporary trestles, and temporary falsework, shall be conducted during daylight hours. The exception is minor activities associated with detour maintenance/traffic control, which may be conducted during nighttime hours. Percussive work shall not occur from one (1) hour before sunset to one (1) hour after sunrise.	ITP Condition # 8.2	Entire Project	Permittee	
30	<u>Anti-spawning Mats Installation.</u> Anti-spawning mats shall only be utilized during the first construction season. The mats shall be installed between March 1 and April 15. Installation shall be monitored by the Designated Biologist.	ITP Condition # 8.3	Entire Project	Permittee	
31	<u>Anti-Spawning Mat Locations.</u> Anti-spawning mats shall be limited to the 0.08 acre area identified during underwater surveys as providing potential spawning habitat for Covered Species.	ITP Condition # 8.4	Entire Project	Permittee	
32	<u>Anti-spawning Mat Removal.</u> Anti-spawning mats shall be removed between November 1 and November 30 (of the first construction season). Removal shall be monitored by the Designated Biologist.	ITP Condition # 8.5	Entire Project	Permittee	
33	<u>Anti-spawning Mat Monitoring.</u> Anti-spawning mats shall be monitored on a weekly basis, by the Designated Biologist, and maintained in proper functioning condition (i.e., secured to substrate without holes or establishment of spawning gravels on top of the mats). Should the anti-spawning mats not be functioning properly, all percussive construction work shall cease until the mats have been restored to proper functioning condition.	ITP Condition # 8.6	Entire Project	Permittee	
34	<u>Notify CDFW Before Beginning Gravel Work Pad Installation.</u> Permittee shall notify CDFW in writing/email at least fourteen (14) days prior to beginning gravel work pad installation in order to allow a CDFW staff person to be onsite during installation.	ITP Condition # 8.7	Fourteen (14) days prior to gravel pad installation	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
35	<u>Gravel Work Pad Installation.</u> Temporary gravel work pads shall be constructed on either end of the temporary work trestles to minimize the length of the trestles and, therefore, the number of piles required to support the trestles. Permittee shall ensure that the platform is installed in a manner that prevents turbidity, siltation, or pollution.	ITP Condition # 8.8	Entire Project	Permittee	
36	<u>Gravel Work Pad Materials.</u> Gravel used for the temporary work pads shall consist of 1-inch to 4-inches diameter uncrushed, washed and rounded river rock (aka Chinook spawning sized gravel) and shall meet the Caltrans Gravel Cleanliness Specification No. 85. The stable layer that would need to be placed for the gravel approaches shall consist of the cleanest possible materials (i.e., metal sheets similar to air craft landing mats). If unclean materials such as dirt need to be used, they shall be enveloped in geotextile fabric over the clean gravel to contain the material and allow for a more complete and clean gravel removal from the river.	ITP Condition # 8.9	Entire Project	Permittee	
37	<u>Gravel Spillage.</u> Permittee shall ensure that gravel from work pads remains contained within the intended construction area and cannot be used for spawning until after the Project is complete. Permittee shall contain the gravel with K-Rails, geotextiles or other barriers and slope protection types that prevent unintended spillage of gravel into the stream channel.	ITP Condition # 8.10	Entire Project	Permittee	
38	<u>Leave Gravel In Place.</u> Following completion of construction, at least the bottom 1 foot of gravel shall be left in the channel to avoid impacts to the natural bed of the river and to provide a source of suitable spawning gravel to be dispersed by natural flows in the river. Any additional gravel left in the channel shall be pushed towards the stream bank where it can wash into the stream during high flows.	ITP Condition # 8.11	Entire Project	Permittee	
39	<u>No Harvesting of Gravels.</u> No on-site harvesting of in-situ gravel or cobble may occur for temporary landings or ramps. Where additional material is required within the stream the Permittee shall use off-site commercial/permitted clean round river cobble.	ITP Condition # 8.12	Entire Project	Permittee	
40	<u>CIDH Water Removal.</u> Water collected in the CIDH casings shall be pumped into settling basins or into Baker tanks for off-site disposal.	ITP Condition # 8.13	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
41	<u>CIDH Temporary Casing Fish Monitoring and Relocation.</u> If a temporary CIDH casing is installed in free standing water, water trapped inside the casing shall be inspected by the Designated Biologist, prior to the next step in CIDH pile construction, immediately following embedment of the temporary casing in the stream bed to ensure that no salmonids or sturgeon have been trapped within the casing (3/32-inch wire mesh would be installed on the bottom of the CIDH casing to prevent entrapment of salmonids or sturgeon inside the casing). Any trapped salmonids or sturgeon shall be removed and returned to the river. The Designated Biologist shall note the number and condition of individuals trapped, the number of individuals relocated, and the date and time of collection and relocation. One or more of the following CDFW/NMFS-approved capture techniques shall be used: dip net, seine, throw net, minnow trap, or hand. Electro fishing may be used if CDFW/NMFS has reviewed and approved the Designated Biologist's qualifications and provided written approval.	ITP Condition # 8.14	Entire Project	Permittee	
42	<u>Fish Passage Through Worksite.</u> Adequate fish passage within the Sacramento River at the Project site shall be maintained at all times. At least 200 feet of river channel width shall remain open for fish passage. Unless otherwise directed by the CDFW, velocities shall be suitable to allow efficient and safe passage of all aquatic organisms and life stages.	ITP Condition # 8.15	Entire Project	Permittee	
43	<u>Hydroacoustic Thresholds.</u> At no time shall Permittee exceed 183 dB accumulated sound exposure level (SEL) as measured 32 meters from the pile, mid-depth in the water column.	ITP Condition # 8.16	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
44	<p>a) <u>Hydroacoustic Monitoring and Reporting.</u> The following measures shall be taken to minimize the number of piles used and duration of pile driving and its potential impacts on listed salmonids and to monitor the range and distance of high underwater sound levels generated by pile driving operations:</p> <p>i) Real-time monitoring shall be conducted to ensure that underwater sound levels do not exceed the established distances described for pile driving construction. Monitoring shall follow NMFS standard practices of 2 hydrophones used, the first being placed at 10 m from the pile, mid-depth in the water column, and the second being placed further away near the isopleth estimated for the cumulative sound exposure level (SEL) distance (~32m).</p> <p>ii) The Permittee shall monitor underwater sound during all impact hammer pile driving activities. If underwater sound exceeds the established thresholds at the distances provided above from the piles being driven, then CDFW/NMFS must be contacted within 24 hours before continuing to drive additional piles. No Additional pile driving shall occur until approved by CDFW/NMFS in writing.</p> <p>iii) The Permittee shall submit to CDFW/NMFS a monitoring and reporting plan that will incorporate provisions to provide daily, monthly, and seasonal summaries of all Hydroacoustic monitoring results during the pile driving season for approval at least 60 days prior to the start of construction activities. In regards to the daily reports, the Permittee shall submit to CDFW/NMFS a monitoring report (by close of business of the day following the pile driving activities) that provides real-time data regarding the distance (actual or estimated using propagation models) to the thresholds (183 dB accumulated SEL and 150 dB RMS) to determine adverse effects to listed species. Specifically, the reports shall:</p> <p>(1) Describe the locations of hydroacoustic monitoring stations that were used to document the extent of the underwater sound footprint during pile driving activities, including the number, location, distances, and depths of hydrophones and associated monitoring equipment;</p> <p>(2) Include the total number of pile strikes per pile, the interval between strikes, the peak SPL and SEL per strike, and accumulated SEL and 150 dB RMS per day for each hydroacoustic monitor deployed;</p> <p>iv) The Permittee shall submit to CDFW/NMFS a final hydroacoustic monitoring summary due 30 days following pile driving events for each temporary and permanent structure required for bridge construction. The reports shall provide a review of the daily, monthly, and seasonal monitoring data and process, as well as any problems that were encountered.</p>	ITP Condition # 8.17	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
45	<u>Hazardous Substances and Debris.</u> Construction debris, paint or other coating material, welding products and by-products or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. The Permittee shall ensure that all debris, paint overspray, drippings and welding debris are fully contained and unable to enter the stream.	ITP Condition # 8.18	Entire Project	Permittee	
46	<u>Covered Species Entrainment.</u> Permittee shall minimize the potential for Covered Species to be entrained during CIDH de-watering or water drafting activities. Pump intakes shall be placed away from undercut banks that may contain habitat for the Covered Species. The Permittee shall implement the use of a screen in accordance with the NMFS 1996 Juvenile Fish Screen Criteria for Pump Intakes. Screen material may be constructed of any rigid woven, perforated, or slotted material that provides water passage while physically excluding fish. Round openings in the screen shall not exceed 3/32-inch diameter, square openings shall not exceed 3/32-inch measured diagonally, and slotted openings shall not exceed 0.069 inches in width. Approach velocity shall not exceed 0.33 feet per second.	ITP Condition # 8.19	Entire Project	Permittee	
47	<u>Illumination Levels of Riverine Areas.</u> To minimize impacts to juvenile salmonid migration, bridge lighting, both temporary and permanent, shall be kept to the absolute minimum necessary to provide safe pedestrian and automobile access. Lighting should only be directed at areas intended for illumination. Light reaching the water surface of the Sacramento River immediately below and adjacent to the bridge alignment shall be kept as close to 1.0 lux as feasible. Within 45 days of completion of bridge construction, Permittee shall provide CDFW measurements of lighting intensities, at water level, immediately below, and at stations 50 feet, 100 feet, and 200 feet upstream and downstream the bridge. If 1.0 lux is substantially exceeded at any of these locations corrective actions shall be made to bridge lighting to achieve the desired illuminance.	ITP Condition # 8.20	Entire Project	Permittee	
48	<u>Stormwater Pollution Prevention Plan (SWPPP).</u> Permittee shall prepare and implement a SWPPP for the Project. A copy of the SWPPP shall be provided to CDFW prior to beginning project activities.	ITP Condition # 8.21	Entire Project	Permittee	
49	<u>No New Project Phase without Erosion Control.</u> No phase of the Project may be started if that phase and its associated erosion control measures cannot be completed prior to the onset of a storm event if that construction phase may cause the introduction of sediments into the stream. Permittee shall consult 72 hour weather forecasts from the National Weather Service prior to start up of any phase of the Project that may result in sediment runoff to the stream. Erosion control measures shall be inspected frequently, to minimize failure, conduct repairs	ITP Condition # 8.22	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
POST-CONSTRUCTION					
43	<u>Refuse Removal</u> . Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.	ITP Condition # 6.15	Post-construction	Permittee	
44	<u>Final Mitigation Report</u> . No later than 45 days after completion of all mitigation measures, Permittee shall provide CDFW with a Final Mitigation Report. The Designated Biologist shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports and all ASRs; (2) a copy of the table in this MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of the ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and (8) any other pertinent information.	ITP Condition # 7.7	Post-construction and after completion of mitigation	Permittee	
45	CDFW accepts the Final Mitigation Report as complete.	ITP Condition # 7.7	Post-construction	CDFW	

Attachment 2

Riparian Restoration Plan For Rancho Breisgau

Riparian Restoration Plan for Rancho Breisgau

Shasta County, California

February 23, 2015



Prepared for:

Bureau of Land Management



The Wildlife Conservation Board



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Acknowledgements

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EXECUTIVE SUMMARY

This plan describes River Partners' plant design for the restoration of riparian vegetation and enhancement activities on 306 acres of riverside floodplain that comprises the Rancho Breisgau Unit of the Sacramento River Bend in Shasta County, California. This restoration project is consistent with the goals and objectives of CALFED's Ecosystem Restoration Program Plan, Central Valley Project Improvement Act and the Central Valley Habitat and Riparian Habitat Joint Ventures.

River Partners evaluated soil properties such as texture, stratification and depth to water table, as well as past land-use and current site conditions. Based on the site assessment, six plant communities are proposed. Mixed Riparian Forest (123 acres), Valley Oak Riparian (54 acres), Sycamore Riparian Forest (32 acres), Mixed Riparian Scrub (16 acres), Great Valley Grassland (26 acres) and Upland Herbaceous (49 acres) communities will be planted across the site. Approximately 31,830 native trees and shrubs will be planted at a density of 113 plants per acre, and all woodland communities will be planted with an herbaceous understory. The planting design is focused on the habitat needs of target wildlife species which include California quail (*Callipepla californica*), Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*) and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

The project includes habitat enhancement on 6 acres of the Rancho Breisgau Unit, which is comprised of remnant riparian forest. The primary focus of enhancement activities will be non-native species control in the areas of established native vegetation. Target species include Himalayan blackberry (*Rubus armeniacus*) and plum trees (*Prunus spp.*)

This restoration project is designed to increase the quality and continuity of riparian habitat within the Battle Creek watershed.

Riparian Restoration Plan for the Rancho Breisgau Unit, Sacramento River Bend, Shasta County, California

I. INTRODUCTION

A. Project Overview

In 2013, River Partners entered into a grant agreement (WC -1239TR) with the State of California Wildlife Conservation Board (WCB) to plan and permit the restoration and enhancement of native riparian wildlife habitat on 306 acres of the Rancho Breisgau Unit of the Sacramento River Bend. The Unit is managed by the Bureau of Land Management (BLM) and located in Shasta County.

In 2000 BLM purchased a 714-acre riparian easement around the southern portion of the property. BLM purchased 426 acres in fee title in 2011, and this contains the project area.

The current condition of riparian habitat in the restoration area is poor. The area was formerly used for agriculture and is now in degraded orchards or is fallow. Natural regeneration of riparian habitat has been slow in most of the fallow area, with limited patches of valley oaks (*Quercus lobata*) and other native tree species. The fallow area is dominated by various non-native annual grasses as well as broadleaf species, including yellow star thistle (*Centaurea solstitialis*), and mustard (*Brassica* spp.).

Restoration on this site is important because it is a component of a larger block of contiguous habitat along the Sacramento River and Battle Creek, and restoring it will reduce habitat fragmentation. This restoration project is consistent with the goals and objectives of the CALFED's Ecosystem Restoration Program Plan, Central Valley Project Improvement Act and the Central Valley Habitat and Riparian Habitat Joint Ventures. It follows the suggestions of the Resource Management Plan (RMP) for the Bend ACEC (1993). The RMP process involved extensive public involvement, including meetings and a comment period. Loss of riparian habitat has been identified as a significant factor in decline of salmonid species in Battle Creek by the California Department of Fish and Game. This project would contribute significantly to recovering riparian habitat in an area critical for salmonid recovery.

B. Project Phases

Current funding is secured for the planning and permitting of the Rancho Breisgau project. Future funding will allow for the implementation of the plan.

C. Cooperative Relationships

The Bureau of Land Management (BLM) acquired the riparian conservation easements in partnership with the Trust for Public Land (TPL), California Department of Fish and Wildlife (DFW), Department of Water Resources (DWR), and The Nature Conservancy (TNC). Funding for the acquisition was provided by CALFED and Packard Foundation

grants. Funding for the Phase I pre-restoration plan was provided by the BLM and The Strong Foundation for Environmental Values. Funding for the Phase II hydraulic analysis was provided by the Bella Vista Foundation.

The proposed Rancho Breisgau habitat restoration is part of a much larger conservation and restoration effort currently underway in the Battle Creek watershed. Working with Federal and state agencies, Pacific Gas and Electric Company is modifying its power generation network on the two branches of Battle Creek. This primarily involves removal of small power generation dams that block the creek for fish migration and spawning. The Coleman Fish Hatchery (USFWS) is the largest salmon/Steelhead hatchery in the nation, producing 12 million fall Chinook salmon on the Sacramento River. The Hatchery recently upgraded ladders in order to integrate with BCSSRP efforts upstream. Upstream, much of the watershed has been purchased for conservation by The Nature Conservancy through its Lassen Foothills Project.

Lower Battle Creek and its floodplain, from its confluence with the Sacramento River upstream to just above the bridge on Jelly's Ferry Road, consists of two large properties on opposite sides of Battle Creek. On the right bank is Rancho Breisgau, and on the left bank is DFW's Tompkins Property Unit, part of the Battle Creek Wildlife Area. Restoration of 30 acres on the Tompkins Property was completed in 2012. Both properties had been in agriculture for a long time and channel management structures – earthen levees, rock banks, rock groins - have been installed along Battle Creek to prevent the channel from moving. The levee on the DFW's property prevents overbank flows and floodplain connection, and forces Battle Creek flows against the right bank on the Rancho Breisgau property.

The restoration of Battle Creek has been recognized as critical to the recovery of Chinook salmon and Steelhead by both state and federal agencies. The BLM, DFW and the USFWS have acquired conservation easements on private lands along Battle Creek with the goal of restoring habitat for Chinook salmon and Steelhead. In addition, Pacific Gas & Electric (PG&E) has agreed to remove five hydroelectric diversion dams and install fish screens and ladders on three other dams. The eventual restoration of Rancho Breisgau riparian habitat will contribute greatly to the restoration of anadromous fish habitat along Battle Creek because of its location on the most significant reach of Battle Creek, its confluence with the Sacramento River. This stretch of Battle Creek provides the floodplain habitat that is critical for salmonid juveniles as they migrate to the main stem of the Sacramento River and the Pacific Ocean.

D. Project Goals and Objectives

The primary goal of the project is to improve the quality of wildlife habitat on the Rancho Breisgau Unit by establishing self-sustaining native plant communities within a three-year period. This will benefit a broad range of sensitive animal and plant species and also reduce habitat fragmentation within the watershed. Table 1 describes the project goals, objectives and site-specific considerations.

Table 1. Summary of project goals, objectives and site-specific conditions of the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California

Project Goals
<ul style="list-style-type: none"> • Restore and enhance riparian habitat on 306 acres and increase connectivity of the project area to existing riparian habitat (decrease fragmentation) and current restoration efforts. • Provide habitat for federal and state-listed species including, but not limited to, Swainson's hawk, western yellow-billed cuckoo, valley elderberry longhorn beetle; as well as benefit other wildlife species, with particular emphasis on neo-tropical birds, waterfowl and upland game birds. • Maximize BLM return-on-investment by developing under-utilized habitat assets at the Rancho Breisgau Unit.
Project Objectives
<ul style="list-style-type: none"> • Establish self-sustaining native plant communities within a three-year period. • Plant approximately 43,276 native trees, shrubs and vines and 1,920 herbaceous plugs. • Reduce the extent of invasive weeds by planting a dense herbaceous understory. • Monitor the plants at the end of the growing season to assess survivorship and cover. • Evaluate the project using adaptive management. • Build partnerships with federal, state and local entities.
Site Specific Considerations
<ul style="list-style-type: none"> • Adhere to all conditions of NEPA and CEQA. • Coordinate restoration efforts with BLM management to maximize habitat benefit and cost savings. • Aggressively control existing populations of invasive species. • Use local seed sources.

II. SITE DESCRIPTION

A. Location

Rancho Breisgau is located on the border of Shasta and Tehama counties, approximately nine miles southeast of Anderson, California, at the confluence of Battle Creek and the Sacramento River (Figures 1 and 2). Battle Creek is the largest Sacramento River tributary north of the Feather River, with a watershed that covers approximately 360 square miles. Its headwaters are in Lassen Volcanic National Park, after which it flows through private property to the Sacramento River. Rancho Breisgau lies adjacent to the Battle Creek Salmon and Steelhead Restoration Project (BCSSRP), the Bureau of Land Management's (BLM) 18,500 acre Sacramento River Bend Area of Critical Environmental Concern, which is currently under consideration for designation by Congress as a National Recreation Area. In addition, Rancho Breisgau is adjacent to the Battle Creek Wildlife Area (BCWA) and near other public properties owned by the California Department of Fish and Wildlife (DFW). Approximately three miles upstream of Rancho Breisgau is the Coleman National Fish Hatchery, the largest anadromous fish hatchery in the contiguous 48 states, which releases Chinook salmon and Steelhead into Battle Creek to mitigate the loss of spawning habitat due to Shasta and Keswick Dams.

Figure 1. Location map, Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

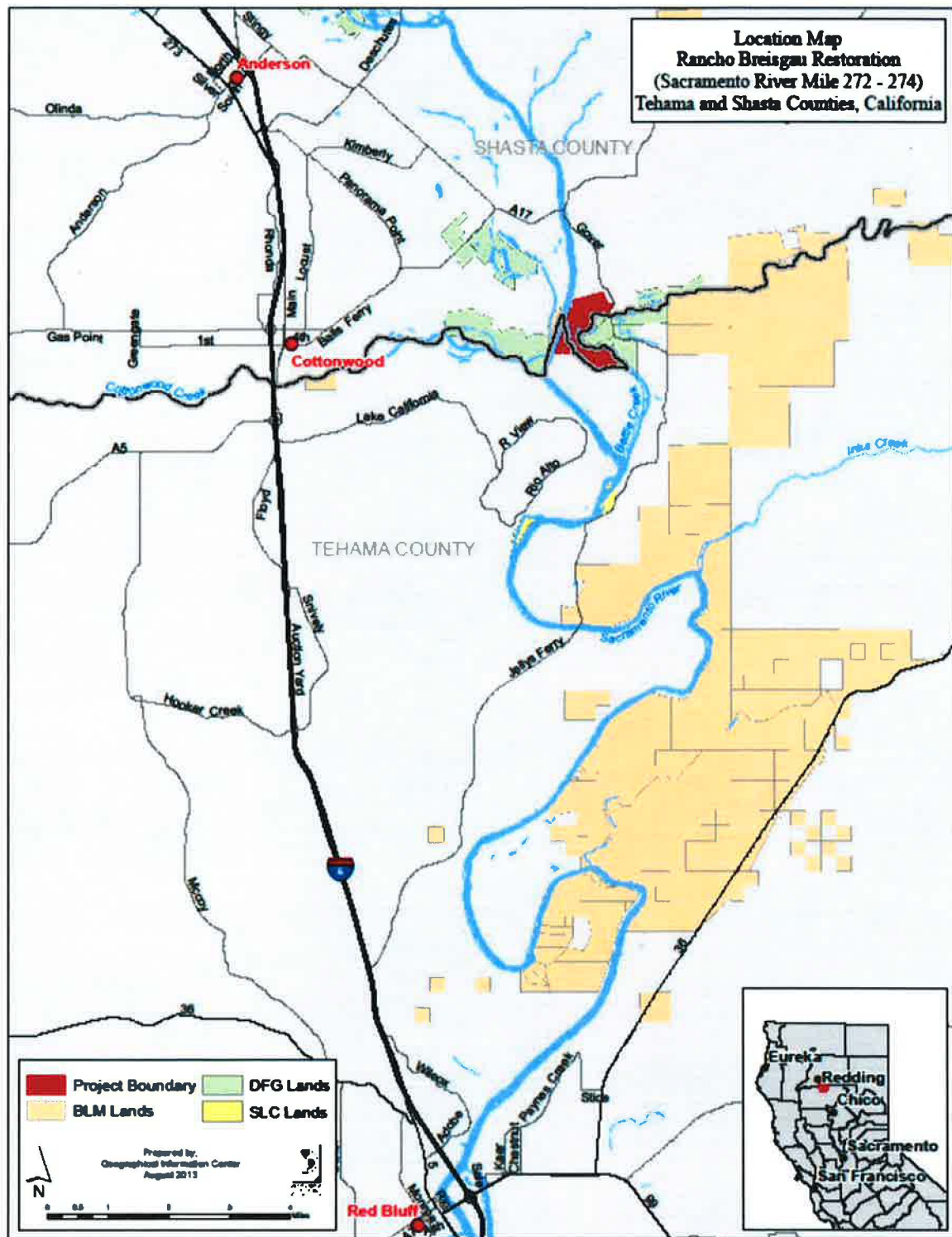
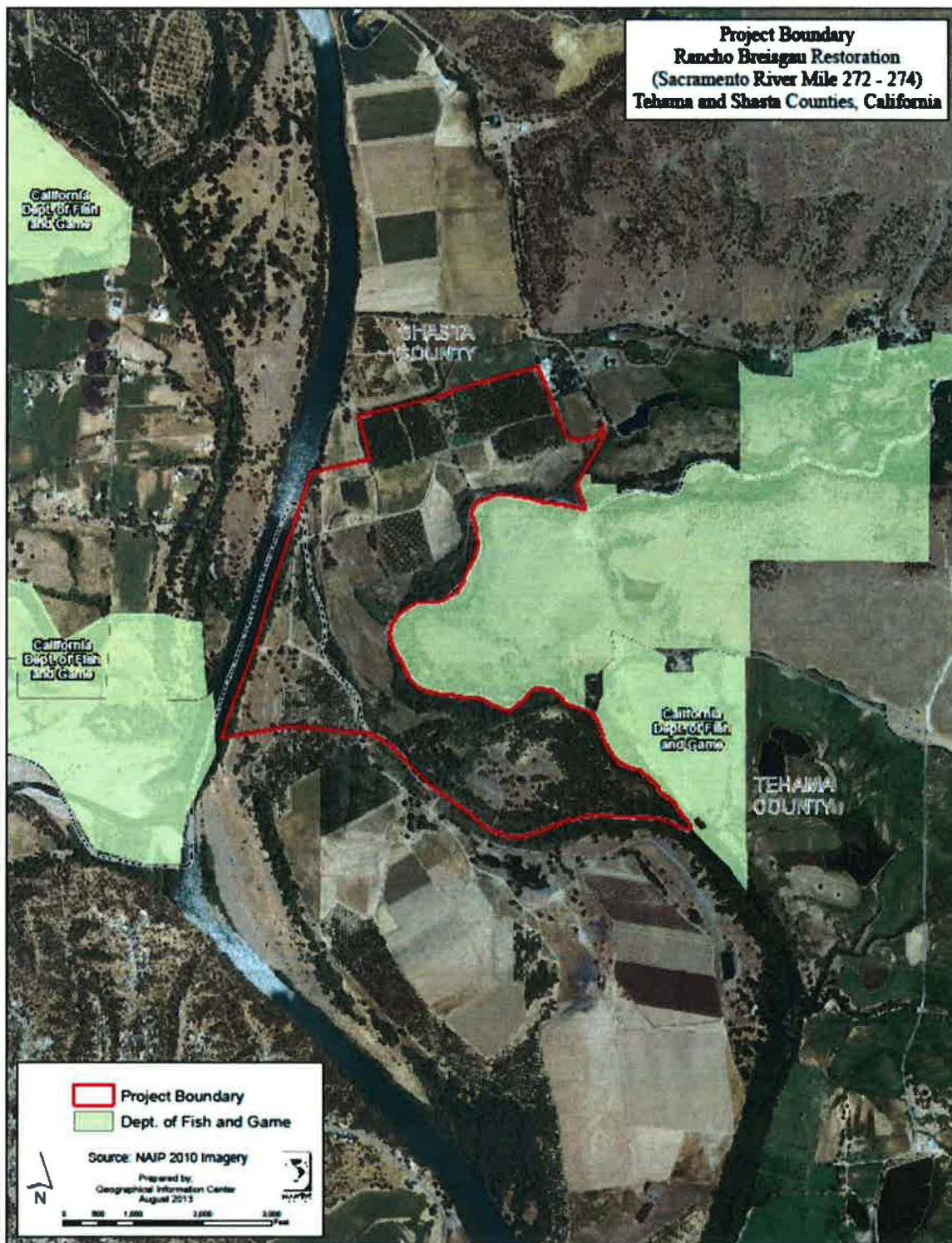


Figure 2. Project boundary, Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.



B. Land-use History

Prehistory of the upper Sacramento Valley dates back an estimated 4,000 years (U.S. Department of Interior et al. 2003). At the time of European-American contact this region was utilized by the Yana and Wintu tribal groups. Bloody Island or Isla de Sangre (as it was originally called), which constitutes the majority of the Rancho Breisgau property, was named for the battle that occurred in 1846 between local Yana and European-American settlers (Kraft & Woodrum 2005).

In 1844, the Mexican governor granted William Bonita the Rancho Breisgau land grant, which included Isla de Sangre (Kraft & Woodrum 2005). Benitz did not live on the property, but stocked it with horses and cattle to establish ownership, and placed a caretaker on the settlement who cultivated row crops until he was reportedly killed a short time later by local Native Americans (Kraft & Woodrum 2005). In 1846, Captain John Fremont and his troops attacked a gathering of Yana on Bloody Island who had reportedly been in conflict with Captain John Sutter and S.J. Hensley, and the island was given its name. In 1850, Benitz traded an undivided half-share in Rancho Breisgau to Ernest Rufus, in exchange for Rufus occupying the premises (Kraft & Woodrum 2005). Following the U.S.-Mexican war, the Board of Land Commissioners ruled that Benitz had insufficient proof of title and he sold the land to pay his legal expenses before his appeal was eventually granted (Kraft & Woodrum 2005). In 1853, homestead claims were filed on Bloody Island by Edward Best (Parcel 15), William G. Hall (Parcels 16 & 22), Tim D. Goodman (Parcel 17), and Richard W. Morgan (Parcel 23) (Kraft & Woodrum 2005). Richard W. Morgan bought his claim and an adjoining claim for his share of Bloody Island in the 1870's and farmed grain and raised livestock. William G. Hall bought Morgan's land, which included most of the agricultural land on the island. Herbert Kraft bought one of Hall's parcel in 1903, phased out grain and livestock production and began growing peaches. The parcel was sold to Edgar Stopher in 1905, who later sold it to Daniel L. Gover in 1943.

William S. Wilcox bought Hall's other parcels on Bloody Island in the late 1860's. In 1891, Daniel L. Gover married Margaret E. Wilcox, and both men managed the farm until Wilcox died in 1892. Gover took over management of the farm and started grazing livestock in addition to farming. Gover expanded his enterprise by buying adjoining parcels and by the time of his death his holdings included all of Bloody Island, as well as land north of the island (Kraft & Woodrum 2005). Six generations of Govers have resided and farmed on the ranch since that time. The Govers began to grow English walnuts (*Juglans regia*) commercially in 1929, and they have had up to 800 acres in cultivation. All of their orchard rootstock was propagated on site with Eastern black walnuts (*Juglans nigra*) collected from trees naturalized along Battle Creek. Walnuts continue to be their largest agricultural enterprise.

In 2000 BLM purchased a 714-acre riparian easement around the southern portion of the property. BLM purchased 426 acres of the ranch in 2011.

C. Soils

1. General Soil Series Information

Rancho Breisgau lies at the southwest edge of the Cascade Range Province where alluvial sedimentation involving volcanic debris is the dominant geologic process (Bailey 1966). The soils within the project area (Table 2, Figure 3) are mostly alluvial: terraces, bottomlands, and river washes (Gowans 1967; Klaseen & Ellison 1974). The Reiff series are terrace soils which are nearly level to gently sloping and well-drained (Klaseen & Ellison 1974).

The bottomland soils include the Columbia, Molinos, and Vina series. These bottomland soils are level to gently sloping, and moderately to excessively-drained. The remainder of the soils (Cobbly, Reiff, Riverwash, and Tujunga series) range from loamy sands to cobbles along the river washes.

The bottomland soils (Columbia, Molinos, Vina) are located along the portion of the property that borders Battle Creek. The bottomland soils have been used for walnut orchards on the site during the last 80 years. The Riverwash and Cobbly Alluvial soils dominate along the Sacramento River and along portions of Battle Creek.

In addition to the information provided by the Shasta and Tehama County Soil Surveys, we further assessed soil conditions at the site by conducting a series of nine backhoe pit excavations on June 28, 2005. These excavations provide a more detailed description of soil types at key points across the site including:

- Soil texture and structure,
- Stratification of textural classes,
- Depth to water table, and
- Rooting depth of existing vegetation.

2. Soil Pit Results

On June 28, 2005, River Partners used a backhoe to excavate nine soil pits (seven in the current project area) to depths of 5 to 10 feet to gain a more refined understanding of field conditions. All the pits were located in areas that presently are, or previously had been, planted with walnut orchards. We did not dig any soil pits within areas demarcated by the soil survey as "River Wash," as these soils are too gravelly to support woody vegetation.

For a complete discussion of soil pit results, see the *Pre-Restoration Plan for Gover Ranch Riparian Conservation Easement* (River Partners 2006).

Table 2. Summary of typical soil conditions from the Soil Survey of Shasta and Tehama County on soils found on the restoration area of the Rancho Breisgau Unit of the Sacramento River Bend.

Soil Property	Cobbly alluvial land	Columbia complex	Molinos fine sandy loam	Reiff fine sandy loam	Reiff sandy loam	Reiff loam	Riverwash	Tujunga loamy	Vina loam
Mapping unit	Ch, Ck	Cu	Mo	RgA, RgB	RfB	RIA	Rr, Rw	TfB	VeA
Percent slope	0-5%	0-5%	0-3%	0-3%	0-8%	0-3%	0-5%	3-8%	0-3%
Texture	Very cobbly sand	Fine sandy loam	Fine sandy loam	Fine sandy loam	Sandy loam	Loam	Very gravelly sand	Loamy sand	Fine textured silt loam
Drainage	Excessively drained	Well drained	Moderately well drained	Well drained	Well drained	Well drained	Excessively drained	Somewhat excessively drained	Well drained
Permeability	Very rapid	Moderate	Moderately rapid	Moderately rapid	Moderately rapid	Moderate	Very rapid	Rapid	Moderate
Available water holding capacity	Very low	Moderate	Moderate	Moderate	Moderate	Moderate	Very low	Low	High
Plant growth limitations	Very restricted	Requires more frequent irrigation					Very restricted	Sub-soils restrict movement of roots	

Soils
Rancho Breisgau Restoration
(Sacramento River Mile 272 - 274)
Tehama and Shasta Counties, California

TEHAMA COUNTY

SHASTA COUNTY

Soil codes: RgA, MzA, VnA, RgB, MzB, VnB, RgC, MzC, VnC, RgD, MzD, VnD, RgE, MzE, VnE, RgF, MzF, VnF, RgG, MzG, VnG, RgH, MzH, VnH, RgI, MzI, VnI, RgJ, MzJ, VnJ, RgK, MzK, VnK, RgL, MzL, VnL, RgM, MzM, VnM, RgN, MzN, VnN, RgO, MzO, VnO, RgP, MzP, VnP, RgQ, MzQ, VnQ, RgR, MzR, VnR, RgS, MzS, VnS, RgT, MzT, VnT, RgU, MzU, VnU, RgV, MzV, VnV, RgW, MzW, VnW, RgX, MzX, VnX, RgY, MzY, VnY, RgZ, MzZ, VnZ.

Legend:
 [Red Outline] Project Boundary
 [Black Outline] Soils

Source: NAIP 2010 Imagery
 Prepared by:
 Geographic Information Center
 September 2013

Scale: 0 500 1,000 2,000 Feet

D. Topography

The natural topography of Rancho Breisgau remains relatively intact, as the land was not leveled for agriculture (Figure 4). Historically, Rancho Breisgau was part of an active, dynamic floodplain. Channel movement and flood flows have shaped site topography and even with a human-managed flood regime, topography on the site will continue to evolve. Surface elevations range between 335 and 380 feet above sea level. The highest is 380 feet and is located on the terrace soils on the north side of Battle Creek. The Old Sacramento River Channel (now the county line on the west side of the property) that intersects Battle Creek has a low elevation of 350 feet. During flood events, these low elevation areas along the current or historic river channels are the first to inundate.

E. Hydrology

The project area is located near the confluence of two large tributaries, Cottonwood Creek and Battle Creek, with the Sacramento River. The Sacramento River channel has meandered on both the east and west sides of Bloody Island and at times flowed on both sides of the river (Department of Water Resources 2004). The path of the river channel that would create Bloody Island during high flows can be seen in the 1938 photo (Figure 5), but since the building of Shasta Dam and the levees along the Sacramento River it no longer joins the Sacramento River. The entire project area is within the Federal Emergency Management Agency (FEMA) 100-year flood zone.

The most recent large flood event occurred in January 1997 when flood waters came within 100 yards of the homes on the ranch. Peak flows for this flood event were 121,000 cfs on the Sacramento River, 40,600 cfs on Cottonwood Creek, and 13,000 cfs on Battle Creek. The highest flows on record for Battle Creek are from 1937, with 35,000 cfs in Battle Creek and 262,000 cfs in the Sacramento River at Bend. Cottonwood Creek was not recorded, but flows may have reached 100,000 cfs (Department of Water Resources 2004).

During flood events, high flows from the Sacramento River and Cottonwood and Battle Creeks cause floodwaters to back up at the south end of the island, creating reverse flows on the southern part of Bloody Island and inundating the southern end of the property (Rich Gover, personal communication). This results in sand deposition throughout much of the project area, evidence of which can be seen in the 1938 photograph. Gravel deposits occur in areas of higher velocity.

A hydraulic evaluation of lower Battle Creek was completed by McBain and Trush in 2007. The hydraulic evaluation identified actions that could be taken on both the DFW property and the BLM-owned and managed lands – removal of groins and rock, creating holes through existing levees at strategically determined points, creation of flood channels at certain locations - that will result in Battle Creek once again flowing over its floodplain in high water events. This work will be further evaluated in future efforts.

Figure 4. Topography map, Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.



Figure 5. 1938 Aerial Photograph of Rancho Breisgau, Shasta and Tehama Counties, California



F. Vegetation

1. Pre-Development Conditions

The 1938 aerial photo shows some cultivated fields in the north half of Rancho Breisgau and riparian forest on natural levees and along flood channels (Figure 5). While we found no records of pre-development vegetation, these forests were probably similar to the Great Valley Valley Oak Riparian vegetation of the relict forests (Holland 1986). The 1938 photo also shows that much of the island was unvegetated, which indicates that much of the island was covered with unconsolidated sand and river wash soils indicative of a floodplain. Remnant Great Valley Mixed Riparian forest forms a riparian corridor along Battle Creek on the eastern border which persists to this day (Holland 1986). Great Valley Mixed Riparian forest also existed historically along the eastern edge but was cleared for agriculture, and probably covered the interior and southern end of Bloody Island prior to the establishment of agriculture.

2. Current Conditions

Aside from a thin band along Battle Creek and the Sacramento River, the project area contains very little remnant riparian vegetation.

The remnant vegetation is dominated by Valley Oak and Mixed Riparian Forest. There are areas of Valley oak with a near continuous understory of Santa Barbara sedge (*Carex barbarae*). The canopy has an abundance of lianas composed of mixtures of Dutchman's pipevine (*Aristolochia californica*), California greenbrier (*Smilax californica*), poison oak (*Toxicodendron diversilobum*), and California wild grape (*Vitis californica*).

The southwestern border of the project area contains a thin but dense forest of Western sycamore (*Platanus racemosa*), Oregon ash (*Fraxinus latifolia*), Fremont cottonwood (*Populus fremontii*); black (*Salix goodingii*), red (*S. laevigata*), arroyo (*S. lasiolepis*), and sandbar (*S. exigua*) willows; with scattered valley oaks, golden currant (*Ribes aureum*) and elderberry (*Sambucus mexicana*) along the upper portions.

Scattered throughout the project area are large fields of cobbles and/or course soils. These areas support annual and perennial native wildflower species such as naked buckwheat (*Eriogonum nudum*), tarweed (*Hemizonia spp.*), Fitch's spikeweed (*Centromadia fitchii*), and vinegar weed (*Trichostema lanceolatum*).

The remaining areas are walnut orchards and grain fields.

G. Wildlife

The Jelly's Ferry Unit is a part of the nearly 18,000 acre Sacramento River Bend area which attracts a diverse assortment of riparian-dependent species. No former wildlife surveys have been completed, but the area supports a wide array of riparian and upland wildlife, including mountain lion, mule deer, river otters, and many migratory and resident bird species.

Table 3. Federal and state-listed endangered, threatened, and candidate species occurring or potentially occurring in the Sacramento River Bend, Shasta and Tehama County, California.

Name	Scientific Name	Status
Chinook salmon, Sacramento River winter-run ESU	<i>Oncorhynchus tshawytscha</i>	FE, CE
Chinook salmon, Central Valley spring-run ESU	<i>Oncorhynchus tshawytscha</i>	FT, CT
Chinook salmon, Central Valley Fall-run and late fall-run ESU	<i>Oncorhynchus tshawytscha</i>	FC, CSC
Steelhead, Central Valley ESU	<i>Oncorhynchus mykiss</i>	FT
Green sturgeon SDP	<i>Acipenser medirostris</i>	FT, CSC
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT
Least Bell's vireo (extirpated)	<i>Vireo bellii pusillus</i>	FE, CE
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FC, CE
Bald eagle	<i>Haliaeetus leucocephalus</i>	CE
Peregrine falcon	<i>Falco peregrinus anatum</i>	FSC, CE
Willow flycatcher	<i>Empidonax traillii</i>	FSC, CE
Bank swallow	<i>Riparia riparia</i>	FSC, CT
Swainson's hawk	<i>Buteo swainsoni</i>	FSC, CT
Western red bat	<i>Lasiurus blossevillii</i>	CSC

ESU – Evolutionary Significant Unit
 FE – Federal-listed Endangered Species
 FT – Federal-listed Threatened Species
 FC – Federal Candidate Species
 FSC – Federal Species of Concern
 CE – California State-listed Endangered Species
 CT – California State-listed Threatened Species
 CSC – California Species of Concern

III. CONCEPTUAL SITE MODEL

This conceptual site model:

- Presents our understanding of the physical and biological factors that influence site ecology,
- Outlines our restoration strategy,
- Provides an overview of the plant design, and
- Identifies ecological benefits and targeted wildlife species.

The principles described in this section will guide the implementation of the project.

A. Past Environmental Conditions

Historic and anecdotal information on past environmental conditions is limited. The mouth of Cottonwood Creek lies due west of the mouth of Battle Creek with Rancho Breisgau in between. Prior to the building of Shasta Dam to the north and the downstream levee system, the site was hydraulically active with a complex of braided river channels evident in both historical and current aerial photos. During large rain events, Bloody Island received large flows from both creeks and the Sacramento River that shaped the island over time. The compositions of the soils on the island reflect some very dramatic sediment-deposition events. Other portion of the island also support historical gravel mines. The site flooded frequently enough for the term "island" to be included as part of the place name.

B. Likely Successional Patterns without Restoration

Without restoration, the site will provide unsuitable conditions and poor habitat for riparian species, including the species being targeted by this project. In the absence of restoration and farming, succession is likely to follow the pattern observed on abandoned flood-prone agricultural lands on many Central Valley rivers. Aggressive non-native weeds, such as Johnson grass (*Sorghum halepense*), yellow starthistle, and annual European grasses will flourish on the rich soils and ample soil moisture found within the project area. Over time, invasive woody species such as tree of heaven (*Ailanthus altissima*), eastern black walnut (*Juglans nigra*), and Himalayan blackberry (*Rubus discolor*) will dominate. These invasive species compete for sunlight and moisture and typically shade-out seedlings of native plants. In addition, these invasive species provide ideal habitat for rodents, which in turn can girdle young trees and consume seeds and acorns. With these pressures, native plant recruitment is slow, and abandoned sites are likely to be dominated by non-native plants for decades.

C. Comparison to Nearby Vegetation (Reference sites)

South of the project area, but still on Rancho Breisgau, is a 52 acre remnant Valley Oak Riparian forest. This is a classic river bottom forest with a canopy of valley oak and sycamore. The Oregon ash are much larger than is typical of remnant forests along the Sacramento River. Dutchman's pipevine and wild grape lianas intertwine in the canopy and understory. Santa Barbara sedge is the dominant understory species, reflecting frequent flooding and the lack of disturbance. Along Battle Creek, a dense Great Valley Mixed Riparian forest occupies the low portions of the floodplain, while at the top of the creek's banks a few large valley oaks and elderberry shrubs remain.

D. Restoration Strategies for the Rancho Breisgau Unit

We recommend the following strategies for the Rancho Breisgau Riparian Restoration Project:

- **Employ active restoration techniques to establish riparian vegetation.** Active restoration employs modern farming techniques to efficiently and rapidly establish riparian vegetation. Tasks include site preparation, native plant species propagation and planting, weed control and supplemental irrigation.
- **Develop a plant design based on current site conditions, flood management, and management objectives to address wildlife habitat.** River Partners will develop a plant design to address wildlife needs, hydraulic considerations, neighbor requirements and other factors. The plant design is not based strictly on a 'climax' vegetation target, but is intended to provide high quality early succession-stage habitat for targeted wildlife.
- **Use an adaptive management approach to the project.** River Partners uses an adaptive management approach (River Partners 2005) to provide a framework to evaluate project progress and respond to new information. These practices have resulted in high plant survival rate, accelerated natural recruitment of native species (through changes in microclimate and presence of seed sources), and documented wildlife benefits in short periods of time (three years).

E. Identification of Ecological Benefits and Targeted Wildlife species

Riparian ecosystems harbor the most diverse bird communities in the arid and semi-arid portions of the western United States (Knopf et al. 1988, Dobkin 1994, Saab et al. 1995), and may also provide the most important avian habitat in California (Manley and Davidson 1993). Therefore, a restored site will provide vital habitat and conditions for neo-tropical migratory birds and other riparian dependent avian species (Figure 6).

The Riparian Habitat Joint Venture (RHJV) has identified several species of birds as indicators of ecologically healthy riparian systems (RHJV 2004). These species are termed riparian focal species and collectively their habitat requirements serve as an umbrella for all riparian bird habitat needs. Table 4 describes some of the habitat requirements for each of these species. There is a wide range of spatial and structural habitat requirement among this diverse assemblage of riparian bird species.

Figure 6. Habitat value of native riparian plants (RHJV 2000).

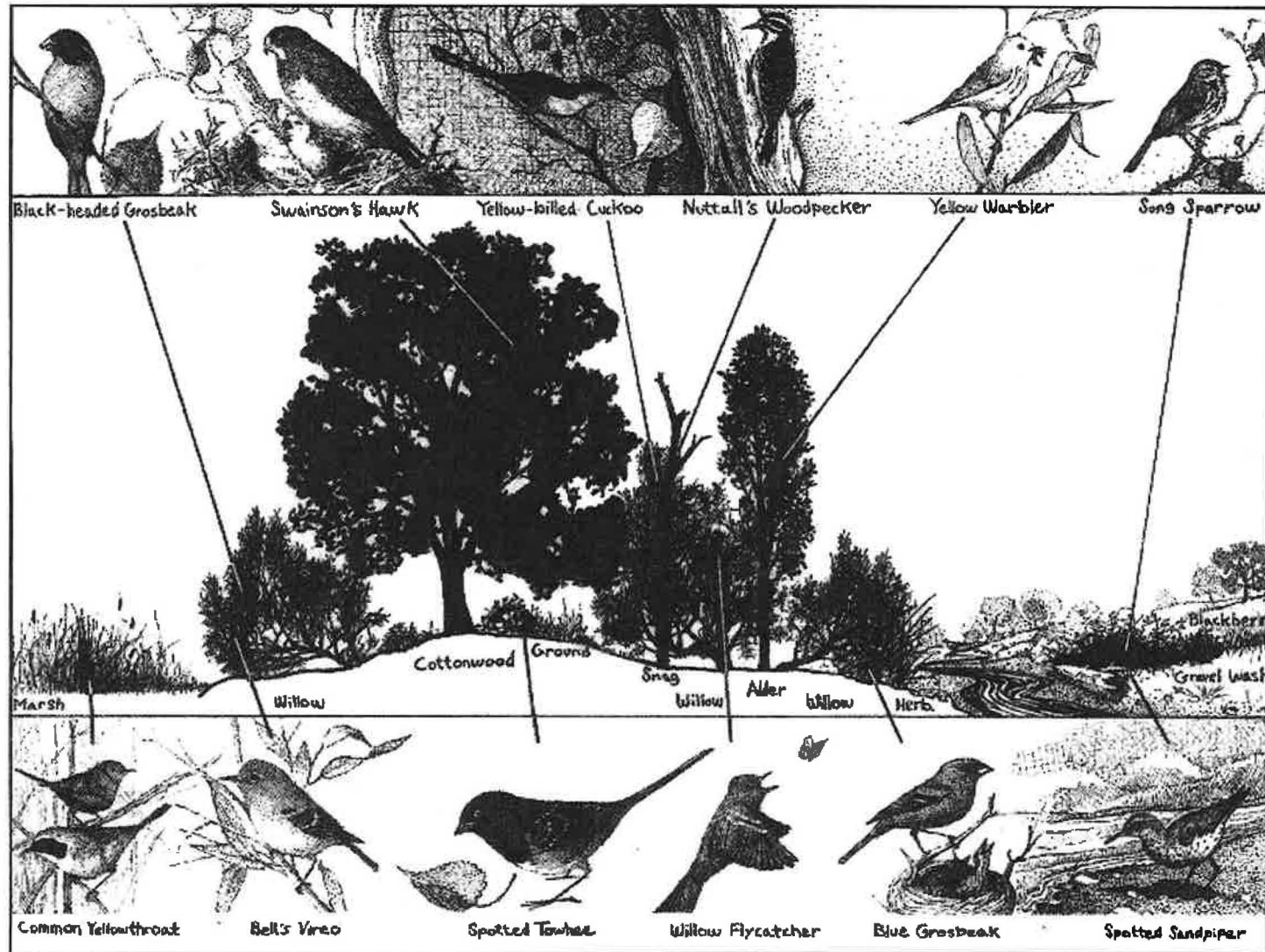


Table 4. Summary of neotropical migrant bird habitat requirements (RHJV 2004).

Bird Species	Territory/Patch Size	Proximity to Water	Vegetation Structure	Nesting
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	0.8-1.2 ha (2-3ac); >250m wide patch	Within 300m	Dense willow shrubs 3-5m tall; mugwort understory	Nest low, within 1m of ground
Black-headed grosbeak (<i>Pheucticus melanocephalus</i>)	200m x 50m	50-300m	Vertical complex - Cottonwood, willows, wild grape	Nest height 3-4m
Blue grosbeak (<i>Guiraca caerulea</i>)	----	In riparian zone	Low herbaceous, upright stems, open canopy	Nest height 0.6-3m
Common yellow-throat (<i>Geothlypis trichas</i>)	0.4-2 ha (1-5 ac)	In riparian zone	Tall emergent wetland edges	Nest height 0-0.6m
Song sparrow (<i>Melospiza melodia</i>)	Variable	Near, within 50m	Open canopy; dense herbaceous layer; gumplant, evening primrose	Low to ground; <1m
Swainson's hawk (<i>Buteo swainsoni</i>)	Variable, depending on proximity to foraging habitat	Not riparian obligate	Tall trees in riparian zone near open foraging areas	Nest in tall trees
Willow flycatcher (<i>Empidonax traillii</i>)	<1.0 ha (<2.5 ac)	Nests near water	Dense willows; 0-3m height of dense cover, low tree cover	Nests near water; height 0.6-3m
Yellow-breasted chat (<i>Icteria virens</i>)	<5 ha (<12 ac)	Prefers near wetlands	Dense thickets of willows and blackberries	Nests in vines and shrubs
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	8-40 ha (19.8-98.8 ac)	Nests near or over water	Willow-cottonwood thickets	Nest 1.3-13m high
Yellow warbler (<i>Dendroica petechia</i>)	0.06-0.75 ha	Wet areas	Willows, cottonwoods, early Successional	----

IV. PLANTING DESIGN

River Partners has developed a site-specific planting design that represents a synthesis of the available information on site conditions, using the principles of landscape ecology (Silveira *et al.* 2003, USFWS 2005), project objectives and PRBO Conservation Science (PRBO) recommendations (Geupel *et al.* 1997).

Plant communities are based on the terrestrial natural community descriptions of the California Natural Diversity Database (CNDDDB)/Holland classification system (Holland 1986). The CNDDDB/Holland classification system includes descriptions of site factors and distribution that allows us to fit the appropriate vegetation with site specific characteristics. The community concept provides a useful descriptive label but does not specify arrangement, density, or other quantifiable factors that must be addressed to translate the conceptual design to field implementation. Plant communities of the same name will differ in species composition (especially plant species frequency) and density due physical factors and management considerations. The following sections will layout those factors for this project.

A. Design Considerations

River Partners considered the physical factors (soils, topography and hydrology) and historical vegetation of the site to determine what vegetation would potentially grow. The design also incorporates essential habitat elements to conserve, restore and enhance riparian habitat for threatened and endangered species, songbirds, waterfowl, other migratory birds, anadromous fish, and resident native wildlife and plants, which is consistent with the mission of BLM. Additionally, recommendations from PRBO (Geupel *et al.* 1997) are integrated into the design in order to provide quality habitat for focal bird species. Table 5 lists key considerations of the plant design of the Rancho Breisgau Restoration Project.

B. Rationale for Plant Communities

Using knowledge of the site factors and design considerations, River Partners developed five different plant communities. The physical layout or pattern of individual plants will follow the recommendations from PRBO. Studies by PRBO suggest that shrub cover is the most important variable influencing nest site and there is a positive relationship between tree and shrub richness and bird diversity (Small *et al.* 2000, Geupel *et al.* 1997).

River Partners expects at least 70% survival of its restoration plantings at the end of the three year maintenance period. Over the years after maintenance, we expect some mortality based on differences of soil textures and water table depths. Plant mortality creates areas of open canopy, patchiness, and snags, all of which create structure and habitat for birds and other wildlife.

C. Composition and Location of Plant Communities

Five different plant communities are proposed for the site based on the varying hydrological and biological conditions of the site: valley oak woodland, mixed riparian

forest, sycamore riparian forest, mixed riparian scrub, and upland herbaceous. (Figure 7, Table 6). River Partners utilizes a tile design that develops different plant communities by arranging plants with varying plant densities and species composition (Tables 7-10). The plant community tiles are replicated across the landscape to create a range of vegetative and structural diversity. An integral component of the design is a native understory (Table 11) which will be included in all communities.

Table 5. Key plant design considerations of the Rancho Breisgau Restoration Project, Shasta and Tehama County, California.

Objective/Factor	Example of Project Design Considerations
Provide immediate (< 3 years) habitat benefits and high probability of long-term survivorship	In the short term, relatively transient species (cottonwood and willows) will provide several generations of targeted bird species with nesting and foraging habitat. Planting a mixed riparian forest, maximizes quality habitat as the slow growing, but shade tolerant oaks mature.
Minimize sources of weeds, provide habitat along project edges	Use native plants to displace weeds in areas outside the main plantable area. Spreading plants (e.g., native blackberry) and native understory species will be used to outcompete perennial pepperweed and other invasive species that currently occur on site.
Maintain high plant species and vegetative structural diversity	PRBO data suggest that bird diversity is highest in areas with 5-7 shrub species over a 50-m ² area. Design considerations include varying densities across the site to allow light gaps and create structural differences (grouping trees together will create pockets of shade and light gaps), creating vegetation patches (grouping small shrubs together will mimic larger plants and may attract desirable wildlife species faster than if they were grown apart), and considering herbaceous plantings between plant rows. Also included are open areas of herbaceous species such as grasslands and broadleaf meadow species, which will attract native pollinators.
Provide foraging and nesting sites for Swainson's hawks and other birds of prey	Tall riparian trees will provide nesting and perching areas. Perennial grassland (RHJV 2000) provides consistent access and good availability of prey.
Provide valley elderberry longhorn beetle (VELB) habitat while minimizing potential impacts to neighbors	Plant elderberry shrubs across the site, except in areas which will require future maintenance (ie, near roads and other infrastructure).
Minimize disturbance to wildlife	Use vegetation as a screen and plant in curved rows.
Minimize future impacts to maintenance areas.	No elderberry will be planted within 20 feet of any levee, road, or other infrastructure.

Figure 7. Planting communities on the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

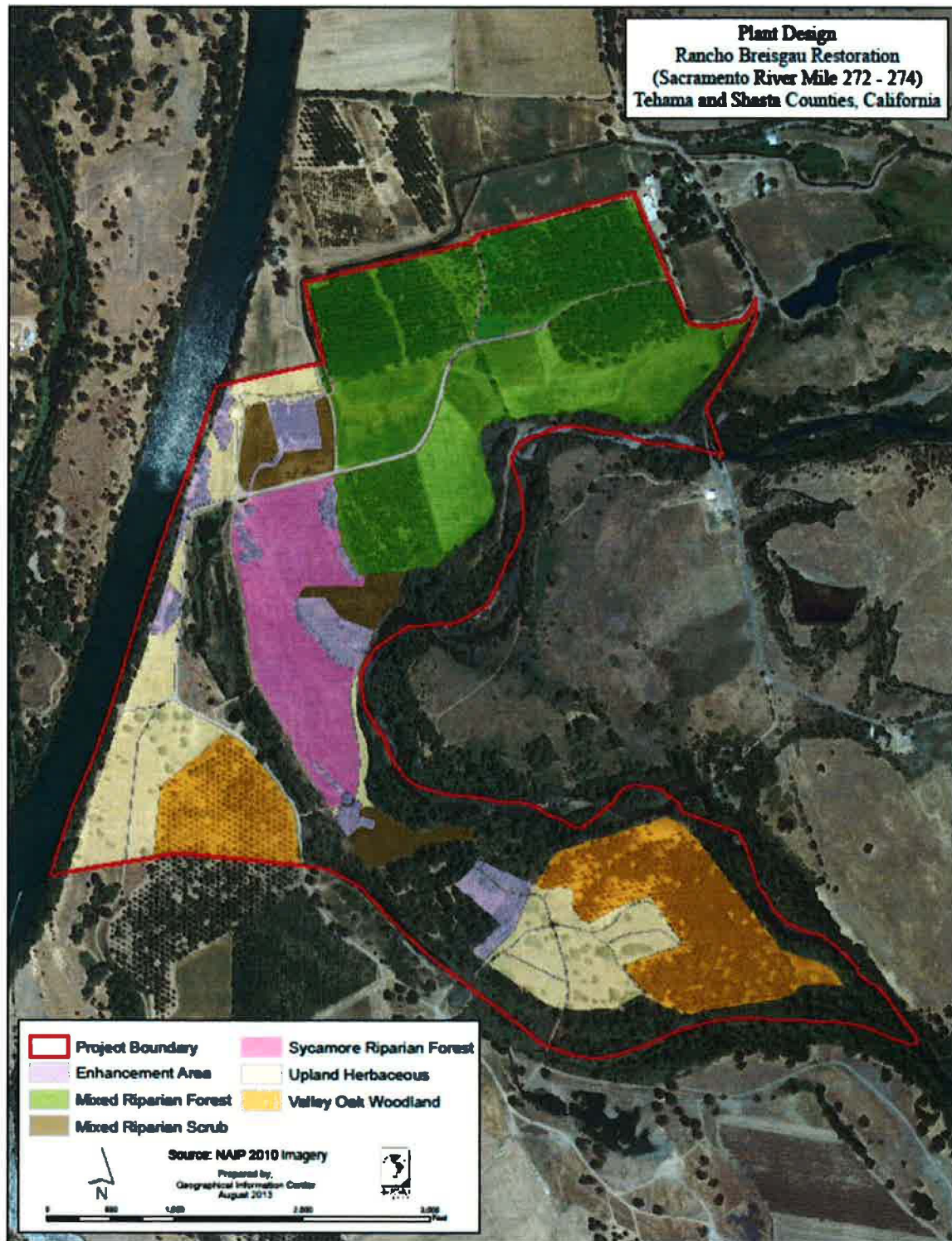


Figure 8. Field layout for the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

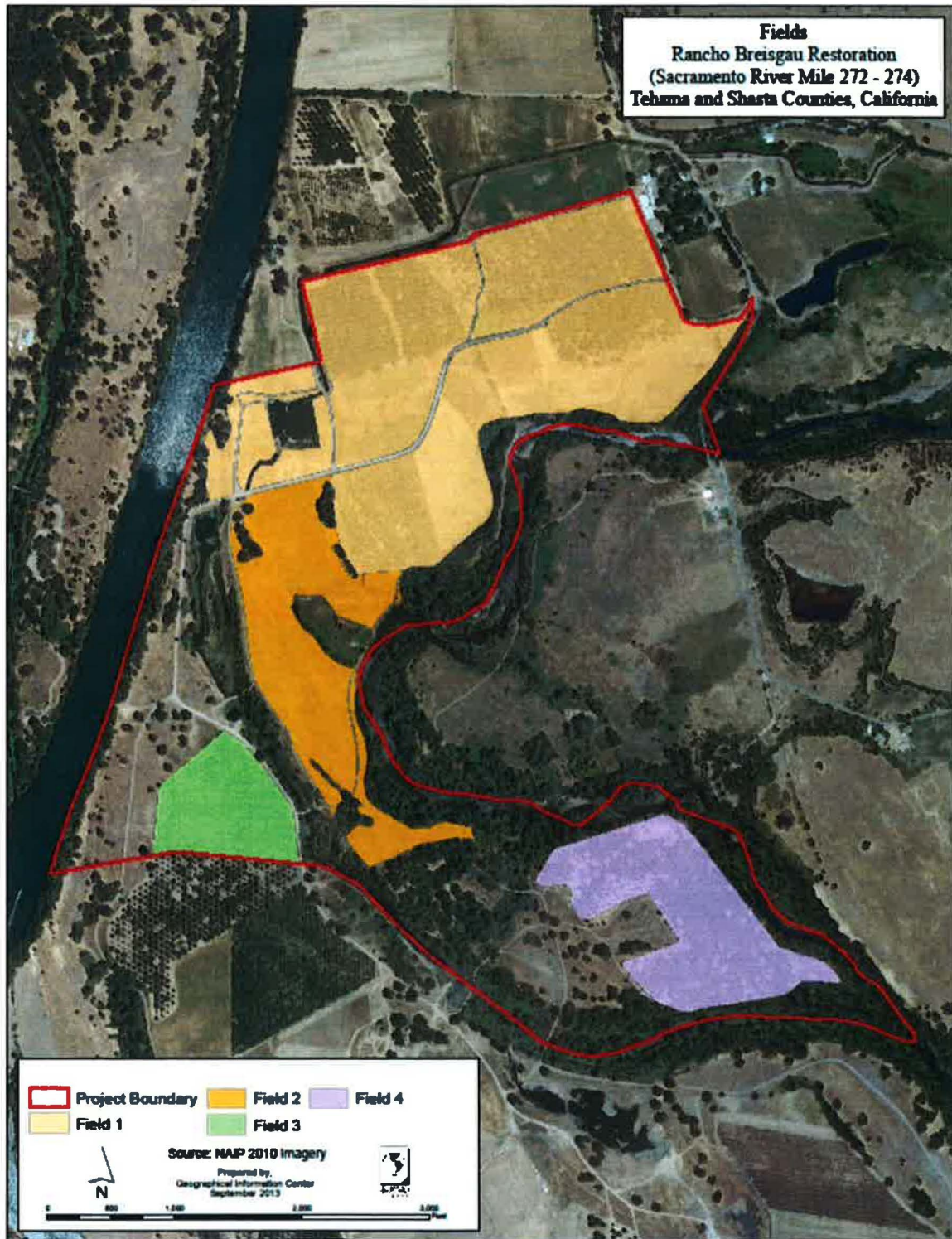


Table 6. Summary of overall proposed plant species at the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

Common Name	Scientific Name	Species Composition (%)	Density (plants/acre)	Total Number
Tree Species				
Box elder	<i>Acer negundo</i>	3	1.0	1,314
Fremont cottonwood	<i>Populus fremontii</i>	4	1.2	1,586
Goodding's black willow	<i>Salix gooddingii</i>	4	1.2	1,584
Interior live oak	<i>Quercus wislizeni</i>	0.5	0.2	216
Oregon ash	<i>Fraxinus latifolia</i>	4	1.2	1586
Red willow	<i>Salix laevigata</i>	2	0.9	1,098
Valley oak	<i>Quercus lobata</i>	6	2.0	2,520
Western sycamore	<i>Platanus racemosa</i>	3	1.2	1,546
Total Trees		25	8.9	11,450
Shrub Species				
Arroyo willow	<i>Salix lasiolepis</i>	4	6	1,728
Buttonbush	<i>Cephalanthus occidentalis</i>	6	10	2,776
California blackberry	<i>Rubus ursinus</i>	14	22	6,190
California greenbriar	<i>Smilax californica</i>	2	4	1,098
California rose	<i>Rosa californica</i>	13	21	5,944
Clematis	<i>Clematis ligusticifolia</i>	1	2	486
Coffeeberry	<i>Rhamnus californica</i>	0	1	192
Coyote brush	<i>Baccharis pilularis</i>	6	9	2,536
Dutchman's pipevine	<i>Aristolochia californica</i>	3	4	1,242
Elderberry	<i>Sambucus mexicana</i>	8	13	3,760
Mule fat	<i>Baccharis salicifolia</i>	11	17	4,824
Sandbar willow	<i>Salix exigua</i>	2	4	1,054
Western Redbud	<i>Cercis occidentalis</i>	0	1	192
Total Shrubs		71	113	31,830
Herbaceous Species				
Deergrass	<i>Muhlenbergia rigens</i>	0.6	12	288
Gumplant	<i>Grindelia camporum</i>	0.6	12	288
Mugwort	<i>Artemisia douglasiana</i>	0.9	12	384
Stinging nettle	<i>Urtica dioica</i>	0.9	12	384
Western goldenrod	<i>Euthamia occidentalis</i>	0.9	12	384
Total Herbaceous		4	60	1,728
TOTAL PLANTS		100	182	45,008

1. Valley Oak Woodland

The Valley Oak Woodland association is appropriate for areas which are currently in walnut production, but do not flood as frequently as the lowest elevation sites within the project area. Composition of this association emphasizes species that are relatively tolerant of dry summer conditions, with occasional short duration floods in winter. Over time, the Valley Oak Woodland will develop into a climax oak gallery forest. However, earlier successional species are included in this community to provide valuable wildlife habitat in shorter time frames. The understory will be creeping wildrye.

This community will be planted across 54 acres on the southern border of the project area in fields 3 and 4 (Figures 7 & 8).

Table 7. Plant composition of the Valley Oak Woodland community at the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

54 Acres				
Common Name	Scientific Name	Species Composition (%)	Density (plants/acre)	Total Number
Tree Species				
Black willow	<i>Salix gooddingii</i>	4	9	486
Box elder	<i>Acer negundo</i>	2	4	216
Oregon ash	<i>Fraxinus latifolia</i>	4	9	486
Valley oak	<i>Quercus lobata</i>	4	9	486
Interior live oak	<i>Quercus wislizeni</i>	2	4	216
Total Trees		16	35	1,890
Shrub Species				
Arroyo willow	<i>Salix lasiolepis</i>	4	9	486
Buttonbush	<i>Cephalanthus occidentalis</i>	6	13	702
California blackberry	<i>Rubus ursinus</i>	18	39	2,106
California rose	<i>Rosa californica</i>	14	30	1,620
Clematis	<i>Clematis ligusticifolia</i>	4	9	486
Coyote brush	<i>Baccharis pilularis</i>	6	13	702
Dutchman's pipevine	<i>Aristolochia californica</i>	6	13	702
Elderberry	<i>Sambucus mexicana</i>	8	17	918
Mule fat	<i>Baccharis salicifolia</i>	12	26	1,404
Sandbar willow	<i>Salix exigua</i>	6	13	702
Total Shrubs		84	182	9,828
TOTAL PLANTS		100	217	11,718

2. Mixed Riparian Forest

Mixed Riparian Forest is appropriate for areas which are currently in walnut production, but also show evidence of more regular flooding. This habitat naturally occurs along the where deep, loam soils are combined with a relatively shallow water table. The vegetation should develop into dense, riparian habitat. This type of cover is critical for many wildlife species, and the fruiting plants provide a valuable food source. The understory will be creeping wildrye.

This community will be planted across 122 acres on the northeastern portion of the project area, in field 1 (Figures 7 & 8).

Table 8. Plant composition of the Mixed Riparian Forest community at the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

122 Acres				
Common Name	Scientific Name	Species Composition (%)	Density (plants/acre)	Total Number
Tree Species				
Box elder	<i>Acer negundo</i>	4	9	1,098
Fremont cottonwood	<i>Populus fremontii</i>	6	13	1,586
Goodding's black willow	<i>Salix gooddingii</i>	4	9	1,098
Oregon ash	<i>Fraxinus latifolia</i>	6	13	1,586
Red willow	<i>Salix laevigata</i>	4	9	1,098
Valley oak	<i>Quercus lobata</i>	6	13	1,586
Western sycamore	<i>Platanus racemosa</i>	4	9	1,098
Total Trees		34	75	9,150
Shrub Species				
Arroyo willow	<i>Salix lasiolepis</i>	4	9	1,098
Buttonbush	<i>Cephalanthus occidentalis</i>	8	17	2,074
California blackberry	<i>Rubus ursinus</i>	12	26	3,172
California greenbriar	<i>Smilax californica</i>	4	9	1,098
California rose	<i>Rosa californica</i>	12	26	3,172
Coyote brush	<i>Baccharis pilularis</i>	4	9	1,098
Dutchman's pipevine	<i>Aristolochia californica</i>	4	9	1,098
Elderberry	<i>Sambucus mexicana</i>	8	17	2,074
Mule fat	<i>Baccharis salicifolia</i>	10	22	2,684
Total Shrubs		66	144	17,568
TOTAL PLANTS		100	219	26,718

3. Sycamore Riparian Forest

The Sycamore Riparian Forest is appropriate for areas which have good soil underlain by thin sand lenses. Due to the difficulty for tree roots to tap into the groundwater, this vegetation should develop into patchy woodland without a closed canopy. This type of habitat is utilized by species which prefer larger openings within the vegetation structure. The understory will be a mix of native grasses and forbs.

This community will be planted across 32 acres in the central portion of the project area, in field 2 (Figures 7 & 8).

Table 9. Plant composition of the Sycamore Riparian Forest community at the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

32 Acres				
Common Name	Scientific Name	Species Composition (%)	Density (plants/ acre)	Total Number
Tree Species				
Valley oak	<i>Quercus lobata</i>	10	14	448
Western sycamore	<i>Platanus racemosa</i>	10	14	448
Total Trees		20	28	896
Shrub Species				
California blackberry	<i>Rubus ursinus</i>	6	9	288
California rose	<i>Rosa californica</i>	8	12	384
Coffeberry	<i>Rhamnus californica</i>	4	6	192
Coyote brush	<i>Baccharis pilularis</i>	8	12	384
Elderberry	<i>Sambucus mexicana</i>	6	9	288
Mule fat	<i>Baccharis salicifolia</i>	8	12	384
Western redbud	<i>Cercis occidentalis</i>	4	6	192
Total Shrubs		44	66	2,112
Herbaceous Species				
Deergrass	<i>Muhlenbergia rigens</i>	6	9	288
Gumplant	<i>Grindelia camporum</i>	6	9	288
Mugwort	<i>Artemisia douglasiana</i>	8	12	384
Stinging nettle	<i>Urtica dioica</i>	8	12	384
Western goldenrod	<i>Euthamia occidentalis</i>	8	12	384
Total Herbaceous		36	54	1,728
TOTAL PLANTS		100	148	4,736

4. Mixed Riparian Scrub

The Mixed Riparian Scrub is appropriate for disturbed areas which have mixed quality soils, and a relatively shallow water table. This vegetation should develop into a low growing shrubby woodland, similar to early successional habitat. Shrub patches without a closed canopy to shade out understory plants provide valuable habitat to species which seek out early successional areas. The understory will be creeping wildrye.

This community will be planted across 16 acres in the central portion of the project area, in fields 1 and 2 (Figures 7 & 8).

Table 10. Plant composition of Mixed Riparian Scrub association at the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

16 Acres				
Common Name	Scientific Name	Species Composition (%)	Density (plants/acre)	Total Number
Shrub Species				
Arroyo willow	<i>Salix lasiolepis</i>	4	9	144
California blackberry	<i>Rubus ursinus</i>	18	39	624
California rose	<i>Rosa californica</i>	22	48	768
Coyote brush	<i>Baccharis pilularis</i>	10	22	352
Dutchman's pipevine	<i>Aristolochia californica</i>	4	9	144
Elderberry	<i>Sambucus mexicana</i>	14	30	480
Golden currant	<i>Ribes aureum</i>	8	17	272
Mule fat	<i>Baccharis salicifolia</i>	10	22	352
Sandbar willow	<i>Salix exigua</i>	10	22	352
Total Shrubs		100	218	3,488
TOTAL PLANTS		100	218	3,488

5. Herbaceous Understory

To prevent establishment and limit the extent of weed invasions, a dense, aggressive understory will be planted throughout the restoration. Incorporation of herbaceous plants will create important wildlife habitat, provide native seed sources, and inhibit the establishment of invasive species. Native grass will be planted in row center. These grass species will provide dense cover for California quail and many other wildlife species. Seed from local ecotypes will be purchased for the understory.

a) Valley Wildrye Grassland

The row centers of all communities described above will be drill seeded with native grasses (Table 11). River Partners will drill creeping wildrye at a rate of 5 pls pounds

per acre across 156 acres. This species persists well in the shade, and so will be planted where the overstory is expected to form a closed canopy.

A total of 26 acres will be planted with a mix of creeping wildrye, blue wildrye, meadow barley, and purple needle grass. This will be planted at a rate of 13 pounds per acre, and will be drilled between the wider rows of the Sycamore Riparian Forest, where the canopy is not expected to close.

Table 11. Plant composition of Valley Wildrye Grassland association at the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

Common Name	Scientific Name	Density (lbs/ acre)	Total acres	Total Lbs	Location*
Creeping wildrye	<i>Leymus triticoides</i>	5	156	780	VOW, MRF, MRS
Creeping wildrye	<i>Leymus triticoides</i>	4	26	104	SRF
Blue wildrye	<i>Elymus glaucus</i>	3	26	78	SRF
Purple needlegrass	<i>Nassella pulchra</i>	4	26	104	SRF
Meadow barley	<i>Hordeum brachyantherum</i>	2	26	52	SRF
TOTAL			260	1118	

VOW = Valley Oak Woodland*

MRF = Mixed Riparian Forest*

MRS = Mixed Riparian Scrub*

SRF = Sycamore Riparian Forest*

VOW= Valley Oak Woodland

MRF= Mixed Riparian Forest

MRS = Mixed Riparian Scrub

SRF = Sycamore Riparian Forest

b) Upland Forb Association

The upland forb association will be planted on 49 acres throughout the project area where soils are poor. Due to extremely thin soils and gravel in these areas which are not only insufficient to support woody vegetation, but also doubtful to support deep rooted native grasses. Soils of this nature are prevalent across the Rancho Breisgau property, and where they occur they support of wide array of upland associated native forb species.

These forb species (Table 12) provide habitat for native pollinators and honey bees. The seeds will be broadcasted at a rate determined by available seed sources.

Table 12. Potential Plant Species for the Upland Forb Association at the Rancho Breisgau Restoration Project

Common name	Scientific name
Blue dicks	<i>Dichelostemma capitatum</i>
Calycadenia	<i>Calycadenia</i> sp. (<i>ciliosa</i>)
False goldenaster	<i>Heterotheca oreganus</i>
Fitch's spikeweed	<i>Centromadia fitchii</i>
Gumplant	<i>Grindelia camporum</i>
Naked buckwheat	<i>Eriogonum nudum</i>
Sky lupine	<i>Lupinus nanus</i>
Showy milkweed	<i>Asclepias speciosa</i>
Telegraph weed	<i>Heterotheca grandifloa</i>
Vinegar weed	<i>Trichostema lanceolatum</i>
Wright's buckwheat	<i>Eriogonum wrightii</i>

D. Planting Tiles and Baseline Data

River Partners has developed a computer database system that identifies the plant species at a particular row and planting location within the field. This planning tool allows for the development of a site specific planting pattern that will create a vegetation mosaic of structural patterns within the restoration planting (e.g. dense thickets, light gaps, groves of taller trees, etc.) and match plants to specific field conditions (e.g. flood tolerant species in wet areas) or management objectives (e.g. dense vegetation to serve as a wildlife screen). Each planting location will receive a computer-generated label that lists its field, row and plant number, species name, and number code. The labels are installed in the field prior to planting, providing clear communication of the plan to the planting crew. The database is an important adaptive management tool because it allows for the determination of patterns in a plant species' survival rate or growth patterns across the field.

V. ENHANCEMENT

The enhancement area is a catch-all term for areas within the project boundary that are not intensively planted with woody or herbaceous species and also include existing riparian habitat. Enhancement activities will occur on approximately 270 acres, primarily between the northeastern edge of the restoration area and the Feather River with the exception of areas surrounding Abbott Lake. The main focus of the enhancement activities is to target non-native invasive species. Because limited funding precludes covering a large area; River Partners recommends prioritizing areas and target species. Targeted species include tree-of-heaven and Himalayan blackberry.

VI. REGULATORY COMPLIANCE

A. NEPA Compliance

BLM, using the restoration plan as a guiding document, will evaluate the environmental effects. The agency will complete a written environmental assessment (EA) to determine whether or not this federal undertaking would significantly affect the environment. If the answer is no, then BLM will issue a finding of no significant impact (FONSI), which will address all measures the agency will take in order to mitigate potentially significant impacts. If yes, then an environmental impact statement (EIS) will be prepared.

B. CEQA Compliance

The project must comply with all of the California Environmental Quality Act (CEQA) requirements prior to the start of project implementation. The Western Shasta Resources Conservation District will serve as the lead agency.

C. Cultural Resources

Several cultural resource sites are located within the Sacramento River Bend Area. BLM consulted with tribal members, in order to ensure that these areas not be

disturbed, and that they be protected in perpetuity. The exact locations of these sites will not be detailed in this plan.

Cultural monitors approved by the tribe may be on site during all ground disturbing activities. In the event that archeological resources are uncovered during ground preparation activity, River Partners staff will stop all activity within the vicinity of the discovery. The area will be flagged off in an effort to protect the discovery. After activity has stopped, staff will immediately contact River Partners' main office and BLM. Written confirmation will also be submitted to BLM. Activities may resume after receipt of notice from BLM.

D. Herbicide Permits

River Partners will submit a Pesticide Use Proposal that includes the herbicides most likely to be used on the project. Table 13 outlines the potential herbicides to be used on the Rancho Breisgau restoration project. River Partners will abide by county and state herbicide permitting and reporting requirements and apply only BLM-approved herbicides for weed control, including Honcho Plus ® (glyphosate), Garlon 3A® (triclopyr), and Goal 2XL® (Oxyfluorfen), within the project area. For all pesticide applications, non-native plants will be treated by methods outlined in the 2011 Redding Field Office Vegetation Management Using Herbicides: Shasta and Tehama Counties Environmental Assessment and the Redding Field Office Pesticide Use Proposal 2012-CAN060-01.

Table 13. Potential herbicides to be used on the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

Herbicide	Active Ingredient	Purpose
Honcho Plus ®	Glyphosate	Broadleaf (Himalayan blackberry) and grass control on berms and in row centers.
Garlon 3A®	Triclopyr	Woody species (Tree-of-Heaven) control in enhancement areas.
Goal 2XL®	Oxyfluorfen	Broadleaf control on berms and in row centers.

VII. FIELD IMPLEMENTATION

This section provides field managers with information needed to implement the plant design. The subsections describe the planting area, field layout and an approximate sequence of activities that will be carried out over the three-year term of the restoration project.

A. Field Descriptions

This section describes the characteristics and conditions for the fields (Figure 8) at the Rancho Breisgau Restoration Project.

1. Field 1

Field 1 includes everything north of the site access road off of Jelly's Ferry Road, as well as the Mixed Riparian Woodland on the south of the road. The field is approximately 136 acres. Planting berms will be pulled with a ridger, and the berms will be 20' apart. All woody species and herbaceous plugs will be installed on the berms, while the row centers (the area between the berms) will be drilled with native grasses using a Truax seed drill.

2. Field 2

Field 2 includes the Sycamore Riparian Forest as well as two plantings of Mixed Riparian Scrub. The field is approximately 43 acres. Planting berms will be pulled with a ridger, and the berms will be 30' apart in the Sycamore Riparian Woodland and 20' apart in the Mixed Riparian Scrub. All woody species and herbaceous plugs will be installed on the berms, while the row centers (the area between the berms) will be drilled with native grasses using a Truax seed drill.

3. Field 3

Field 3 field includes the Valley Oak Woodland which is west of the primary service road for the property, and in the southwest corner of the project area. The field is approximately 19 acres. Planting berms will be pulled with a ridger, and the berms will be 20' apart. All woody species and herbaceous plugs will be installed on the berms, while the row centers (the area between the berms) will be drilled with native grasses using a Truax seed drill.

4. Field 4

Field 4 includes the Valley Oak Woodland which is east of the primary service road for the property, and in the southeast corner of the project area. The field is approximately 37 acres. Planting berms will be pulled with a ridger, and the berms will be 20' apart. All woody species and herbaceous plugs will be installed on the berms, while the row centers (the area between the berms) will be drilled with native grasses using a Truax seed drill.

B. Row Orientation and Plant Spacing

The Sacramento River channel flows north-south. All woody trees and shrubs will be planted in rows in a north-south orientation with slightly curving rows.

C. Site Preparation

The project area will be maintained with various forms of weed control up to the time of planting. Annual grasses and other weeds will be mowed, and a fire-break will be maintained around the perimeter of the primary planting area. Existing native trees and shrubs, as well as large patches of native herbaceous growth such as creeping wildrye, Santa Barbara sedge, and mugwort will be left untouched. Any elderberry shrubs found within the project area will be fenced.

The site will be disked to break up the top 4-6 inches of soil, and then floated (smoothed out). A ridger will be used to install planting berms for the woody species.

A cultural monitor may be present for during the installation of the well, and during ripping and disking.

1. Orchard Removal

The current walnut orchards will be removed, except for a 5-10 acre small demonstration orchard which will be left in place and used for educational purposes by BLM. BLM will mark this site prior to any orchard removal activities.

Existing walnut trees will be cut down and removed as forest products, uprooted and removed, or a combination of those treatments. To reduce ground disturbance in culturally sensitive areas, no tracked vehicles will be used and orchard trees will be cut low to the ground where stumps can be left as is or ground down.

D. Irrigation System

One or two wells will be drilled prior to plant installation. The well(s) will be drilled in Field 1. The irrigation system will utilize the well(s) exclusively, but the final irrigation layout cannot be determined prior to testing the well. Trenching associated with the main line and sub-main lines would not exceed 24-inches in depth. There will be three emitters per plant supplying water at a rate of 1.8 gallons/hour. In anticipation that planted vegetation will become self-sufficient after three growing seasons, all drip lines would be removed from the project area at that time. At the end of the project, main lines and sub-main lines will remain. No buried irrigation devices will be placed on the prehistoric sites.

E. Plant Material Collection and Propagation

All plant material should come from within the watershed and from as close to the project as possible. Sources of field cuttings of cottonwood and willows should be demarcated during the growing season, and collected in January or February when the trees are dormant. Seeds for the herbaceous understory will be collected from sources near the project site, or purchased from a seed purveyor who carries the appropriate ecotypes.

A. Plant Installation

Once site preparation is complete and the irrigation system is in place, plant installation will begin. Woody species plant locations are staked and labeled according to River Partners' database system. The location of woody species within the rows is dictated by the planting tiles of the specific community types.

1. Woody species

Cottonwood, willow and mule fat cuttings should be planted in February or March. Potted stock should be planted in the spring or fall when conditions are cool and moist (Table 14).

2. Herbaceous species

a) Native Grasslands

Native grass seed will be purchased from stock collected from the same ecoregion as the restoration project and will be planted with a no-till drill. Seed will be drilled in late-fall, likely October or November, before the first rains of the season.

b) Upland Forbs

Seeds for the upland forb association will be collected locally by River Partners staff. The majority of the plant species produce seed in late September or October. Seed will be broadcast in late-fall, likely October or November, before the first rains of the season.

Table 14. Standard planting materials and times for native woody species to be used on the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

Species	Nursery Grown		Directly Planted		Planting Time (primary method)
	Seeds	Cuttings	Seeds	Cuttings	
Arroyo willow					Feb-Mar
Black willow					Feb-Mar
Fremont cottonwood					Feb-Mar
Mule fat					Feb-Mar
Box elder					Oct-Apr
Buttonbush					Oct-Apr
California blackberry					Oct-Apr
California rose					Oct-Apr
Clematis					Oct-Apr
Coyote brush					Oct-Apr
Dutchman's pipevine					Oct-Apr
Elderberry					Oct-Apr
Poison oak					Oct-Apr
Oregon ash					Oct-Apr
Western sycamore					Oct-Apr
Valley oak					Nov-Dec
Primary Method:					
Secondary Method:					

B. Plant Maintenance

1. Plant protectors

Plant protectors (one-quart milk cartons) should be installed with about 2 inches of wood shavings applied as mulch to hold soil moisture and minimize weed growth. These help protect the plant from desiccation, herbivory, and drift from herbicide applications.

2. Weed Control

Weed control is necessary for successful native plant establishment and habitat improvement. The weeds of greatest concern at the site are annual grasses and yellow star thistle.

Various methods will be used to control these species depending on the phase of the project. Once the woody species are planted, the berms will be sprayed with non-selective herbicides targeting all weeds. The berms will be subject to weed control throughout the life of the project. The row centers will undergo one season of general weed control before understory species are planted, which will include mowing at appropriate stages of weed growth followed by spraying non-selective herbicides. Once understory species are planted, selective herbicides will be used. In the case of this project, the understory consists entirely of broadleaf species. Herbicides such as Poast® (sethoxydim) will be used to target non-native grasses. Early season mowing

will also take place to help control fast-growing annual grasses and broadleaf species and favor the establishment of the perennial understory. Weed control in the native grasslands will consist of early season mowing to target annuals. Selective herbicide applications, such as 2,4-D, will be used to target broadleaf weeds.

The enhancement areas will undergo weed control as well. Non-native woody species will be the primary target in these areas. Removal of species such as Himalayan blackberry and tree-of-heaven will be followed up with applications of Garlon® (triclopyr) on resprouts.

3. Irrigation schedule

Because of the typically dry summers, irrigation will be required for plant establishment and survival. Irrigation will be applied with the goal that plants will become self-sufficient by the end of the third growing season.

In the first growing season, the rapidly growing seedlings have roots only in the surface (the top 1-2 feet) of the soil profile. The rooting zone must be kept moist through the season to ensure optimum growth and survival. Because of the sandy soils at the site and water table depths of over 12 feet, the soil moisture of the fields planted with woody species will need to be closely monitored. The intervals between irrigations are dependent upon soil texture, depth to water table, the weather conditions and plant water stress. Because of the mixture of species with different water demands, the plants must be carefully observed to maintain a balance of soil moisture that is acceptable for xeric species like valley oak and elderberry as well as more mesic species like cottonwood and willow.

The strategy for the second and third year is to train the roots to grow deep. Roots at depth (5-15 feet) will need less water and may be able to tap into the water table on the site and outcompete more shallow-rooted weeds. Less frequent, deep watering will encourage roots to grow deeper, well below the roots of the weeds, allowing the tree exclusive use of this deep moisture. As the tree's roots grow deeper, the times between irrigations become longer; this allows the soil surface layers to dry, thereby reducing weed vigor.

We anticipate that the well-drained, sandy soils, and relatively deep groundwater present on the site, will require frequent irrigations and careful observation of water stress. These areas may dictate the frequency of watering on the site. Field managers should use a combination of methods including evapotranspiration estimates, soil probes and plant water stress signs to assess soil moisture and alter the irrigation regime.

4. Herbivore Control

A number of measures can help control or minimize the effects of herbivores on young plants (Table 15). Cultural practices such as mowing or spraying can discourage most of these herbivores. One of the advantages of active restoration is that more plants are planted than the herbivores can eat. Some damage by herbivores is tolerable and should not impact the success of the planting.

Table 15. Summary of potential herbivores and possible control methods on the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.

Herbivore	Type of Damage	Comment on measure(s) or plant response
Beaver (<i>Castor canadensis</i>)	Cut down woody species to build dams.	Woody species can stump sprout.
Black-tailed deer (<i>Odocoileus hemionus</i>)	Browse saplings. Use trees to rub velvet off antlers.	Install heavy-gauge metal hoops and garlic capsules or other deterrent. Saplings can resprout.
California ground squirrel (<i>Spermophilus beecheyi</i>)	Dig up and shred plants and protectors. Eat the bark of willow and cottonwood saplings and limbs.	Flooding or disking can reduce populations.
Pocket gophers (<i>Thomomys bottae</i>)	Eat root systems (probably killing more saplings than any other vertebrate pest).	Control of weed cover allows predators to hunt gophers. However, gophers can persist in an open, weed-free field. Frequent disking, weed mulch control, or flooding reduces populations. A variety of birds will prey on gophers if given the opportunity. Raptor perches and owl boxes may increase predation.
Rabbits and Hares (Family Leporidae)	Browse early spring growth.	Most seedlings resprout.
Voles (<i>Microtus</i> sp.)	Eat bark and cambium at the base of sapling, usually girdling the entire stem. Dig-up and eat recently planted acorns.	Saplings resprout, unless vole population is high. Voles live only in dense herbaceous (weed) cover and never stop moving when in the open to avoid predators. Remove dense weed cover through herbicides or mowing.

C. Access

Access will be via the main gate off of Jelly's Ferry Road. The gate will be locked daily by River Partners staff. Currently there is no public access.

VIII. MONITORING AND REPORTING

River Partners has developed a science-based adaptive management program to respond to new information and changing conditions in order to 'close the loop' between monitoring and project implementation (River Partners 2008). For each restoration site, River Partners staff makes monthly activity reports throughout the year, and an annual quantitative survey between June and August. Towards the end of the growing season, monthly reports and the annual monitoring results are summarized and reported in an End of Season memo. Recommendations for changes in field management are also reported in the memo.

During the implementation phase of the project, monitoring results will be recorded in the following ways:

- Monthly field reports,
- End of season monitoring,
- Annual photo points,
- Annual end of season memos, and
- Final report.

These methods are described briefly below, and explained more fully in our monitoring program plan (River Partners 2008).

A. Field Reports

Field managers and biology staff complete monthly reports documenting field activities and observations. These reports generally note planting and maintenance activities, irrigation schedules, weed pressure, plant growth, soil moisture, vandalism, and rodent damage. Soil moisture data (qualitative and/or quantitative) is also collected during the growing season.

B. End of Season Monitoring

At the end of the first growing season, a complete census of all woody species is conducted. The data collected during the census are recorded in the plant database and used to calculate survivorship and to determine any changes to the planting design. During years two and three, woody species are sampled in random permanent monitoring plots to determine survivorship, growth and coverage. If the budget allows, herbaceous understory plantings will be sampled as well.

C. Photo Points

Biology staff will take pre- and post-planting photographs, which provide qualitative information on vegetation changes at the restoration site. The photographs are taken annually at established photo points late in the growing season.

D. End of Season Memo

The End of Season Memo documents the monitoring data, reviews site activities, provides a budget analysis and recommends future management actions. River Partners will also document observations related to natural processes such as flooding (erosion, sedimentation and debris deposition). These are produced following the end

of season meetings as in-house documents to help managers prioritize the project's needs. These memos will be available to any interested agency and stakeholder personnel.

E. Final Report

The final report summarizes the project, including information developed in the End of Season Memos. Activities will be analyzed in terms of the restoration plan and provide long-term management suggestions. The final report will be submitted to WCB and BLM upon completion of the project.

IX. SAFETY ISSUES

The health and safety of our employees are an integral part of our work. Prior to any work on the unit, River Partners staff will be briefed on safety issues associated with the site.

A. Standard Field Procedures

All employees will have a safety binder that describes safe work practices, and they will be responsible for complying with these practices. In case of injuries or illnesses while on the job, employees will:

- Call 911, or
- Call St. Elizabeth Community Hospital, (530) 529-8000, located at 2550 Sister Mary Columba Drive, Red Bluff, California, and
- Contact the River Partners office at (530) 894-5401.

In addition, River Partner employees will comply with the requirements of the Drug-Free Workplace Act of 1990 (Government code Section 8350 et seq.).

B. Flood and Fire Contingencies

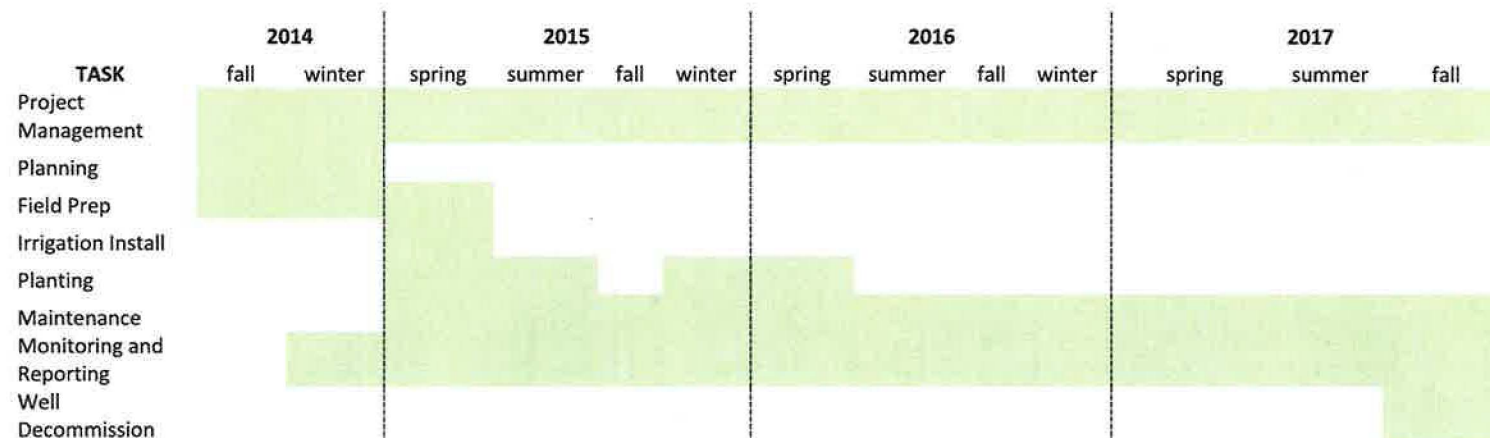
River Partners will remove all farm equipment from the site during the flood season (November 15 to April 15).

Throughout the implementation of the project, River Partners will periodically mow between rows and clusters, and along the perimeter of project areas, to reduce potential fire hazards.

X. PROJECT IMPLEMENTATION TIMELINE

The timeline for all implementation tasks discussed in this plan is shown in Table 16.

Table 16. Timeline for the scope of work tasks at the Rancho Breisgau Restoration Project, Sacramento River Bend, Shasta and Tehama County, California.



XI. REFERENCES

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United States Department of Interior, Bureau of Reclamation, & California State Water Resources Control Board (USDOI) (2003). Battle Creek Salmon and Steelhead Restoration Project. Draft Environmental Impact Statement / Environmental Impact Report. July 2003.

U.S. Fish and Wildlife Service. 2005. Sacramento River National Wildlife Refuge Final Comprehensive Conservation Plan. Final June 2005. Prepared by California/Nevada Refuge Planning Office, Sacramento, CA and Sacramento National Wildlife Refuge Complex, Willows, CA.

Attachment 3

Letter of Credit Form

IRREVOCABLE STANDBY LETTER OF CREDIT
NO. [***Number issued by financial institution***]

Issue Date: [***date***]

Beneficiary:

Department of Fish and Wildlife
1416 Ninth Street, 12th Floor
Sacramento, CA 95814
Attn: HCPB Mitigation Account Coordinator

Amount: **U.S. \$192,800.00**

Expiry: [***Date***] at our counters

Dear Sirs:

1. At the request and on the instruction of our customer, **Tehama County Department of Transportation** ("Applicant"), we, [***Name of financial institution***] ("Issuer"), hereby establish in favor of the beneficiary, the California Department of Fish and Wildlife ("CDFW"), this irrevocable standby letter of credit ("Credit") in the principal sum of U.S. **\$192,800.00** ("Principal Sum").
2. We are informed this Credit is and has been established for the benefit of the CDFW pursuant to the terms of the incidental take permit for the **Jellys Ferry Road Bridge Replacement Project** issued by the CDFW to the Applicant on [***date***] (**No. 2081-2016-002-01** ("Permit")).
3. We are further informed that pursuant to the Permit, the Applicant has agreed to complete certain mitigation requirements, as set forth in **Conditions 9.2 and 9.3** in the Permit ("Mitigation Requirements").
4. We are finally informed that this Credit is intended by the CDFW and the Applicant to serve as a security device for the performance by the Applicant of the Mitigation Requirements.
5. The CDFW shall be entitled to draw upon this Credit only by presentation of a duly executed Certificate for Drawing ("Certificate") in the same form as Attachment A, which is attached hereto, at our office located at [***name and address of financial institution***].
6. The Certificate shall be completed and signed by an "Authorized Representative" of the CDFW as defined in paragraph 12 below. Presentation by the CDFW of a

completed Certificate may be made in person or by registered mail, return receipt requested, or by overnight courier.

7. Upon presentation of a duly executed Certificate as above provided, payment shall be made to the CDFW, or to the account of the CDFW, in immediately available funds, as the CDFW shall specify.
8. If a demand for payment does not conform to the terms and conditions of this Credit, we shall give the CDFW prompt notice that the demand for payment was not effected in accordance with the terms and conditions of this Credit, state the reasons therefore, and await further instruction.
9. Upon being notified that the demand for payment was not effected in conformity with the Credit, the CDFW may correct any such non-conforming demand for payment under the terms and conditions stated herein.
10. All drawings under this Credit shall be paid with our funds. Each drawing honored by us hereunder shall reduce, *pro tanto*, the Principal Sum. By paying to the CDFW an amount demanded in accordance herewith, we make no representations as to the correctness of the amount demanded.
11. This Credit will be cancelled upon receipt by us of Certificate of Cancellation, which: (i) shall be in the form of Attachment B, which is attached hereto, and (ii) shall be completed and signed by an Authorized Representative of the CDFW, as defined in paragraph 12 below.
12. An "Authorized Representative" shall mean either the Director of the Department of Fish and Wildlife, the General Counsel of the Department of Fish and Wildlife, or a Regional Manager of the Department of Fish and Wildlife.
13. This Credit shall be automatically extended without amendment for additional periods of one year from the present or any future expiration date hereof, unless at least sixty (60) days prior to any such date, we notify the CDFW in writing by registered mail, return receipt requested, or by overnight courier that we elect not to consider this Credit extended for any such period.
14. Communications with respect to this Credit shall be in writing and addressed to us at [**name and address of financial institution**], specifically referring upon such writing to this credit by number. The address for notices with respect to this Credit shall be: (i) for the CDFW: Department of Fish and Wildlife, Habitat Conservation Planning Branch, 1416 Ninth Street, 12th Floor, Sacramento, California 95814-2090 Attn: HCPB Mitigation Account Coordinator; and (ii) for the Applicant: **Gary Antone, Director of Public Works, Tehama County Department of Public Works 9380 San Benito Avenue, Gerber, CA 96035**
15. This Credit may not be transferred.

16. This Credit is subject to the International Standby Practices 1998 ("ISP 98"). As to matters not covered by the ISP 98 and to the extent not inconsistent with the ISP 98, this credit shall be governed by and construed in accordance with the Uniform Commercial Code, Article 5 of the State of California.

17. This Credit shall, if not canceled, expire on **December 31, 2021**, or any extended expiration date.

18. We hereby agree with the CDFW that documents presented in compliance with the terms of this Credit will be duly honored upon presentation, as specified herein.

19. This Credit sets forth in full the terms of our undertaking. Such undertaking shall not in any way be modified, amended or amplified by reference to any document or instrument referred to herein or in which this Credit is referred to or to which this Credit relates and any such reference shall not be deemed to incorporate herein by reference any document or instrument.

[Name of financial institution]

By: _____

Name: _____

Title: _____

ATTACHMENT A

IRREVOCABLE STANDBY LETTER OF CREDIT NO. [***Number issued by financial institution***]
CERTIFICATE FOR DRAWING

To:

[Name and address of financial institution]

Re: Incidental Take Permit No. 2081-2016-002-01

The undersigned, a duly Authorized Representative of the Department of Fish and Wildlife ("CDFW"), as defined in paragraph 12 in the above-referenced Irrevocable Standby Letter of Credit ("Credit"), hereby certifies to the Issuer that:

1. ***[Insert one of the following statements:*** "In the opinion of the CDFW, the Applicant has failed to complete the Mitigation Requirements referenced in paragraph 3 of the Credit." ***or*** "As set forth in paragraph 13, the Issuer has informed the CDFW that the Credit will not be extended and the Applicant has not provided the CDFW with an equivalent security approved by the CDFW to replace the Credit."***]***
2. The undersigned is authorized under the terms of the Credit to present this Certificate as the sole means of demanding payment on the Credit.
3. The CDFW is therefore making a drawing under the Credit in amount of U.S. \$_____.
4. The amount demanded does not exceed the Principal Sum of the Credit.

Therefore, the CDFW has executed and delivered this Certificate as of the ____ day of _____, _____.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

BY: _____

[Insert one of the following: "DIRECTOR" ***or*** "GENERAL COUNSEL" ***or*** "REGIONAL MANAGER, Northern Region"

ATTACHMENT B

IRREVOCABLE LETTER OF CREDIT NO. [***Number issued by financial institution***]
CERTIFICATE FOR CANCELLATION

To:

[Name of financial institution and address]

Re: Incidental Take Permit No. 2081-2016-002-01

The undersigned, a duly Authorized Representative of the California Department of Fish and Wildlife ("CDFW"), as defined in the paragraph 12 in the above-referenced Irrevocable Standby Letter of Credit ("Credit"), hereby certifies to the Issuer that:

1. **[Insert one of the following statements:** "The Applicant has presented documentary evidence of full compliance with the Mitigation Requirements referenced in paragraph 3 of the Credit." **or** "The natural expiration of this Credit has occurred."]
2. The CDFW therefore requests the cancellation of the Credit.

Therefore, the CDFW has executed and delivered this Certificate for Cancellation as of the ____ day of _____, _____.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

BY: _____

[Insert one of the following: "DIRECTOR" **or** "GENERAL COUNSEL" **or** "REGIONAL MANAGER, Northern Region"

Attachment 4

Mitigation Payment Transmittal Form

California Department of Fish and Wildlife
Mitigation Payment Transmittal Form

Project Applicant Instructions: Please fill out and attach this form to payment. For conservation banks, also attach the Bill(s) of Sale for credits sold. One form may be used for multiple transactions, **BUT YOU MUST USE A SEPARATE FORM FOR EACH CHECK YOU TRANSMIT.** Make sure to include Project Name, Project Tracking Number, and FASB Mitigation Tracking Number (if available) on the attached payment type.

(1) **DATE:** _____

TO: Neil Manji, Regional Manager
California Department of Fish and Wildlife
Northern Region
601 Locust Street
Redding, CA 96001

(2) **FROM:** _____

Name

Mailing Address

City, State, Zip

Telephone Number/FAX Number

(3) **RE:** Jellys Ferry Road Bridge Replacement Project

(4) **AGREEMENT/ACCOUNT INFORMATION:**

(Check the applicable type)

☒ 2081 Permit ☐ Conservation Bank ☐ 1802 Agreement

☐ 2835 NCCP ☐ Other _____

2081-2016-002-01

[Project Tracking Number]

[FASB Mitigation Tracking Number (if available)]

Index _____ PCA _____

(5) **PAYMENT TYPE** (One check per form only): The following funds are being remitted in connection with the above referenced project:

Check information:

Total \$ _____

Check No. _____

Account No. _____

Bank Routing No. _____

a. Endowment: for Long-Term Management Subtotal \$ _____

b. Habitat Enhancement Subtotal \$ _____

c. Security:

1. Cash Refundable Security Deposit Subtotal \$ _____

2. Letter of Credit Subtotal \$192,800

1. Financial Institution: _____

2. Letter of Credit Number: _____

California Department of Fish and Wildlife
Mitigation Payment Transmittal Form

3. Date of Expiration: December 31, 2021

**CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
CALIFORNIA ENDANGERED SPECIES ACT
INCIDENTAL TAKE PERMIT
NO. 2081-2016-002-01**

**Tehama County Department of Public Works
Jellys Ferry Road Bridge Replacement Project**

CEQA FINDINGS

INTRODUCTION:

The California Department of Fish and Wildlife (CDFW) has prepared these findings to document its compliance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). CDFW is a responsible agency under CEQA with respect to the Jellys Ferry Road Bridge Replacement Project (Project) because of its permitting authority under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.). (See generally Pub. Resources Code, §§ 21002.1, subd. (d), 21069; CEQA Guidelines, § 15381; see also Cal. Code Regs., tit. 14, § 783.3, subd. (a).)¹ CDFW makes these findings under CEQA as part of its discretionary decision to authorize Tehama County Department of Public Works (Permittee) to incidentally take Sacramento River Winter-Run Chinook Salmon (*Oncorhynchus tshawytscha*) and Central Valley Spring-Run Chinook Salmon (*Oncorhynchus tshawytscha*) (hereafter, collectively referred to as Covered Species) during implementation of the Project. (See generally Fish & G. Code, § 2081, subd. (b); Cal. Code Regs., tit. 14, § 783.4.) Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon are designated as endangered and threatened, respectively, species under CESA. (Cal. Code Regs., tit. 14, § 670.5, subd. (a)(2)(M) and (b)(2)(C), respectively).

CDFW is a responsible agency under CEQA with respect to the Project because of prior environmental review and approval of the Project by the lead agency, Tehama County Department of Public Works. (See generally Pub. Resources Code, § 21067; CEQA Guidelines, § 15367.) Tehama County Department of Public Works analyzed the environmental impacts associated with implementation of the Project in a Mitigated Negative Declaration (SCH No. 2007082085), and approved the Project on June 24, 2014. In so doing, Tehama County Department of Public Works imposed various mitigation measures for impacts to the Covered Species as conditions of Project approval and concluded that Project-related impacts to the Covered Species could be substantially lessened with implementation of mitigation and avoidance measures, such that the impacts would be less than significant.

¹ The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with Section 15000.

As approved by Tehama County Department of Public Works, the Project involves of three elements; replacement of the existing bridge, realignment of Jellys Ferry Road, and relocation of a portion of the Bureau of Land Management (BLM) recreational facilities. The purpose of the Project is to provide a safe vehicular crossing over the Sacramento River on Jellys Ferry Road by replacing the existing structurally and seismically deficient bridge with a new bridge that meets current design standards. As such, replacement of the bridge is needed to improve public safety. The new bridge and roadway alignment would begin approximately 800- feet south of the existing bridge and end approximately 3,300 feet north of the existing bridge. The new bridge would be constructed on a new alignment approximately 45 feet west (upstream) of the existing bridge, measured at the south bank of the Sacramento River and approximately 190 feet west (upstream) of the existing bridge measured at the north bank of the Sacramento River.

The Project site is within the range of the Covered Species and is known to support individuals of the species. Development of the Project site will result in the permanent loss of 0.01 acres of habitat for the Covered Species and take of the Covered Species as defined by Fish and Game Code is expected. (Fish & G. Code, § 86.) These impacts fall within CDFW's permitting jurisdiction under CESA. (*Id.*, §§ 2080, 2081, subd. (b).)

As a responsible agency, CDFW's CEQA obligations are more limited than those of the lead agency, in that CDFW is responsible for considering only the effects of those activities involved in the Project which it is required by law to carry out or approve. Thus, while CDFW must consider the environmental effects of the Project as set forth in the Tehama County Department of Public Work's prior analysis, CDFW has responsibility to mitigate or avoid only the direct or indirect environmental effects of those parts of the Project which it decides to carry out, finance, or approve. (Pub. Resources Code, § 21002.1, subd. (d); CEQA Guidelines, §§ 15041, subd. (b), 15096, subds. (f)-(g).) Accordingly, because CDFW's exercise of discretion is limited to issuance of an Incidental Take Permit (ITP) for the Project, CDFW is responsible for considering only the environmental effects that fall within its permitting authority under CESA. (See generally *San Diego Navy Broadway Complex Coalition v. City of San Diego* (2010) 185 Cal.App.4th 924, 935-941.) Indeed, with respect to all other effects associated with implementation of the Project, CDFW is bound by the legal presumption that the Mitigated Negative Declaration fully complies with CEQA. (Pub. Resources Code, § 21167.3; *City of Redding v. Shasta County Local Agency Formation Commission* (1989) 209 Cal.App.3d 1169, 1178-1181; see also CEQA Guidelines, § 15096, subd. (e); Pub. Resources Code, § 21167.2; *Laurel Heights Improvement Association v. Regents of the University of California* (1993) 6 Cal.4th 1112, 1130.)

FINDINGS:

CDFW has considered the Mitigated Negative Declaration adopted by Tehama County Department of Public Works as the lead agency for the Project.

CDFW finds that the mitigation measures imposed as conditions of Project approval by Tehama County Department of Public Works, along with the mitigation measures and Conditions of Approval set forth in CDFW's ITP for the Project, will ensure that all Project-

related impacts on the Covered Species are mitigated to below a level of significance under CEQA.

CDFW finds that issuance of the ITP will not result in any previously undisclosed potentially significant effects on the environment or a substantial increase in the severity of any potentially significant environmental effects previously disclosed by the lead agency. Furthermore, to the extent the potential for such effects exists, CDFW finds adherence to and implementation of the conditions of Project approval adopted by the lead agency, as well as adherence to and implementation of the Conditions of Approval imposed by CDFW through the issuance of the ITP, will avoid or reduce such potential effects to below a level of significance.

The following measures and others set forth in CDFW's ITP for the Project will avoid to the extent feasible and mitigate to below a level of significance all Project-related impacts on the Covered Species:

- A. A Designated Biologist will be responsible for monitoring Covered Activities to help minimize and fully mitigate or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. Permittee will obtain CDFW approval of the Designated Biologist in writing before starting Covered Activities, and will also obtain approval in advance in writing if the Designated Biologist must be changed.
- B. Permittee will conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the Designated Biologist that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in this ITP. Permittee will provide interpretation for non-English speaking workers, and the same instruction will be provided to any new workers before they are authorized to perform work in the Project Area. Permittee will prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the Project Area. Upon completion of the program, employees will sign a form stating they attended the program and understand all protection measures. This training will be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.
- C. Permittee will restore on-site 0.95 acres of Covered Species spawning habitat. Permittee will place gravel work pads prior to beginning any instream work (percussive, CIDH casing placement, etc). Within one (1) month of completing instream work and removing the top surface of the gravel work pad, Permittee will provide a final report to CDFW indicating that at least 0.95 acres of gravel at least 1-foot in depth has been left in place by the Permittee to create spawning habitat. Additional gravel may be placed against the streambank where it can wash back into the stream at high flows.

- D. Permittee will fund River Partners to undertake 6.78 acres of riparian restoration at the Rancho Breisgau Restoration Site. Restoration shall be consistent with the Riparian Restoration Plan for Rancho Breisgau, prepared by River Partners, February 23, 2015. Restoration of habitat must be complete before starting Covered Activities or within 18 months of the effective date of the ITP if Security is provided
- E. Compliance monitoring will be reported monthly and annual reports will be sent to CDFW by January 31 of each year.
- F. Non-compliance will be reported to CDFW within 24 hours during the construction phase.
- G. Covered Species found on the Project site shall be relocated by the Designated Biologist to a protected off-site location.
- H. Permittee will prepare and submit a final mitigation report within 45 days following completion of the Project to notify CDFW of the success and effectiveness of required mitigation measures.

CDFW finds that the Mitigation Monitoring and Reporting Program in Attachment 1 of CDFW's ITP for the Project will ensure compliance with mitigation measures by requiring the Permittee to monitor and report progress in implementing those measures for review by CDFW staff.

The Mitigation Monitoring and Reporting Program is adopted.

The Project is approved.

DATE: 4/5/10

By: 
Neil Manji, Regional Manager
Northern Region
DEPARTMENT OF FISH AND WILDLIFE