RECLAMATION

Managing Water in the West

Environmental Assessment

Coleman National Fish Hatchery – Barrier Weir Site Modifications

September 2011

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Regional Office
Sacramento, CA

Mission Statements

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

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

Contents

List of Acronyms and Abbreviations

ADA	Americans with Disabilities Act
APE	Area of Potential Effect
Barrier Weir Project	Coleman National Fish Hatchery Fish Barrier Weir and Ladder Modification Project
BMP	Best Management Practices
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
Corps	U.S. Army Corp of Engineers
CNFH	Coleman National Fish Hatchery
CWA	Clean Water Act
CV	Central Valley
DPS	Distinct Population Segments
EA	Environmental Assessment
EFH	Essential Fish Habitat
ESA	Federal Endangered Species Act
ESU	Evolutionary Significant Unit
FONSI	Finding of No Significant Impact
FRH	Feather River Hatchery
FWCA	Fish and Wildlife Coordination Act
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
MSA	Magnuson-Stevens Conservation and Management Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	Natoinal Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
PCE	Primary Constituent Elements
Reclamation	Bureau of Reclamation
RWQCB	Regional Water Quality Control Board
Service	U.S. Fish and Wildlife Service
Sq ft	square feet
SPCCP	Spill Prevention Control Countermeasure Plan
THPO	Tribal Historic Preservation Office
VELB	Valley Elderberry Longhorn Beetle

Section 1 Purpose and Need for Action

1.1 Introduction

The U.S. Department of the Interior, Fish and Wildlife Service (Service) and the Bureau of Reclamation (Reclamation) are working cooperatively on a new Proposed Action located at the Barrier Weir and Ladder facility at the Coleman National Fish Hatchery Complex (CNFHC), near Anderson, California, Shasta County. Although this Proposed Action is a new development, several distinct components of this Proposed Action are related to a recent construction project at the CNFHC, the Coleman National Fish Hatchery Fish Barrier Weir and Ladder Modification Project (Barrier Weir Project). The objective of the Barrier Weir Project was to improve fish passage management capabilities. Monitoring results have resulted in the need for additional modifications to the overshot gate and wastewater wall to prevent unwanted upstream migration during critical times of the year and to protect the existing facilities operations which are currently at risk from water borne debris during high flows. In addition, the Proposed Action would restore viewing opportunities for the visiting public by constructing a new viewing platform that would provide the visiting public with a direct view of the adult salmon that congregate at the base of the Barrier Weir.

The Service is the lead federal agency for compliance with the federal endangered species act (ESA) and is the federal co-lead for compliance with the National Environmental Policy Act (NEPA). Reclamation is the lead agency for project management, engineering design, and environmental compliance including the U.S. Army Corps of Engineers (Corps) 404 Permit, and the California Regional Water Quality Control Board Clean Water Act permitting. Reclamation is also the federal co-lead agency for NEPA compliance.

The CNFHC is located on Battle Creek, 11 miles southeast of Anderson, California and 5.8 miles upstream from the Sacramento River. Battle Creek forms the boundary between Shasta and Tehama counties in north central California. Battle Creek flows into the Sacramento River at river mile 272, approximately 20 miles southeast of the city of Redding (Figure 1). CNFHC was built in 1942 as part of a program to mitigate for the adverse impacts on fish species resulting from the construction and operation of Shasta and Keswick Dams. Fish production programs at the CNFHC, one of the nation's largest fish hatcheries, support economically and socially important commercial and recreational salmon fisheries in the Pacific Ocean and the Sacramento River. A permanent barrier weir has been in place at the CNFHC since 1950 to assist in the congregation and collection of salmon and steelhead broodstock (individuals

that are kept separate for breeding purposes). Congregation and collection of broodstock at the CNFHC, including fall and late-fall Chinook and steelhead, occurs from September through February. At times when broodstock are not being congregated and collected, a fish ladder at the CNFH barrier weir is managed to afford passage to upper Battle Creek. During recent years, salmonids have been allowed to ascend Battle Creek upstream of the barrier weir from March through July. The fish ladder is currently closed during the month of August to exclude fall Chinook from the upper portions of the watershed where they could negatively impact (threatened) spring-run Chinook salmon. Prior to modification, the CNFHC barrier weir was effective at meeting the hatchery's needs for congregating broodstock; however, the weir did not completely block salmonids from ascending Battle Creek upstream of the CNFHC.

Construction modifications were completed in 2008 that incorporated an overhanging lip feature that allowed it to act as an effective fish barrier, which the overshot gate was not fitted with such a feature. To correct the deficiency of the existing overshot gate not acting as an effective fish barrier, a similar overhanging lip is being proposed and would be attached to the top leading edge of the overshot gate as well as the construction of a wasteway wall to prevent water borne debris that could potentially damage the facilities during high flows. In addition, the Proposed Action would include the construction of a new viewing platform that would restore public access that currently is not available (Figure 2).

The Proposed Action would commence and be completed during 2012. The Contractor would have discretion, with the Service's concurrence, to sequence the project activities. However, there two in-water construction windows with this project, the overshot gate modification work would take place during a specified in-water construction window between June 1st and September 30th 2012, inclusive, while the visitor platform work would take place between July 15th through September 30th, inclusive. The anticipated project completion date is September 30, 2012.

1.2 Purpose and Need

The CNFHC has been significantly modified in previous years to achieve fish passage objectives on Battle Creek. Modifications to the fish barrier weir and fish ladder have increased the efficiency at which anadromous fish are able to ascend upstream when allowed, and block unwanted upstream fish passage when required. The modifications to the fish barrier weir and ladder complex were needed to better manage fish passage above the weir to prevent hybridization of spring and fall Chinook and avoid possible redd superimposition and overuse of rearing habitat. The objective was to manage fish passage and blockage so that

salmonid species and races could be managed for optimum utilization of holding, spawning, and rearing habitat. The barrier weir was fitted with a stainless steel overhanging lip to block fish passage. An overshot gate was added to the right side of the barrier which is used to provide supplemental attraction flow water to the new main fish ladder.

The Service initiated a two year monitoring program to evaluate the effectiveness of the completed modifications to the barrier weir and fish ladder. The results from the monitoring by the Service have shown that the previously constructed overshot gate has failed to meet the desired objective of completely blocking salmon from migrating over the weir during pertinent periods of the year (Null et al. 2011). To meet the objective of the previous action, improvements would need to be made to the existing overshot gate at the CNFH. The proposed modifications would improve the design of the overshot gate which is necessary to preclude all Central Valley (CV) fall-run Chinook salmon from habitat in Battle Creek above the CNFHC. The Proposed Action would improve fish management capabilities in Battle Creek at the CNFHC which would substantially increase the extent and quality of habitat for the ecologically based fish group, anadromous fish species. The Proposed Action would contribute to the recovery of the Sacramento River winter-run Chinook salmon, CV spring-run Chinook salmon, CV fall-run/late-fall-run Chinook salmon, and CV steelhead.

The Proposed Action would also include the construction of a new public viewing platform that would be installed just downstream of the barrier weir for optimal viewing access of migrating salmonids. The platform would create public viewing opportunities that were lost prior to the modifications that were completed in 2008. In addition, increasing the fish viewing experience would be an asset to the public's education of listed salmonids and their life cycle.

This Environmental Assessment (EA): (1) describes the existing environmental resources in the Proposed Action area; (2) evaluates the potential effects of the alternatives on the resources; and (3) proposes measures to avoid or minimize any adverse effects of the Proposed Action. This EA is in compliance with the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508). Reclamation has also prepared a Finding of No Significant Impact (FONSI) which explains why the Proposed Action would not have a significant effect on the human environment.

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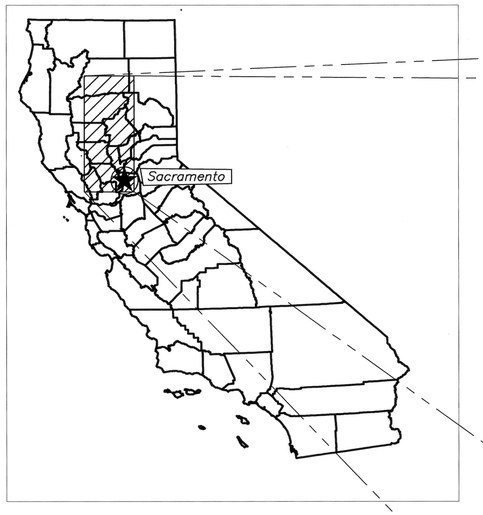
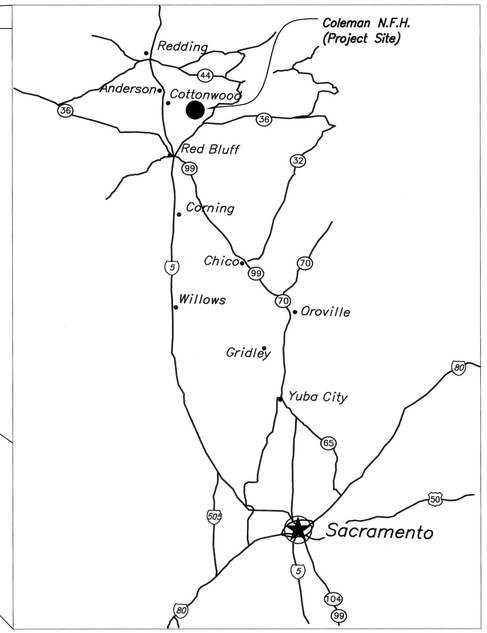


KEY MAP
N.T.S.



ROAD MAP
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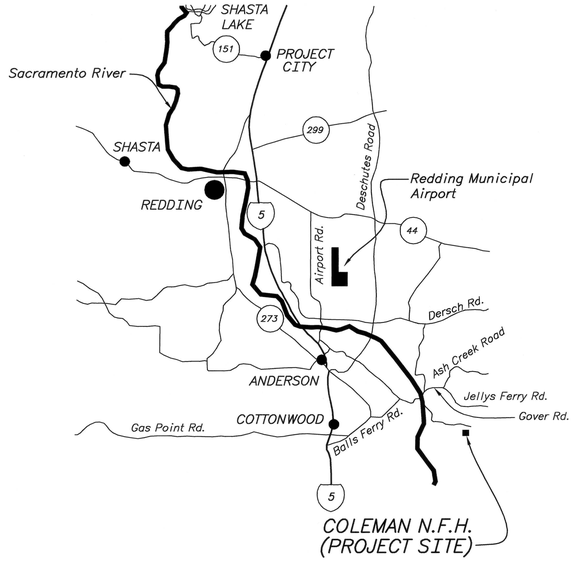

VICINITY MAP
N.T.S.

LEGEND

- Interstate Highway
- Highway
- City
- State Capital

ALWAYS THINK SAFETY

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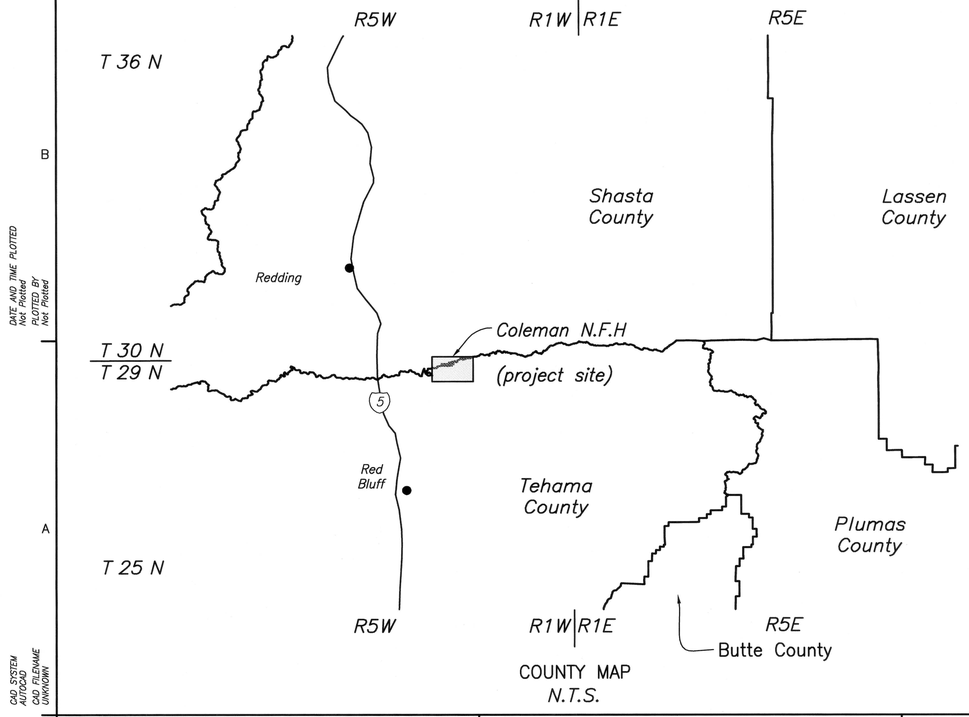
BUREAU OF RECLAMATION
CENTRAL VALLEY PROJECT – CALIFORNIA
SHASTA DIVISION

COLEMAN FISH HATCHERY SITE IMPROVEMENTS

GENERAL MAPS



COUNTY MAP
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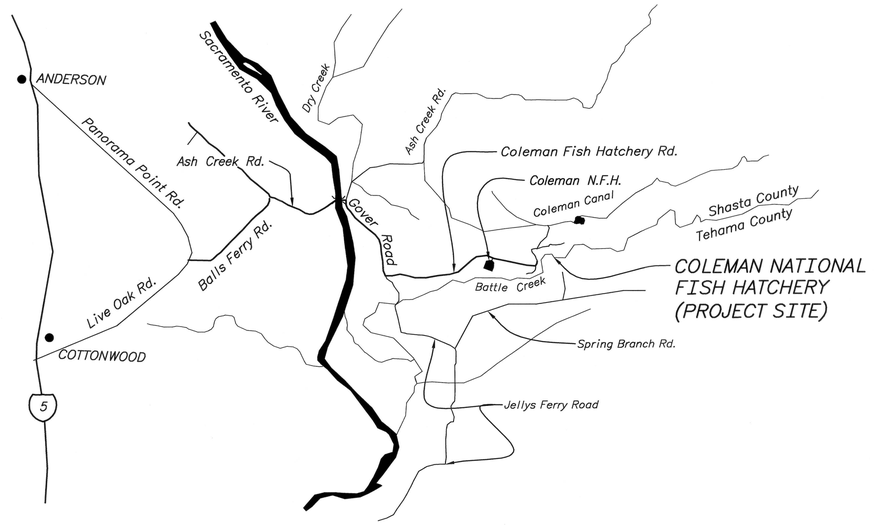

SITE MAP
N.T.S.

NOTE

1. Access to Coleman National Fish Hatchery by way of Jellys Ferry Road from Interstate Highway 5 is not recommended because the road is in poor condition and the single lane bridge has a load rate of 17–tons.

DESIGNED
DRAWN
CHECKED
TECH. APPR. JASON WAGNER, P.E.
APPROVED DAVID K. EDWARDS, P.E., MANAGER WATER CONVEYANCE GROUP
DENVER, COLORADO 2011-05-19

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SHEET 1 OF 1

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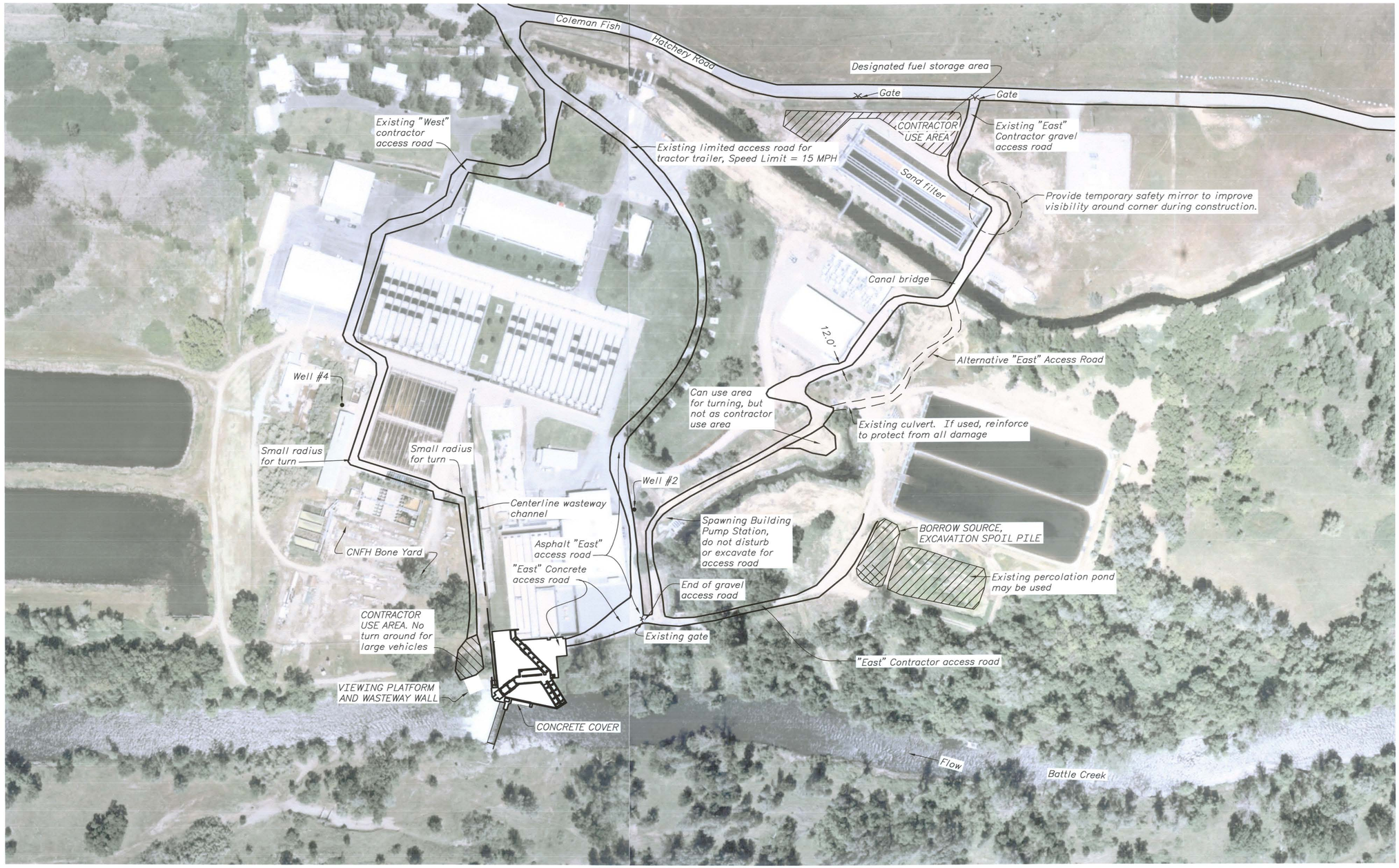

PLAN

100 0 100 200 300
SCALE OF FEET

NOTES

1. New features shown in ALL CAPITAL letters.
2. Aerial photograph was taken in 2005.
3. During work in the existing fish ladder area (east of the wasteway channel):
   Contractor to use access roads marked "East".
4. For construction activities west of the wasteway channel:
   Contractor to use access roads marked "West" to the extent possible. The OGR may allow "East" access roads to be used as approved.
5. Contractor may be permitted to use areas of the "Bone Yard" as approved by OGR.

CNFH Site Improvements
EA Figure 8

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BUREAU OF RECLAMATION
CENTRAL VALLEY PROJECT – CALIFORNIA
SHASTA DIVISION

COLEMAN FISH HATCHERY
SITE IMPROVEMENTS
CONTRACTOR ACCESS ROADS
PLAN

DESIGNED Jason Wagner
DRAWN Jason Wagner
CHECKED Diane Carroll
TECH. APPR Jason Wagner P.E.
JASON WAGNER, P.E.
APPROVED
DAVID K. EDWARDS, P.E., MANAGER, WATER CONVEYANCE GROUP
DENVER, COLORADO 2011-05-19

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SHEET 1 OF 1

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1.3 Potential Resource Issues

The resource areas listed below have the potential to be affected by the Proposed Action and are discussed further in Section 3.

- Water Resources
- Fisheries
- Biological Resources
- Cultural Resources
- Indian Trust Assets
- Environmental Justice
- Cumulative Impacts

1.4 Resources Not Analyzed in Detail

It was determined that the following resources would not be impacted by the Proposed Action: land use, groundwater, recreation, geology and soils, noise, air quality, visual, transportation, hazards and hazardous materials, growth, socioeconomics, and global climate change. Therefore, impacts to these resources are not analyzed in this EA.

Section 2 Proposed Action Alternatives

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for modifications to the overshot gate or the construction of a new viewing platform to restore public access at the CNFHC.

2.2 Proposed Action Alternative

Under the Proposed Action, Reclamation would modify the existing fish barrier weir and fish ladder infrastructure as well as construct a new viewing platform to restore adequate public access to the CNFHC facilities. The proposed activities are further described below.

Proposed Modification Activities

A new horizontal lip would be added to the top of the overshot gate to afford increased fish blockage capability at this site. Also, a vertical stainless steel plate would be mounted to the wall that separates the overshot gate area from the barrier weir, as a opening develops on the barrier weir side when the gate is partially lowered. This opening could allow fish to pass. The new sidewall would close this opening and prevent fish passage during periods when the gate is lowered to provide attraction flows. To allow workers to safely install the lip and sidewall, a portion of the creek must be diverted away from the construction area. The facility does not have a bulkhead type of feature to isolate the area to allow the gate work to be performed safely.

A temporary cofferdam (Portadam) system would need to be installed to divert the creek away from the overshot gate area and direct the creek over the barrier weir to allow construction activities to occur. Approximately 383 square feet (sq ft) of Battle Creek could be temporarily impacted by installation and removal of this Portadam. Battle Creek surface water levels will be dependent on the water year type though flow depth would be less than six feet and would likely be less than four ft during in water construction.

The recent 2008 Barrier Weir project used the Portadam system to isolate the work areas and divert the creek into a constructed side channel. For the present project a Portadam would be used to divert surface water flow away from the construction area. This method consists of placement of a free-standing steel-support system and impervious fabric membrane. The frames are closely-spaced and interconnected to ensure stability, and the membrane is a durable plastic. To

control the seepage that typically occurs under the membrane, the membrane is often extended out into the flow several feet and weighted with gravel bags to secure the membrane to the creek bottom and improve the seal. Workers stand in the creek, or on a flotation device, e.g. barge or boat, to perform the deployment. A land-based crane or other lifting equipment would be utilized for transportation of materials required for Portadam assembly. Any water control measures that might be needed would comply with applicable CWA permits and requirements.

The second typical cofferdamming method involves a simple gravel-bag-style cofferdam, which would consist of clean spawning gravel (Trade name "Supersacks") with a membrane in the front. A land-based crane or similar lifting equipment would place the bags in the creek in a stable configuration (stacked as wide and high as needed to achieve stability and freeboard). Workers would place a membrane on the face of the cofferdam and may similarly extend the membrane out into the water and apply additional bags to improve stability and the seal. Any water control measures that might be needed would comply with applicable Clean Water Act (CWA) permits and requirements.

To more thoroughly dewater the work area immediately adjacent to the gate, a second line of sandbags or a temporary bulkhead device consisting of angles attached to the concrete wall and floor that would support a barrier panel may be installed after the main cofferdam is in place. Any water control measures that might be needed would comply with applicable CWA permits and requirements. The addition of the overhanging lip requires modification of the existing gate hoist to increase its capacity. The hoist work would take place during the gate modification behind the cofferdam or out of the water. The cofferdam would be installed and removed by a land based crane. Installation and removal would take up to one week. The modifications to the structure may only take a week to perform, so this cofferdam would be in and out of Battle Creek fairly quickly.

To prevent debris from entering and potentially damaging the original fish ladder, which is positioned immediately adjacent to Battle Creek, a reinforced concrete cover would be installed over the ladder. This would require raising the existing creekside wall about two feet. The metalwork of the existing trashracks, bulkhead, and diffuser bars would be modified or replaced to accommodate the new configuration. Grating and ladders would be added to provide worker access to the new enclosed area and allow efficient debris removal. The existing guardrail attached to the hatchery-side wall of the original fish ladder would be removed. To be in compliance with the Americans with Disabilities Act (ADA), a replacement ADA compliant guardrail would be installed on the creek side extended wall. The step between the south slab and the new concrete cover would be fitted with removable ADA compliant metal

ramps, platforms and handrails. These modifications would restore public access to prime viewing areas. The active Battle Creek channel would not be disturbed by these actions.

To prevent debris from entering and potentially damaging the wasteway and entrance ladder junction structures, a new wasteway wall would be constructed between the existing wasteway wall and the downstream right abutment area. Because this wall is in close proximity to the proposed new viewing platform, the new wasteway wall would be integrated with the vertical wall that supports the overhang for the viewing platform deck. The new wasteway wall would also be integrated with the existing 30 inch diameter temporary wasteway diversion pipe. The top of the new wasteway wall would be set at the same elevation as the existing wasteway wall and south slab area to provide the same level of flood protection. Excavation would be required to construct the footing for this wall and extends deep enough that a temporary cofferdam and dewatering system would need to be installed to separate the area from Battle Creek and allow the work to be performed in the dry. This cofferdam and dewatering system would be incorporated with a common system needed for the viewing platform construction. Because the in-water work would be performed in the low flow time of year the water level to be held back is in the one to three foot depth range.

As described above, a Portadam method or a simple gravel-bag-style cofferdam would be used. A limited amount of the existing riprap would be temporarily removed to provide adequate foundation for the frames or gravel bags and to minimize the amount of under-seepage that would need to be handled. This cofferdam would take one to two weeks to install and would be in place for up to 60 days. Water from cofferdam and foundation seepage would be controlled by several possible means. Pumps placed in gravel-filled trenches and sumps that collect and lower water levels are typical methods. Water collected would be pumped to treatment facilities before being allowed to be discharged back into Battle Creek. The approximate dimensions of this cofferdam are 50 by 17 ft and would isolate a streambed area approximately 850 sq ft in area. The cofferdam would be installed and removed by a land-based crane. Any water control measures that might be needed would comply with applicable CWA permits and requirements.

After the cofferdam is in position, the bank riprap and foundation materials would be excavated and temporarily stockpiled for reuse. The proposed viewing platform would be 30 feet by 30 feet and would be cantilevered eight feet over a vertical retaining wall. The edge of the platform would be positioned as close to the waterline as practicable balancing the need for viewing while minimizing temporary construction impacts to the creek. Once the excavation, concrete

placements, and riprap replacement for the platform and wasteway wall are completed to above the waterline, the cofferdam and dewatering systems would be removed.

Proposed improvements to handrails, guardrails, walkways, curbs, gratings, and ramps in the south slab area would all be ADA compliant. These additions and modifications would restore public access to the original fish ladder facilities at the edge of Battle Creek. These proposed modifications that would allow access to the existing facilities would be performed outside the Battle Creek channel.

A new concrete path would be built to connect the viewing platform with the restored public access areas at the south slab area. All excavation, concrete and fencing associated with this work would also take place outside the creek.

Access to the work sites would be by means of existing paved or graveled roads. Staging areas would be in sites used during the prior project or portions of the CNFHC's existing equipment and materials storage yard adjacent to the work site. No grading or alteration of these areas would be performed. Compacted backfill for the viewing platform may be obtained from the UFWS stockpile, located 700 feet east of the barrier weir. The materials in stockpile are excess excavated materials from the 2008 project which originated from stream channel alluvium and bank materials. Alternatively, the compacted backfill materials may be imported from approved sources of clean fill.

Section 3 Affected Environment & Environmental Consequences

3.1 Water Resources

3.1.1 **Affected Environment**

Surface waters that could be affected by the Proposed Action include Battle Creek which is located within the Enterprise Flat Hydrologic Area (Hydrologic Unit 508.10), in Shasta County, California. Battle Creek drains a watershed area of approximately 370 square miles. The watershed includes the southern slopes of the Latour Buttes, the western slope of Mt. Lassen, and mountains south of Mineral, California. Nearly 350 miles of streams in the Battle Creek watershed drain land at elevations as high as 10,400 feet and cascade steeply down through basalt canyons and foothills to the confluence with the Sacramento River near Cottonwood, California at an elevation of 335 feet. Approximately 250 miles of streams in the Battle Creek watershed are fish bearing and 87 miles of streams were historically accessible to anadromous fishes.

The main stem of Battle Creek is a 16.6 mile long tributary to the Sacramento River. Flows in Battle Creek are less than 500 cfs more than 90 percent of the time, but the stream experiences flash flooding with winter flows reported in excess of 6,000 cfs roughly every other year. Water overflows the banks at 3,000 cfs, which is not necessarily an annual occurrence, but is to be expected within two-year intervals.

3.1.2 **Environmental Consequences**

No Action

Under the No Action Alternative, Reclamation would not provide funding for modifications to the CNFHC facilities or provide new public access at the CNFHC. There would be no change to water resources under the No Action Alternative.

Proposed Action

Under the Proposed Action, all water "use" for the Proposed Action would be non-consumptive as all water removed from the work site during dewatering would be collected and pumped to treatment facilities before it would be discharged back into Battle Creek. Direct releases to the creek would comply with the conditions permitted by the Regional Water Quality Control Board (RWQCB). Surface water would temporarily be altered during the in-water work window but would be short in duration (June 1st thru September 30 for the overshot gate modification, and July 15th through September 30th for the visitor

platform work) and returned to the existing conditions after the modifications were completed.

The Proposed Action could result in degradation of water quality from temporary turbidity increases or erosion that could result from land disturbing activities during dewatering of construction/excavation sites. In addition, degradation to water quality could result from accidental spills of hazardous materials or petroleum products. Implementation of the Proposed Action would require permits from the RWQCB and the U.S. Army Corps of Engineers to ensure that water quality would not be adversely impacted by the Proposed Action. The permitting requirements, Water Quality Management Plan and Best Management Practices (BMP) included in the construction specification for the Proposed Action to avoid or minimize potentially adverse effects to surface water and water quality would most likely include the following:

- A Spill Prevention Control Countermeasure Plan (SPCCP) would be developed in coordination with the RWQCB through the Section 401 Clean Water Act permitting process.

- Soils contaminated with fuel or other chemicals would be disposed of in a suitable manner and location to prevent discharge into flowing waters or groundwater. The contractor would follow accepted disposal methods according to the SPCCP.

- Clean spawning gravel would be used to construct temporary cofferdams.

- Hazardous materials and petroleum products would be stored in approved containers or chemical sheds, and be located at least 100 feet from the creek in an area protected from runoff.

- Equipment and machinery coming in contact with water would be inspected daily and cleaned of grease, oil, petroleum products or other nonnative materials.

- Temporary sediment control measures (e.g., fiber rolls or silt fences) would be located, as needed, downstream of disturbed areas to prevent sediment from entering Battle Creek. These measures would be kept in place until disturbed areas are stabilized.

- Concrete delivery and transfer equipment would be washed in contained areas protected from direct runoff until the material sets.

The permitting requirements, Water Quality Management Plan, and BMPs included in the construction specification for the Proposed Action would avoid and/or minimize any potentially adverse effects to Battle Creek water resources. The Proposed Action would not adversely impact water resources.

3.2 Fisheries Resources

3.2.1 **Affected Environment**

A species list was generated for the Balls Ferry quadrangle from the Service's Sacramento Fish and Wildlife Office's website on June 7, 2010 (Appendix A). A species list from National Marine Fisheries Service (NMFS) is included in the Service's list. Those species which occur and have habitat within the Proposed Action area are analyzed in this document. In addition, the Proposed Action is within the region identified as Essential Fish Habitat (EFH) for Pacific salmon in Amendment 14 of the Pacific Salmon Fishery Management Plan, pursuant to Amendment 14 of the Magnuson-Stevens Conservation and Management Act (MSA). MSA requires federal agencies to consult with the NMFS on any action that may adversely affect EFH for Pacific salmon. NMFS will provide EFH Conservation Recommendations for any action that may adversely affect EFH.

The federally listed fish species and associated critical habitat which occur in Battle Creek, and therefore could potentially be impacted by the Proposed Action, are the threatened CV spring-run Chinook salmon (*Oncorhynchus tshawytscha*) Evolutionary Significant Unit (ESU); and the threatened CV steelhead (*Oncorhynchus mykiss*) distinct population segment (DPS). Green sturgeon (*Acipenser transmontanus*) are federally listed as the Southern DPS of North American green sturgeon and occur in the mainstem Sacramento River, though this species is not known to occur in Battle Creek and therefore is not included in the analysis of potential effects. While Winter- run Chinook salmon (*Oncorhynchus tshawytscha*) are not expected in Battle Creek, potential impacts on their critical habitat is considered.

The current status of salmonid populations, their critical habitat, and EFH is contained in two primary documents: the *Battle Creek Salmon and Steelhead Restoration Plan*, and the *Battle Creek Salmon and Steelhead Restoration Project (2005, 2006).* Information contained in these documents were further collaborated and refined by personal communications with Mike Berry (Fishery Biologist, California Department of Fish and Game), Matthew Brown (Fishery Biologist, Service, Red Bluff), and Scott Hamelberg (Project Leader/Fishery Biologist, Service, CNFHC) during the development of the recent Barrier Weir Project. A biological assessment was prepared and provided to NMFS for the Proposed Action with regards to listed fish species and potential project impacts. With measures identified by NMFS to be incorporated into the Proposed Action a

determination of may affect, but is not likely to adversely affect, listed anadromous fish or any of their designated critical habitat was obtained in September 2011 (Appendix A).

Adult escapement data, provided by the Service, are from the fish trapping in the upstream ladder of the barrier weir, or from the CNFHC. The fish trap in the upstream fish ladder is yearly monitored between approximately March 1 and August 1. Between March 1 and approximately late May, fish are trapped and directly handled and counted. Between approximately early June and August 1, fish are counted using videography. Beginning on August 1, current Battle Creek fishery management protocol calls for closure of the barrier weir fish ladder. Therefore, during August and September upstream fish migration is blocked, and fish monitoring is discontinued, as called for by fishery management considerations. The fish ladder is opened again about October 1 as adults are handled for broodstock collection and spawning purposes at the CNFHC. Broodstock collection and spawning operations continues at CNFHC until the end of February. Juvenile outmigration data are derived from a Service rotary screw trap located approximately 100 yards upstream of the barrier weir.

Status of Central Valley Spring-run Chinook Salmon

The National Oceanic and Atmospheric Administration (NOAA) listed the CV spring-run Chinook salmon ESU as threatened on September 16, 1999 (64 FR 50394). In June 2004, NOAA Fisheries proposed that CV spring-run Chinook salmon remain listed as threatened (69 FR 33102).This proposal was based on the recognition that although CV spring-run Chinook salmon productivity trends are positive, the species continues to face risks from having a limited number of remaining populations (*i.e.*, 3 existing populations from an estimated 17 historical populations), a limited geographic distribution, and potential hybridization with Feather River Hatchery (FRH) spring-run Chinook salmon, which until recently were not included and are genetically divergent from other populations in Mill, Deer, and Butte Creeks. On June 28, 2005, after reviewing the best available scientific and commercial information, NMFS issued its final decision to retain the status of CV spring-run Chinook salmon as threatened (70 FR 37160). This decision also included the FRH spring-run Chinook salmon population as part of the CV spring-run Chinook salmon species.

Critical habitat was designated for CVspring-run Chinook salmon on September 2, 2005 (70 FR 52488). Critical habitat for CV spring-run Chinook salmon includes stream reaches such as those of the Feather and Yuba Rivers, Big Chico, Butte, Deer, Mill, Battle, Antelope, and Clear Creeks, and the Sacramento River, bypass channels, and the Delta. Critical habitat includes the stream channels in the designated stream reaches and the lateral extent as defined by the ordinary high-water line. In areas where the ordinary high-water line has not been

defined, the lateral extent will be defined by the bankfull elevation (defined as the level at which water begins to leave the channel and move into the floodplain; it is reached at a discharge that generally has a recurrence interval of one to two years on the annual flood series) (70 FR 52488). Critical habitat for CV spring-run Chinook salmon contains specific areas that contain the primary constituent elements (PCE) and physical habitat elements essential to the conservation of the species.

The CV spring-run Chinook salmon population that currently exists in Battle Creek is at low levels. Monitoring conducted by the Service estimated escapement at about 100 adult fish per year over the past several years. Adult escapement can begin as early as March, peaking in early May, and decreasing through June and July. Spawning occurs from mid-August through October, with a peak in late-September. Adults hold and spawn far upstream of the barrier weir in reaches where water temperatures are cooler. Juvenile outmigration has averaged approximately 16,000-120,000 per year over the past several years. Peak juvenile outmigration is between December and February, but continues throughout the summer months of June through August.

The Service conducts juvenile monitoring operations in Battle Creek, and their datasets from 2005 and 2008 through 2010 years were used to estimate the number of juvenile spring-run Chinook salmon that could migrate during the in-stream work window. Within this dataset, the highest number (451) of juvenile spring-run Chinook salmon occurred in June 2010. An average of 0 juveniles would occur in July (2005 and 2010 datasets), 15 in August (2005 only), and 0 in September (2005 only). Therefore, based upon these data, we estimate that an average of 15 juvenile spring-run Chinook salmon will out-migrate past the Proposed Action site during the in-stream work window.

During the years of 2005 to 2010, adult spring-run Chinook salmon averaged 86, with a maximum of 141 during the months of June and July. This data does not reflect adult monitoring during August and September. Due to likely unsuitable environmental conditions in the Proposed Action area in August and September (low flows and warm water temperatures), adult spring-run Chinook salmon are generally not expected to be present in the Proposed Action area at that time.

Status of Central Valley Steelhead

The CV steelhead DPS was originally listed as threatened on March 19, 1998 (63 FR 13347). This DPS consists of steelhead populations in the Sacramento and San Joaquin River basins in California's CV. On June 28, 2005, after reviewing the best available scientific and commercial information, NMFS issued its final decision to retain the status of CV steelhead as threatened (70 FR 37160). This decision also included the CNFHC and FRH steelhead populations. These

populations were previously included in the DPS but were not deemed essential for conservation and thus not part of the listed steelhead population.

Critical habitat was designated for CV steelhead on September 2, 2005 (70 FR 52488). Critical habitat for CV steelhead includes stream reaches such as those of the Feather and Yuba Rivers, Big Chico, Butte, Deer, Mill, Battle, Antelope, and Clear Creeks, and the Sacramento River, bypass channels, and the Delta. Critical habitat includes the stream channels in the designated stream reaches and the lateral extent as defined by the ordinary high-water line. In areas where the ordinary high-water line has not been defined, the lateral extent will be defined by the bankfull elevation (defined as the level at which water begins to leave the channel and move into the floodplain; it is reached at a discharge that generally has a recurrence interval of one to two years on the annual flood series) (70 FR 52488).

The steelhead population that currently exists in Battle Creek is comprised mostly of hatchery-origin fish and to a lesser extent natural-origin and resident rainbow trout. Resident rainbow trout are generically indistinguishable from anadromous steelhead. The majority of adult steelhead enter Battle Creek between September and January, but adults have been observed at the Proposed Action area in August. Returning steelhead typically spawn between late December and early May. Steelhead juveniles are present and can out-migrate to the Sacramento River in every month of the year. However; out-migration is significantly reduced during the summer months due to high water temperatures.

Over the past 5 years (2007-2011), the annual average abundance of steelhead in Battle Creek, including hatchery and natural-origin fish, has been about 1,817 adults. Of the 1,817 only about 10 percent are estimated to be of natural origin. In addition, over the past 5 years (2007 through 2011), the CNFHC documented an average of 34 natural-origin (315 average total combined natural-origin and hatchery fish) adult steelhead present in October.

3.2.2 **Environmental Consequences**

No Action

Under the No Action Alternative, Reclamation would not provide funding for modifications to the CNFHC facilities or provide new public access at the CNFHC. The No Action Alternative would result in the continued hybridization of spring and fall-run Chinook salmon and possible redd superimposition and overuse of rearing habitat.

Proposed Action

Under the Proposed Action, Reclamation would provide funding for modifications to the CNFHC facilities as well as provide new public access at the CNFHC. The Proposed Action could temporarily adversely affect salmonid individuals, their critical habitat, and EFH in the following ways: accidental spill of construction-related or hazardous materials, increased sedimentation or erosion, stranding and/or impingement of fish during dewatering operations, spawning and rearing habitat disturbance, noise and vibration disturbance, and obstruction and/or interference of adult fish entry into the fish ladder and/or other impacts to fish migration or the migration corridor.

The Proposed Action could potentially benefit the spawning habitat quality and quantity since the Proposed Action would result in a portion of the spawning-sized gravel used for the construction of cofferdams to be kept in-water after construction. The cofferdams would utilize clean spawning gravel, if required, from acceptable gravel sources that may include deposits outside active stream channels at or above the 100 year flood plain. Spawning gravel would be uncrushed, rounded natural river rock with no sharp edges. Gravel would have the following size requirements: 98-100 percent passing through a 4-inch sieve, 60-80 percent passing through a 2-inch sieve, and 0 percent passing through a ½-inch sieve. No gravel would be smaller than ½ inch in diameter. Gravel would be completely free of dirt, silt, sand or any other fine particulate material that is less that ½ inch in diameter. In addition, gravel would be completely free of oils, clay, debris and organic material. Gravel would be washed at least once and have a cleanliness value of 90 or higher. These gravel specifications are standard for Central Valley Project Improvement Act spawning gravel restoration projects. Specifications were developed by State and Federal agencies in the late 1980's.

Project Impacts on Spring-run Chinook Salmon

The in-stream Proposed Action construction window (July 15th through September 30th for the visitor platform portion of the project; June 1st through September 30th for the overshot gate) coincides with the end of the adult return timing though the fish ladder at the barrier weir is closed between August 1st through September 30th, and spring-run Chinook salmon are not anticipated to be present in Battle Creek at the site of the barrier weir due to low flows and high water temperatures. During the days of the in-water work window when the upstream fish ladder is open (July), adult fish will be able to continue their migration upstream, as the Proposed Action would neither block nor impede passage through the fish ladder. Moreover, adult spring-run Chinook salmon do not spawn in the Proposed Action area. Any disturbance caused by Proposed Action activities would be brief and of limited duration and the scope of the Proposed Action size and footprint and duration are such that impacts to adult spring-run Chinook salmon are not anticipated. The potential direct impacts

from the Proposed Action would be minimal and short in duration resulting in long-term benefits to listed species.

Juvenile spring Chinook salmon out-migration has averaged approximately 16,000 to 120,000 per year over the past several years. Peak juvenile outmigration is between December and February, but continues throughout the summer months of June through August. During the in-stream construction window, monitoring conducted by the Service has documented that an average of 15 juvenile spring-run Chinook salmon will outmigrate past the Proposed Action site. Juvenile passage during the latter months of the construction window is so low that the Service has not conducted sampling during these months since 2005.

Because adult and juvenile spring-run Chinook salmon would be present in Battle Creek during the in-stream work window, the Proposed Action holds the potential to affect this run. Possible impacts would be primarily in the form of noise and disturbance from cofferdam construction and removal. The placement and removal of these cofferdams would be limited in duration and not require the entire in-stream work window. The modification to the overshot gate would be limited in duration (potentially 1 week).

The excavation and construction of the concrete footings for the visitor platform may require several weeks, but not the full duration of the in-stream work window. Construction work is not expected to occur continuously on a daily basis throughout its entire duration. The in-stream work area is limited to the two primary cofferdams, which comprise a total area of approximately 1,233 sq ft. Using an estimate of 128 ft for the linear stream-bank distance from the upstream outlet of the old fish ladder to the downstream point of the lowermost cofferdam, and assuming the average width of Battle Creek is 80 ft, this equates to a 10,024 sq ft surface area cross section of the adjacent Battle Creek channel. Hence, the area occupied by the two cofferdams would be approximately 12 percent of the total adjacent stream area. This simple relationship provides a general understanding that the cofferdams occupy a small percentage of the immediate stream area and, therefore, do not pose a restriction to the migration corridor. Additionally, operation of the upstream fish ladder at the CNFHC would not be affected by proposed construction activities.

Despite the in-stream work window overlapping with the time period that spring-run Chinook salmon are present in Battle Creek, the highly localized and brief duration of the Proposed Action activities would not equate to adverse impacts on adult or juvenile spring-run Chinook salmon or adversely modify critical habitat. Cofferdams would effectively guide fish through the main creek channel and away from construction activities associated with near-shore areas. Any juvenile fish present in the Proposed Action area prior to the installation of

cofferdams would have opportunity to disperse from the Proposed Action area during the course of the installations. The Proposed Action would result in long-term benefits to listed species.

Project Impacts on Steelhead

The Proposed Action activities occur during the time period that adult steelhead are present in Battle Creek. During the days of the in-water work window when the upstream fish ladder is open (July), adult fish would be able to continue their migration upstream, as the Proposed Action is not anticipated to neither block nor impede passage. Proposed Action activities in September may discourage steelhead from holding near to the construction site, however, the fish ladder at the CNFHC is closed at that time and fish are confined downstream of the barrier weir. Furthermore, work activities would not occur continuously during September, and as with Chinook salmon adults, the scope of the Proposed Action size and footprint and duration are such that impacts to adult steelhead are not anticipated.

Steelhead juveniles are present and can out-migrate to the Sacramento River in every month of the year. However, out-migration is significantly reduced during the in-stream construction window due to high water temperatures in lower Battle Creek.

The Proposed Action activities may result in juveniles avoiding the immediate area of the cofferdams and general Proposed Action area. Juveniles that actively avoid the Proposed Action area would not preclude them from migrating downstream. Downstream migrant juvenile steelhead would be guided around the work area by cofferdams. Any juvenile fish present in the Proposed Action area prior to the installation of the cofferdams would have opportunity to disperse from the Proposed Action area during the course of their installation. The Proposed Action would not adversely impact listed species.

Project Impacts on Essential Fish Habitat

Battle Creek is considered EFH for spawning and rearing Pacific salmon. The Proposed Action would not result in any temporary or permanent loss of available spawning habitat. No streambed or habitat alteration would result from the modification of the overshot gate. Construction activities would not alter any spawning activity as steelhead would not be spawning during the in-water work window. Spring-run Chinook salmon can only successfully spawn well upstream of the Proposed Action area. During construction and post-project, the area would maintain its function as a migration corridor both upstream and downstream.

The construction of the Proposed Action could have short-term direct effects associated with the certain activities though with the implementation of avoidance measures provided by NMFS along with the water quality BMPs and the limited in-water work window the Proposed Action is not likely to adversely affect salmonid populations, their associated critical habitat or EFH. The Proposed Action would have a long-term benefit to salmonid populations, their critical habitat and EFH.

3.3 Biological Resources

3.3.1 **Affected Environment**

A species list was generated for the Balls Ferry quadrangle from the Service Sacramento Fish and Wildlife Office's website on July 7, 2010 (Appendix A). Federally listed species that have the potential to be adversely impacted from the Proposed Action are analyzed in this document. In addition to the Battle Creek Salmon and Steelhead Restoration Project Final EIS/EIR, the previous Action Specific Impementation Plan for the CNFHC and Ladder Modification Project that was completed in 2005 documents the habitat within the Proposed Action area as well as biological surveys conducted for potential occupancy of listed species within the area.

3.3.2 **Environmental Consequences**

No Action

Under the No Action Alternative, Reclamation would not provide funding for the modifications to the CNFHC facilities or provide new public access at the CNFHC. The No Action Alternative would not result in adverse impacts to biological resources.

Proposed Action

Under the Proposed Action, Reclamation would provide funding for modifications to the CNFHC facilities as well as provide new public access at the CNFHC. The previous biological surveys conducted within the Proposed Action area are considered accurate for determining the potential of listed species occupancy within the Proposed Action area and the result of any adverse impacts to listed species from the implementation of the Proposed Action activities. All construction activities would be implemented on pre-disturbed land and would be sustained to these areas. Vegetation removal is not anticipated though if needed it would be limited to the Proposed Action area and therefore there would be no effect to listed plant species or foraging habitat for raptors or other migratory birds.

The habitat assessment conducted for the California red-legged frog (*Rana draytonii*) determined that there is low potential for this species to be present

within the area due to the lack of emergent vegetation, bank cover, and fast moving water. The Service concluded that the area does not support suitable breeding habitat for this species. In addition, the previous habitat assessment documents that the Proposed Action area does not support habitat associated with invertebrate species such as the conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*) or their associated critical habitat. The Proposed Action would have no effect on these listed species.

A valley elderberry longhorn beetle (VELB) survey resulted in a grove of elderberry bushes just upstream of the large concrete pad. The grove is protected by a six foot high cyclone fence which isolates them from a paved road that may be used for some Proposed Action purposes. The cyclone fence isolates construction activities from any maneuvering vehicles at the Proposed Action site by a broad, deep trench about ten feet deep and 10-20 feet wide at the top.

Surveys conducted for bald and golden eagles resulted in a pair of bald eagles that nest a quarter to half mile downstream of the fish barrier weir and marginal foraging habitat for these species surrounding the Proposed Action area. The pair of bald eagles formerly nested on the edge of the hatchery grounds but relocated when the large cottonwood limb holding their nest collapsed several years ago. The nest is separated from the Proposed Action area by a visual buffer of riparian forest and oak woodlands. In addition, the eagle pair showed no signs of disturbance during the larger construction project that created the structures now being modified, and would be subject to a lower risk of disturbance by the Proposed Action. The Proposed Action would modify an existing structure and would not decrease any potential foraging habitat for the bald and golden eagle. Pre-construction surveys would be completed for bald and golden eagles as well as migratory birds by a qualified biologist as described below. The Proposed Action would not result in adverse effects to bald and/or golden eagles.

Features of the proposed work that occur outside of the creek, such as the guardrail modifications, would be conducted in winter/spring of 2012. The in-water construction window is (June 1st through September 30th, overshot gate; and July 15th through September 30th, visitor platform) which overlaps with the generalized nesting season for most migratory birds (March 1 through September 15). While this generalized nesting season overlaps with the proposed construction it is unlikely that active nests (within or in close proximity to the Proposed Action site) would be present during this time frame. Pre-construction surveys would determine potential active nests. Measures are proposed below to assure that impacts to any potentially nesting bird species do not occur. The Proposed Action would not adversely affect migratory birds.

Avoidance and Minimization Measures Bald and Golden Eagle
If an eagle nest becomes active within the project area, or within a ½ mile buffer zone, after construction has begun, the California Department of Fish and Game (CDFG) and the Service would be contacted.

If an eagle nest becomes active within the project area, or within a ½ mile buffer of the project area, construction activity will begin no earlier than 8am each day from February 1 through July 31 of each year; or

If an eagle nest becomes active within a ½ mile buffer of the project area, foraging surveys at this section of Battle Creek will be conducted by a qualified biologist. The results of these surveys would be submitted to the Service. Should the Service determine that this section of Battle Creek is an important foraging area for bald eagles, construction activity will begin no earlier than 8am each day from February 1 through July 31 of each year.

Avoidance and Minimization Measures Nesting Migratory Birds and Birds of Prey
A qualified biologist shall conduct a pre-construction survey for active nests should construction commence during the nesting season for birds of prey and migratory birds (between March 1 and September 15). The pre-construction survey shall be conducted within a 1/2 mile radius of the construction area. The pre-construction survey shall be conducted within 15 days prior to commencement of construction activities. If surveys show that there is no evidence of nests, then no additional mitigation shall be required. If any active nests are located in the vicinity of the construction area, a buffer zone shall be established around the nests. A qualified biologist shall monitor nests during construction to evaluate potential nesting disturbance by construction activities. The biologist shall delineate the buffer zone with construction tape or pin flags within 100 feet of the active nest and maintain the buffer zone until the end of breeding season or when the young have fledged. Guidance from the Service shall be requested if establishing a 100-foot buffer zone is impractical.

With the implementation of the avoidance and minimization measures detailed above, the Proposed Action would not adversely impact biological resources.

3.4 Cultural Resources

Cultural resources is a term used to describe both 'archaeological sites' depicting evidence of past human use of the landscape through material culture and the 'built environment' which is represented in structures such as dams, roadways, and buildings. The term, 'cultural resources' may also apply to other types of resources that are neither archaeological sites or built environments; these

include, but are not limited to, traditional cultural properties, sites of religious or cultural significance, and sacred sites. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government's responsibility to consider cultural resources. Other applicable cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archaeological Resources Protection Act (ARPA). Section 106 of the NHPA requires the Federal government to take into consideration the effects of an undertaking on historic properties listed or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. Although the Section 106 and NEPA process are independent laws Reclamation uses the Section 106 process as its primary effort to identify impacts to cultural resources as they apply to NEPA.

3.4.1 **Affected Environment**

In 2005, Reclamation conducted cultural resources investigations at the Coleman Weir and fish facility. The resulting investigations identified a single cultural resource identified as CW-1 and described as a low density lithic scatter. In consultation with the SHPO Reclamation determined that CW-1 was not eligible for inclusion in the National Register. Reclamation entered into consultation with the SHPO in December of 2005 seeking their concurrence on our finding that the proposed actions to modify the Coleman Weir would result in no effect to historic properties. The SHPO provided its consensus on Reclamation's determination the CW-1 was not eligible for inclusion in the National Register and concurred with Reclamation's finding of no effect (SHPO Reference BUR051205A Appendix A). At that time, Reclamation utilized a 1997 consensus determination that stated the original Coleman Weir was not eligible for inclusion in the National Register. Following the conclusion of the Section 106 process, the Coleman Weir and fish facility was effectively demolished and reconstructed.

3.4.2 **Environmental Consequences**

No Action

Under the No Action Alternative, Reclamation would not provide funding to make improvements to the CNFHC. Because Reclamation would not provide funding and because Reclamation would have no other nexus, the selection of the No Action Alternative would not constitute an undertaking as defined by Section 301(7) of the NHPA. As a result there would be no mechanism for initiating Section 106 of the NHPA and no consideration of impacts to cultural resources through the Section 106 process. Actions would continue to occur as they do until such a time that an undertaking or action requires analysis by Reclamation or another entity with a regulatory nexus.

Proposed Action

Under the Proposed Action Alternative, Reclamation would provide funding to make modifications to the CNFHC. These modifications would be contained to the contemporary structure which has been completely modified. All activities associated with this Proposed Action would not impact previously undisturbed grounds and for the most part, be confined to the CNFHC and the creek itself. Because these actions would occur to modern facilities and within existing disturbance areas and waterways, the Proposed Action alternative has no potential to cause effects to historic properties pursuant to the regulations at 36 CFR §800.3(a)(1). Because the action has no potential to cause effects to historic properties, and because there is only one cultural resource that was not significant, the Proposed Action will have no impact on cultural resources.

3.5 Indian Trust Assets

3.5.1 **Affected Environment**

Indian Trust Assets (ITAs) are legal interests in property or rights held in trust by the United States for Indian Tribes or individuals. Trust status originates from rights imparted by treaties, statutes, or executive orders. These rights are reserved for, or granted to, tribes. A defining characteristic of an ITA is that such assets cannot be sold, leased, or otherwise alienated without Federal approval.

Indian reservations, rancherias, and allotments are common ITAs. Allotments can occur both within and outside of reservation boundaries and are parcels of land where title is held in trust for specific individuals. Additionally, ITAs include the right to access certain traditional use areas and perform certain traditional activities.

It is Reclamation policy to protect ITAs from adverse impacts resulting from its' programs and activities whenever possible. Types of actions that could affect

ITAs include an interference with the exercise of a reserved water right, degradation of water quality where there is a water right or noise near a land asset where it adversely affects uses of the reserved land.

3.5.2 **Environmental Consequences**

No Action

Under the No Action Alternative, the CNFHC would continue their current operational practices resulting in no adverse impacts to ITAs.

Proposed Action

Under the Proposed Action, the modifications to the CNFHC would proceed. The Proposed Action would not affect ITAs. The nearest ITA is the Redding Rancheria located 15 air miles west of the Proposed Action area.

3.6 Environmental Justice

3.6.1 **Affected Environment**

Executive Order 12898 requires each Federal agency to achieve environmental justice as part of its mission, by identifying and addressing disproportionately high adverse human health or environmental effects, including social and economic effects, of its programs and activities on minority populations and low-income populations of the United States.

3.6.2 **Environmental Consequences**

No Action

Under the No Action Alternative, modifications proven to be of importance to the functionality of the CNFHC would not be accomplished

Proposed Action

Under the Proposed Action, additional modifications would proceed at the CNFHC. The Proposed Action would not disproportionately impact economically disadvantaged or minority populations. The Proposed Action is located on Federal land, remote from residential areas.

3.7 Cumulative Impacts

The Proposed Action would support the proposed Battle Creek Restoration Project and the restoration of populations of listed steelhead, spring- and winter-run Chinook salmon in the Battle Creek watershed, while any existing affects on unlisted fall- and late fall-run Chinook salmon would remain unchanged.

The Proposed Action would provide passage capabilities planned for use on the upstream dams. However, the Proposed Action would neither necessitate implementation of either the Battle Creek Restoration Project nor affect any decisions concerning the long-term operation of CNFHC. The improved barrier weir and viewing platform would be compatible with all concepts that have been proposed for modifying operations at the CNFHC. The Proposed Action would not contribute to cumulative impacts to environmental resources.

Section 4 Consultation and Coordination

4.1 Federal Laws and Executive Orders

The following federal laws were considered during the preparation of this EA and the evaluation of the potential impacts from the Proposed Action.

4.1.1 Fish and Wildlife Coordination Act (16 USC. 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The Proposed Action is not considered a water development project. In fact the Propoesd Action is designed to minimize impacts to aquatic habitats and to improve holding, spawning, and rearing habitat conditions for aquatic species.

4.1.2 Endangered Species Act (16 USC. 1521 et seq.)

Section 7 of this Act requires Federal agencies to ensure that all federally associated activities within the United States do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species. Action agencies must consult with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service which maintains current lists of species that have been designated as threatened or endangered, to determine the potential impacts a project may have on protected species. Reclamation informally consulted with the NMFS for listed species and their critical habitat, as well as EFH. Concurrence of may affect but not likely to adversely affect listed fish species was obtained (Appendix A)

4.1.3 Migratory Bird Treaty Act (16 USC § 703 ET SEQ.)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns. The

Proposed Action does not involve removal of trees that could have an effect on migratory birds or removal of foraging habitat.

4.1.4 National Historic Preservation Act (16 USC 470 et seq.)

The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking listed on cultural resources on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion on the National Register are referred to as historic properties. The Proposed Action has no potential to cause effects to historic properties, nor impact cultural resources.

4.1.5 Environmental Justice (Executive Order 12898)

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, as amended, directs federal agencies to develop an Environmental Justice Strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. According to the Council on Environmental Quality's guidance, agencies should consider the composition of the affected area to determine whether minority populations, low-income populations, or Indian Tribes are present in the area affected by the Proposed Action, and if so, where there may be disproportionately high and adverse environmental effects. The Proposed Action would not impact minority, low-income populations or Indian Tribes.

Section 5 List of Preparers and Reviewers

Carolyn Bragg, Natural Resource Specialist, Bureau of Reclamation, MP
Scott Hamelberg, Project Leader, U.S. Fish and Wildlife Service, Anderson, CA
Jimmy Goodwin, Civil Engineer, Bureau of Reclamation, MP
Tom T. Kisanuki, Fish Biologist, Bureau of Reclamation, NCAO
Adam Nickels, Archaeologist, Bureau of Reclamation, MP

Section 6 References

Battle Creek Working Group. Battle Creek Salmon and Steelhead Restoration Plan. January 1999. http://www.battle-creek.net/docs/Battle%20CreekSalmonandSteelheadRestorationPlan.pdf

Null et.al. Monitoring and Evaluation of the Modified Fish Ladder and Barrier Weir at the Coleman National Fish Hatchery. March 2011

U.S. Bureau of Reclamation. Battle Creek Salmon and Steelhead Restoration Project. December 2008. http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=99%20

U.S. Fish and Wildlife Service. List of Species that Potentially Occur within USGS 7.5-minute Balls Ferry Quadrangle. Website accessed in July 2011.