DRAFT
ENVIRONMENTAL ASSESSMENT

FISH BARRIER WEIR AND LADDER MODIFICATION PROJECT
COLEMAN NATIONAL FISH HATCHERY

SHASTA AND TEHAMA COUNTIES, CALIFORNIA

Prepared by

United States Department of the Interior

Bureau of Reclamation
Northern California Area Office
16349 Shasta Dam Boulevard
Shasta Lake, California 96019

Fish and Wildlife Service
Coleman National Fish Hatchery Complex
24411 Coleman Fish Hatchery Road
Anderson, California 96007

March 2006

United States Department of the Interior

DRAFT
FINDING OF NO SIGNIFICANT IMPACT

FISH BARRIER WEIR AND LADDER MODIFICATION PROJECT
COLEMAN NATIONAL FISH HATCHERY
SHASTA AND TEHAMA COUNTIES, CALIFORNIA

In accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, the California/Nevada Operations Office of the U.S. Fish and Wildlife Service (Service) and the Northern California Area Office of the Bureau of Reclamation, co-lead agencies under NEPA, have determined that implementation of the Fish Barrier Weir and Ladder Modification Project (Project) at the U.S. Fish and Wildlife Service's Coleman National Fish Hatchery (Coleman NFH) will not result in a significant impact on the human environment. An Environmental Impact Statement, therefore, is not required for implementation of the Project.

The proposed action is to modify the Coleman NFH fish barrier weir and ladder to improve fish passage management capabilities on Battle Creek. The proposed action is considered a critical step to the ultimate success of salmon and steelhead restoration in Battle Creek since the Coleman NFH barrier weir is the first manmade obstacle encountered by upstream migrating fish.

This Finding of No Significant Impact, and the associated Environmental Assessment, assesses the environmental impacts of implementing the proposed action (i.e., construction activities related to modifying the weir and fish ladder). Implementing the proposed action itself will not necessitate any other changes in Coleman NFH facilities or any changes in its operations. Any such changes will be separately proposed and approved by agencies following compliance with all federal, state, and local laws and permitting requirements.

Project Purpose: The purpose of the proposed Fish Barrier Weir and Ladder Modification Project is twofold, as described below.

(1) The purpose of the proposed action is to modify the existing fish ladder to improve fish passage capability by increasing the design flow to be consistent with ladder design criteria established under the Battle Creek Salmon and Steelhead Restoration Project (Battle Creek Restoration Project). Specific to this site, the proposed ladder is designed to have attraction flows of up to 10 percent of the creek flow. Based on a maximum river flow of 3,000 cubic feet per second (cfs), up to 300 cfs (up to 10 percent of the creek flow) will be available for attraction flow for the ladder.

(2) The purpose of the proposed project is also to improve the blockage capabilities at the fish barrier weir to meet long-term fisheries management goals for Battle Creek. Specifically at this site, the proposed action provides the capability for blockage of fish migration up Battle Creek at flows up to 800 cfs.

Project Need: While the existing structure is effective for hatchery broodstock collection, there

is a need to improve fish passage management capability at the barrier weir. Modifications are needed to: (1) reduce the undesired upstream movement of fall Chinook salmon - consistent with Battle Creek fishery management objectives; and (2) improve fish passage at this site using fish ladder designs that are consistent with those proposed as part of the independent Battle Creek Restoration Project.

The modifications to the fish barrier weir and ladder complex are 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 is to manage fish passage and blockage so that salmonid species and races can be managed for optimum utilization of holding, spawning, and rearing habitat that will be available after the Battle Creek Restoration Project is completed.

The Project consists of the following specific objectives to meet the purpose and need of improving fish passage management capabilities at the Coleman NFH:

- Modify the existing barrier weir by adding a 2-foot wide lipped crest cap and a 10.5-foot overshot gate. The crest cap will provide 100 percent blockage to upstream migrating salmonids at flows up to 800 cfs.

- Fish ladder modifications include constructing a new ladder structure containing two forks, one leading directly to the existing Coleman NFH adult holding ponds and the second providing access to Battle Creek upstream of the barrier weir.

This Finding of No Significant Impact is based on an Environmental Assessment dated May___ 2006, prepared by Reclamation and Service staff, and has determined the following:

1. The Project will not significantly affect the geology or hydrology of Battle Creek.

2. The Project will not significantly affect water quality since construction specifications will employ Best Management Practices (BMPs) to comply with all permits protecting water quality.

3. The Project will not significantly affect biological resources including special-status salmonids and wildlife species. In addition, the Project will not significantly affect vegetation including riparian, wetland, and upland woodland and forest.

4. The Project will have no significant impacts on noise and air quality resources given the isolated rural location of the project.

5. The Project will not significantly affect land use or recreational opportunities.

6. The Project will not significantly affect the recreational fishery or the commercial fishery because construction will be phased to ensure continued operation of the Coleman NFH.

7. The Project will not impact any historic property.

8. The Project will not impact any Indian trust assets.

9. The Project will not impact minority and low-income populations or communities.

10. The Project will have no disproportionate adverse impacts on any economic or ethnic groups.

11. The Project will not significantly affect human settlement or markedly increase use of any of the proposed sites, so no growth-inducing impacts are expected.

12. The Project will not result in cumulative impacts.

FINDING OF NO SIGNIFICANT IMPACT

FISH BARRIER WEIR AND LADDER MODIFICATION PROJECT
COLEMAN NATIONAL FISH HATCHERY
SHASTA AND TEHAMA COUNTIES, CALIFORNIA

Approvals

Preparer:_____ Date:_____
Fishery Biologist

Recommended:_____ Date:_____
Environmental Specialist

Approved:_____ Date:_____
Area Manager
Northern California Area Office
Bureau of Reclamation

FINDING OF NO SIGNIFICANT IMPACT

FISH BARRIER WEIR AND LADDER MODIFICATION PROJECT
COLEMAN NATIONAL FISH HATCHERY
SHASTA AND TEHAMA COUNTIES, CALIFORNIA

Approvals (*continued*)

Approved:_____ Date:_____

Supervisor
California/Nevada Operations Office
U.S. Fish and Wildlife Service

TABLE OF CONTENT

DRAFT ENVIRONMENTAL ASSESSMENT

FISH BARRIER WEIR AND LADDER MODIFICATION PROJECT
COLEMAN NATIONAL FISH HATCHERY

SHASTA AND TEHAMA COUNTIES, CALIFORNIA

INTRODUCTION

The goal of the Fish Barrier Weir and Ladder Modification Project at Coleman National Fish Hatchery (Coleman NFH), the proposed action being analyzed in this Environmental Assessment (EA), is to improve fish passage and blockage capabilities at the first in-creek structure encountered in Battle Creek. Currently, the barrier weir is intended to operate as a complete barrier for about six months of the year to afford broodstock collection at the hatchery and to confine fall Chinook salmon to lower Battle Creek. The existing upstream ladder is open most of the remaining six months to afford fish passage opportunities into upper Battle Creek. While generally functional, the barrier weir and the upstream fish ladder have notable deficiencies given the current fish passage management objectives in Battle Creek.

First, while the existing upstream fish ladder at the barrier weir is known to pass fish, it does not meet current fish passage criteria established for other ladders in the watershed that are part of the proposed separate, but related, Battle Creek Salmon and Steelhead Restoration Project (Battle Creek Restoration Project). Secondly, the Coleman NFH barrier weir is not completely effective at preventing passage of adult salmonids in Battle Creek.

The improvements to the barrier weir and ladder complex included in the proposed action are necessary to facilitate restoration of naturally-produced salmonid populations in Battle Creek in conjunction with the independent Battle Creek Restoration Project.

The EA only assesses the environmental impacts of implementing the proposed action; construction activities related to modifying the weir and fish ladder. Implementing the proposed action itself will not necessitate any other changes in Coleman NFH facilities or any changes in its operations. Any such changes will be separately proposed and approved by agencies following compliance with all federal, state, and local laws and permitting requirements.

BACKGROUND

The Battle Creek Restoration Project proposes to improve fish passage on the creek by removing five Pacific Gas and Electric dams and improving ladders at three others, allowing fish access to over 40 miles of prime salmonid spawning and rearing habitat in the watershed. The Battle Creek Restoration Project focuses on the watershed above the Coleman NFH. The proposed action analyzed in this EA would remove potential impediments to the success of the Battle Creek Restoration Project as described below in the Purpose and Need for the Action. The proposed action is therefore designed to support the Battle Creek Restoration Project and augment restoration efforts for State- and Federally-listed as endangered winter Chinook salmon

(*Oncorhynchus tshawytscha*), State- and Federally-listed as threatened spring Chinook salmon, Federally-listed as threatened steelhead (*Oncorhynchus mykiss*), and Federal candidates fall and late-fall Chinook salmon.

In January 2004, the California Bay Delta Authority's (CBDA) Science Panel concluded that without the weir modifications, the risk of undesired movement of fall-run Chinook salmon upstream of this site would be unacceptably high. As the ladder at Coleman NFH is inconsistent with ladders designed for the Battle Creek Restoration Project, without modifications, passage of target salmonid runs into upper Battle Creek could be hindered. The Science Panel's report states that, "We support the USFWS proposal to improve the effectiveness of the barrier dam and the facilities for passing fish upstream."

LOCATION AND EXISTING FACILITIES

The Coleman NFH is located on Battle Creek (stream mile 5.5), in Shasta County, 11 miles southeast of Anderson, in northern California and 1.5 miles from the Sacramento River. Battle Creek is a tributary of the Sacramento River. The confluence of Battle Creek with the Sacramento River is at about River Mile 272, about 20 miles southeast of the city of Redding. Battle Creek forms the boundary between Shasta and Tehama Counties. Coleman NFH was built as part of a mitigation program for the construction and operation of Shasta Dam and was placed on Battle Creek because that stream had large, high quality flows of water and a previous history of successful fish hatchery operations. Coleman NFH, the nation's largest fish hatchery, has been successfully operated for over 60 years and supplies a major portion of the salmon supporting the commercial and recreational salmon fisheries offshore California and southern Oregon as well as the upper Sacramento River.

The existing barrier weir and associated fish ladders are located in Battle Creek at the hatchery site to facilitate broodstock collection and fish passage management at the Coleman NFH. The weir is a permanent concrete structure that extends across the full width of Battle Creek (approximately 90 feet). A fish ladder connecting the creek to the hatchery's adult holding ponds is located on the north bank of the creek. A separate upstream fish ladder, which allows passage above the hatchery, is also located on the north bank of the barrier weir. It is important to note, that the existing structural configuration is highly effective in achieving hatchery broodstock collection objectives, and that the proposed modifications are necessary to facilitate restoration of naturally-produced salmonid populations in Battle Creek in conjunction with the separate, but related, Battle Creek Restoration Project.

PURPOSE AND NEED FOR THE ACTION

Project Purpose: The purpose of the proposed Fish Barrier Weir and Ladder Modification Project is twofold, as described below.

(1) The purpose of the proposed action is to modify the existing fish ladder to improve fish passage capability by increasing the design flow to be consistent with ladder design criteria established under the Battle Creek Restoration Project. Specific to this site, the proposed ladder is designed to have attraction flows of up to 10 percent of the creek flow. Based on a maximum river flow of 3,000 cubic feet per second (cfs), up to 300 cfs (up to 10 percent of the creek flow) will be available for attraction flow for the ladder.

(2) The purpose of the proposed project is also to improve the blockage capabilities at the fish barrier weir to meet long-term fisheries management goals for Battle Creek. Specifically at this site, the proposed action provides the capability for blockage of fish migration up Battle Creek at flows up to 800 cfs.

Project Need: While the existing structure is effective for hatchery broodstock collection, there is a need to improve fish passage management capability at the barrier weir. Modifications are needed to: (1) the reduce undesired upstream movement of fall Chinook salmon - consistent with Battle Creek fishery management objectives; and (2) improve fish passage at this site using fish ladder designs that are consistent with those proposed as part of the independent Battle Creek Restoration Project.

The modifications to the fish barrier weir and ladder complex are 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 is to manage fish passage and blockage so that salmonid species and races can be managed for optimum utilization of holding, spawning, and rearing habitat that will be available after the Battle Creek Restoration Project is completed.

Need for Ladder Modification: More specifically, while the existing upstream fish ladder at the barrier weir is known to pass fish, it does not meet current fish passage criteria established for other ladders in the watershed that are part of the proposed Battle Creek Restoration Project. The existing upstream fish ladder has flow capacity of about 45 cfs. Considering site specificity and designs for fish ladders proposed for upper Battle Creek as part of the Battle Creek Restoration Project, criteria at this site requires a fish ladder with up to 300 cfs attraction flow, which is up to 10 percent of 3,000 cfs creek flow design limit. This design criteria and modification to the ladder is needed to provide acceptable fish passage conditions at creek flows up to 3,000 cfs, the flow at which the stream overflows its banks.

Need for Barrier Weir Modification: The existing Coleman NFH fish barrier weir is not completely effective at preventing passage of adult salmonids in Battle Creek. This is an important objective of fish passage management in Battle Creek as fall Chinook salmon returning to Battle Creek can number in the tens to hundreds of thousands of fish. These returning adult salmon are primarily the result of successful operations at the Coleman NFH. While most fall Chinook adults are confined below the barrier weir and/or are diverted into the hatchery for spawning purposes, it has been documented that some fish can ascend the weir as creek flows exceed 350 cfs. Even if only a small percentage of the total number of fall Chinook adults returning to Battle Creek escape above the weir, there is a potential that efforts to restore spring Chinook could be hindered. Although spring Chinook generally spawn before fall

Chinook, there is a slight overlap in the spawning timing. This overlap creates a potential for the hybridization of spring and fall Chinook salmon. Additionally, according to the CBDA Science Panel's findings, fall Chinook should not be encouraged above the weir due to a clear potential for fall Chinook adults or juveniles to compete for spawning or rearing space with spring Chinook. Specifically, the modifications to the barrier weir are needed to reduce the potential for spring and fall Chinook hybridization and competition for spawning or rearing space.

PROPOSED ACTION AND THE ACTION ALTERNATIVES

Alternatives Subjected to Screening and Eliminated From Further Analysis

A multi-agency technical team screened five action alternatives and eliminated all from further consideration in their original form due to cost concerns and doubts regarding their effectiveness. The alternatives considered and eliminated were:

1. Raise the barrier weir crest by 1-foot.

2. Install a finger-shaped lip on the barrier weir crest.

3. Install an ungated, solid lip (i.e., cap) on the barrier weir crest.

4. Modify the barrier weir crest to an Ogee shape.

5. Install eight pneumatically operated overshot gates to the barrier weir.

However, two of these five alternatives were modified and reconsidered for analysis in the EA. Alternative 1 (the 1-foot barrier weir crest raise) and Alternative 3 (the installation of an ungated solid lip, cap, on the barrier weir crest), were modified as described below and analyzed in this EA.

Alternative 1: No-Action Alternative

The No-Action Alternative would leave the existing barrier weir and fish ladder intact. It would leave the risk of interbreeding of fall-run and spring-run Chinook salmon intact and preclude optimal monitoring of the restoration program upstream of the Coleman NFH.

Alternative 2: Proposed Action - Add a 2-foot wide lipped crest cap and a 10.5-foot wide overshot gate to the barrier weir, and build a new ladder

The proposed modifications of the existing barrier weir and fish ladder are designed to more effectively block the passage of fall-run Chinook salmon by adding a 2-foot wide lipped crest cap to the barrier weir, and to improve the upstream fish ladder to promote effective and efficient selective fish passage management up Battle Creek (drawings in Appendices A, B and C).

The proposed action would modify the barrier weir to provide safe downstream passage of adult and juvenile fish in addition to providing the capability to either block or assist in fish passage

up Battle Creek. The proposed modification to the barrier weir by adding a 2-foot wide lipped crest cap would block fish migration up Battle Creek at flows up to 800 cfs. Fish ladder modifications would also assist in the recovery of these species by allowing fish and wildlife agencies to promote effective and efficient selective fish passage management up Battle Creek at least equal to that provided by the proposed ladders planned for upstream dams at flows up to 3,000 cfs, the flow at which the stream overflows its banks. Fish ladder modifications include constructing a new ladder structure containing two forks, one leading directly to the existing Coleman NFH adult holding ponds and the second providing access to Battle Creek upstream of the barrier weir.

The total footprint of the proposed action would be approximately 7.6 acres and consists of the following components:

Project Feature	Acres	Linear Feet
Battle Creek dewatered	0.9	525
South side island work area	0.5	
Diversion channel	1.2	600
Diversion channel spoil pile	1.6	
Contractor area south side	2.3	
Cofferdam access roads	0.2	
Fish ladder construction area	0.4	
Staging area	0.3	
North side access roads	0.2	

The proposed action would be implemented over a three-year period beginning in 2006 and ending in 2008. Each of the three construction seasons includes an **in-stream construction window between June 1 and September 30**. If all construction-related activities proceed without delays, it may be possible to complete all in-stream construction in only two seasons. However, for the purposes of this EA, the in-stream construction window is assumed to require three consecutive seasons. Below is a summary of the major construction-related components of the proposed action.

During the **first construction season** the following is expected to occur:

1. Begin modifying the existing fish ladder located on the north side of Battle Creek. Modifications would include excavation and concrete work for construction of both the "river" and "mid-junction" sections of the ladder. Work would be conducted in the dry, outside the active Battle Creek channel, and may require placement of one or two spawning gravel cofferdams in Battle Creek each approximately 500 cubic yards. The fish ladder cofferdams would be partially removed at the end of the in-stream construction window. Only the bottom one foot of spawning gravel, as measured from the channel bed upward, would be left in-stream. A dewatering system would be used to remove seepage from excavated areas.

   All cofferdams (fish ladder and diversion channel cofferdams) would be constructed of clean spawning gravel from acceptable gravel sources that may include deposits outside active

stream channels at or above the 100 year flood plain. Spawning gravel must 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 must be washed at least once and have a cleanliness value of 90 or higher based on CalTrans Test #227. These gravel specifications are standard for the Central Valley Project Improvement Act and the CALFED spawning gravel restoration projects. Specifications were developed by State and Federal agencies in the late 1980's.

2. A diversion channel would be partially excavated on the south bank of Battle Creek to dewater the area upstream and downstream of the barrier weir during the second and third construction seasons. Excavation would be done in the dry and work would be accomplished using excavators, backhoes, bulldozers, and dump trucks. To gain access to the south side, equipment would either ford the creek or use a stream crossing with culverts. If a stream crossing is used design specifications would meet the National Marine Fisheries (NMFS) Southwest Region Guidelines for Salmonid Passage at Stream Crossings. If a stream crossing is constructed, it would be removed at the end of the in-stream construction window. From August 1 to October 1, a picket weir would be installed at the downstream end of the diversion channel to block the upstream passage of fish. Typically the barrier weir would block fish passage during this time; however, while the creek is dewatered during construction, the flows pass through the diversion channel.

During the **second construction season** the following is expected to occur:

1. Complete excavation of the south bank diversion channel. Diversion channel would be approximately 600 feet in length with an excavated volume of approximately 12,000 cubic yards. Upstream and downstream diversion channel cofferdams would be constructed, Battle Creek flows diverted into the diversion channel, and the area dewatered. Construction of each diversion channel cofferdam would require the creek bed to be excavated to serve as a foundation. Each foundation would be approximately 80 feet long, 20 feet wide, 3-5 feet deep, and require excavation of approximately 200 cubic yards of material.

   The upstream diversion channel cofferdam would be constructed of approximately 600-1,000 cubic yards of spawning gravel, and the downstream diversion channel cofferdam constructed of approximately 1,000 cubic yards of spawning gravel. Both the upstream and downstream diversion channel cofferdams would be partially removed at the end of the in-stream construction window. Only the bottom one foot of spawning gravel, as measured from the channel bed upward, would be left in-stream as suggested by fishery biologists to improve spawning habitat quality and quantity. From August 1 to October 1, a picket weir would be installed at the downstream end of the diversion channel to block the upstream passage of fish.

2. Complete fish ladder modifications on the north side of Battle Creek. Modifications would include excavating and concrete work for construction of both the "entrance" and "hatchery" sections of the ladder. Work would be conducted in the dry, outside the active Battle Creek channel, and may require placement of one or two spawning gravel cofferdams, in Battle Creek, each approximately 500 cubic yards. The fish ladder cofferdams would be partially removed at the end of the in-stream construction window. Only the bottom one foot of spawning gravel, as measured from the channel bed upward, would be left in-stream. A dewatering system would be used to remove seepage from excavated areas.

3. A lipped crest cap and overshot gate would be added to the existing barrier weir.

4. The upstream and downstream sections of the diversion channel would be plugged. Both the upstream and downstream diversion channel cofferdams would be partially removed at the end of the in-stream construction window. Only the bottom one foot of spawning gravel, as measured from the channel bed upward, would be left in-stream as suggested by fishery biologists to improve spawning habitat quality and quantity.

During the **third construction season** the following is expected to occur:

1. The south bank diversion channel would be reoccupied by removing plugs, upstream and downstream diversion channel cofferdams constructed, and Battle Creek flow diverted into the diversion channel. The area would be subsequently dewatered

2. Complete minor modifications to the fish ladder, lipped crest cap, and overshot gate.

3. The diversion channel would be backfilled. Both the upstream and downstream diversion channel cofferdams would be partially removed at the end of the in-stream construction window. Only the bottom one foot of spawning gravel, as measured from the channel bed upward, would be left in-stream as suggested by fishery biologists to improve spawning habitat quality and quantity.

4. Diversion channel, and other impacted riparian and upland sites, would be restored to pre-project conditions by replanting and/or reseeding. In addition, elderberry mitigation plantings may be planted on the south side near the diversion channel location as a result of the ongoing Endangered Species Act consultation. Standard erosion control measures would be used to prevent erosion as stipulated the Regional Water Quality Control Board (RWQCB) permits.

5. From August 1 to October 1, a picket weir would be installed at the downstream end of the diversion channel to block the upstream passage of fish.

Conservation measures, Best Management Practices, and other environmental commitments included as a part of the proposed action are described in detail under each of the resource categories analyzed in this EA.

Alternative 3: Raise the crest 1-foot, add a 10.5-foot wide overshot gate, and build a new ladder.

Alternative 3 would provide the same benefits, would entail the same construction techniques, and the barrier weir would have the same footprint as Alternative 2. The two would differ solely in the nature of the modification to the crest of the weir to ensure blockage of fish passage and a slight increase in the impounded area upstream of the weir with a 1-foot increase in the elevation of the weir crest.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Geology and Hydrology

Flows in Battle Creek are less than 500 cfs more than 90 percent of the time, but the stream is "flashy" with winter floods 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.

All water "use" for the proposed action and alternative 3 would be non-consumptive as all water removed from the work site during dewatering would be returned to the creek either by subsurface flow following discharge to uplands or by direct release to the creek under conditions permitted by the RWQCB. During two construction seasons, approximately 525 linear feet (approximately 0.9 acres) of Battle Creek would be dewatered to facilitate implementation. Alternative 3 would result in a one foot increase in the height of the barrier weir crest which would raise the upstream surface water elevation of Battle Creek by one foot, a distance of approximately 100 feet upstream. In addition, raising the barrier weir crest by one foot could increase the rate at which localized flooding occurs, immediately upstream of the weir including the Coleman NFH fish viewing area.

Alteration of landforms would be temporary and highly localized under either action alternative. A temporary diversion channel would be excavated on the south bank of Battle Creek to dewater and divert flows around the construction area. In coordination with the Bureau of Land Management (BLM), the south bank land owner, the proposed action includes filling the temporary diversion channel to restore the south bank topography to its pre-project condition after the construction is completed.

No land disturbance would occur under the No-Action Alternative; therefore, no restoration would be required.

Water Quality

Implementation of the proposed action or alternative 3 could result in degradation of water quality from temporary turbidity increases or erosion, or the accidental spill of hazardous materials or petroleum products. Possible degradation of water quality could result from land disturbing activities and vegetation clearing, by temporarily diverting Battle Creek flow through the diversion channel, and during dewatering of construction/excavation sites. In addition, the construction site would contain various hazardous materials and petroleum products used in heavy machinery and construction operations. Implementation of the proposed action or alternative 3 would require permits from the RWQCB and the U.S. Army Corps of Engineers to ensure that water quality is not significantly impacted. These permits are likely to include the following construction requirements and Best Management Practices (BMPs) which would avoid or minimize water quality impacts:

- 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.

- Equipment which crosses the creek could be outfitted with “diapers” to catch oil or other petroleum projects.

- Diversion channel construction may include, but is not limited to, the use of clean/washed spawning sized gravel, riprap placement, and geotechnical fabric to avoid erosion and increases in downstream turbidity.

- 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.

- Interim measures to control erosion and sedimentation over-winter would include BMPs. These include, but are not limited to, mulch, straw waddles, and silt fences. All measures would be done in coordination with an erosion control specialist and

adhere to the RWQCB Construction Stormwater Permit.

- Settling ponds for dredge material would be constructed in accordance with RWQCB regulations and design criteria. Decant waters from the ponds would meet RWQCB permit criteria prior to discharge into Battle Creek. Excavated material would be stored using BMPs as required by RWQCB permits.

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

The permitting requirements and BMPs included in the construction specification for the project to avoid or minimize potentially adverse effects to water quality would reduce the effects of the proposed action or alternative 3 to less than significant levels.

No changes to water quality would occur under the No-Action Alternative.

Biological Resources

The Service's lists of special-status species for the Balls Ferry quadrangle map were reviewed (Appendix D) and species that the proposed action and alternative 3 could potentially impact are listed in Table 1. The following section presents these species and discusses what measures the proposed action and alterative 3 would incorporate to avoid or minimize impacts such that affects would not be significant.

Table 1. Special-status species at could potentially be impacted by implementation of the proposed action or alternative 3.

Common Name	Scientific Name	Status [1]		
		Federal	State	Other
Central Valley spring-run Chinook salmon and its critical habitat	*Oncorhynchus tshawytscha* (sr)	T	CT	
Sacramento River winter-run Chinook salmon	*Oncorhynchus tshawytscha* (wr)	E	CE	
Central Valley fall/late-fall-run Chinook salmon	*Oncorhynchus tshawytscha* (fr)	SC	CSC	
Central Valley steelhead (anadromous and resident) and its critical habitat	*Oncorhynchus mykiss*	T		
Green sturgeon	*Acipenser medirgstris*	C		
Delta smelt	*Hypomesus transpacificus*	T	CT	
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T		
California red-legged frog	*Rana aurora draytonii*	T	CSC	
Foothill yellow-legged frog	*Rana boylii*		CSC	SC
Western spadefoot toad	*Spea hammondii*		CSC	SC
Northwestern pond turtle	*Clemmys marmorata*		CSC	SC
Bald eagle	*Haliaeetus leucocephalus*	T, PR	CE, FP	
Golden Eagle	*Aquila chrysaetos*	PR	CSC, FP	
Cooper's hawk	*Accipiter cooperii*		CSC	
Osprey	*Pandion haliaetus*		CSC, SB	
American peregrine falcon	*Falco peregrinus anatum*		CE, FP	
Yellow-breasted chat	*Icteria virens*		CSC	
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	CE	
Little willow flycatcher	*Empidonax traillii brewsteri*			SC

[1] Status:

Federal:	T =	Listed as threatened under the Federal ESA.
	E =	Listed as endangered under the ESA.
	C =	Candidate for listing under the ESA.
	SC=	Species of concern under the ESA
	PR =	Protected under the Bald and Golden Eagle Protection Act.
State:	CT =	Listed as threatened under the CESA.
	CE =	Listed as endangered under the CESA.
	CSC =	California species of concern.
	FP =	Fully protected under California Fish and Game Code.
	SB =	Specified birds under California Fish and Game Code.
Other:	SC =	Other species of concern identified by CALFED.

Fisheries

The proposed action or alternative 3 would require approximately 525 linear feet (approximately 0.9 acres) of Battle Creek to be dewatered between June 1 and September 30 during each of two construction seasons. Dewatering of Battle Creek could affect spawning adult and rearing juvenile salmonids, their critical habitat, as well as Essential Fish Habitat (EFH).

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 Draft Action Specific Implementation Plan. Information contained in these documents are further collaborated and refined by personal communications with Mike Berry (Fishery Biologist, DFG), Matthew Brown (Fishery Biologist, Service, Red Bluff) and Scott Hamelberg (Project Leader/Fishery Biologist, Service, Coleman NFH Complex).

Adult escapement data, provided by the Service, are from the fish trapping in the upstream ladder of the barrier weir, or from the Coleman NFH. The fish trap in the upstream fish ladder is 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 ladder. Therefore, during August and September (during approximately ½ of the in-stream construction window) upstream fish migration is blocked and fish monitoring is discontinued, as called for by fishery management considerations. Although the upstream fish ladder remains closed until March, monitoring begins again approximately October 1 as adults are handled for broodstock collection and spawning purposes at the Coleman NFH. Juvenile outmigration data are derived from a Service rotary screw trap located approximately 100 yards upstream of the barrier weir.

The winter-run Chinook salmon population that currently exists in Battle Creek is at remnant levels and is essentially non-existent. Monitoring conducted by the Service documented a total of five adults over the past five years combined. Juvenile outmigration monitoring, conducted using a rotary screw trap located 100 yards upstream of the barrier weir, collected no winter-run juveniles over the past several years.

The spring-run Chinook salmon population that currently exists in Battle Creek is at low levels. Monitoring conducted by the Service estimated escapement at between 50 and 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 fish 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 has documented that less than 1,000 juveniles would outmigrate past the project site.

Fall-run Chinook salmon comprise the largest population of Chinook salmon in Battle Creek,

and they have been intentionally restricted from passing upstream of the Coleman NFH barrier weir since 1989. During the period 2000 through 2004 an average of nearly 182,000 fall Chinook salmon returned to Battle Creek annually, of which an average of nearly 54,000 were collected at Coleman NFH. The remaining fish in Battle Creek were mostly confined downstream of the Coleman NFH barrier weir. The abundance of fall-run Chinook salmon in Battle Creek has increased since about 1993.

Late-fall-run Chinook salmon comprise the second largest population of Chinook salmon in Battle Creek. During the past five years, an average of 3,623 adult late-fall-run Chinook salmon returned to the Coleman NFH. Only a small number of unmarked, possibly natural-origin, late-fall-run Chinook salmon utilized Battle Creek. While hatchery-origin late-fall Chinook salmon are retained at Coleman NFH, all natural-origin late-fall Chinook salmon collected during broodstock collection and spawning operations at Coleman NFH are passed upstream of the barrier weir consistent with Battle Creek fishery management considerations. However, an unknown, but presumed small number of late-fall-run Chinook salmon also presumably has been able to pass upstream at the Coleman NFH barrier weir during high flow events. The number of late-fall-run Chinook salmon spawning naturally below the Coleman NFH barrier weir is unknown, but is presumed to be small.

Battle Creek is considered EFH for spawning and rearing Pacific salmon. The area contains adequate spawning habitat for fall-run and late-fall-run Chinook salmon based on life history and suitable water temperatures during the spawning and egg incubation period. As previously mentioned, winter-run and spring-run Chinook salmon spawn far upstream and this spatial isolation would prevent impacts. Temporal and spatial isolation would prevent impacts to spawning steelhead. Finally, during the in-stream construction window, rotary screw trap monitoring shows a low number of outmigrants in response to low summer flows and suboptimal mean-daily water temperatures that range from 59.7°F (15.4°C) to 69.8°F (21.0°C) from 2000 to 2004.

The steelhead population that currently exists in Battle Creek is comprised mostly of hatchery-origin fish, and to a lesser extent, natural-origin steelhead. The majority of adult steelhead enters Battle Creek between September and January, but adults have been observed at the project site through August. Returning steelhead typically spawn between late December and early May. Steelhead juveniles are present and can outmigrate to the Sacramento River in every month of the year. However, outmigration is significantly reduced during the in-stream construction window due to high water temperatures.

Over the past 10 years, the annual average population of steelhead in Battle Creek, including hatchery and natural-origin fish, has been about 2,400 adults, of which only about 10 percent are estimated to be of natural-origin. From 2002 to 2005, barrier weir trap monitoring (conducted with videography as fish pass through the ladder) has documented an average of 52 natural-origin (54 total combining natural-origin and hatchery fish) adult steelhead for the months of June through August. In addition, over the past three years from 2002 through 2005 the Coleman NFH documented an average of 35 natural-origin (221 total combining natural-origin and hatchery fish) adult steelhead present in the month of October. For the purpose of this EA, it is assumed that these fish are present during the month of September. Between 2002 and 2004,

the Service rotary screw trap data estimated an average of 1,410 outmigrants in June, 28 outmigrants in July, and no juveniles for the months of August and September.

Currently, natural- and hatchery-origin steelhead are included in the Central valley ESU. The Endangered Species Act (ESA) listing of this ESU is being reevaluated by the NOAA and the listing is expected to include hatchery and natural-origin steelhead but exclude resident rainbow trout. Due to the pending nature of the listing decision, effects of the proposed action on natural-origin, hatchery-origin, and resident rainbow trout are assessed.

The proposed action or alternative 3 could temporarily adversely affect salmonid individuals and their EFH in the following ways:

- Accidental spill of construction-related or hazardous materials.
- Increased sedimentation or erosion.
- Impeding upstream adult escapement and juvenile outmigration.
- Direct disturbance of spawning and rearing habitat by dewatering Battle Creek.

Impacts from an accidental spill of construction-related or hazardous materials, and increased sedimentation or erosion, are contained in the Water Quality section.

Adult and juvenile spring-run Chinook salmon and steelhead could experience short-term delays in migration during diversion of Battle Creek flow through the diversion channel. Adult upstream migration delays can only occur in June and July since current fishery management protocols for Battle Creek call for the closure of the barrier weir ladder on August 1. Impacts to migration are not expected since the diversion channel is designed and would be constructed in such a way that volitional upstream passage of adults and downstream passage of juveniles is encouraged. Fishery biologists from the DFG, the Service, and the NMFS were consulted regarding diversion channel design parameters. In addition, adult and juvenile salmonids could potentially become stranded during dewatering. To prevent possible impacts of stranding, fishery biologists would assess the dewatering process. If fish become stranded a fish rescue operation would be implemented using beach seines or electroshockers, if necessary.

No spawning occurs during the in-stream construction window. Spawning habitat quality and quantity could potentially increase since the proposed action or alternative 3 require a portion of the spawning-sized gravel used for the construction of cofferdams to be kept in-stream after construction.

Approximately 360 feet of potential rearing habitat would be affected by removal of approximately one-tenth of an acre of riparian vegetation. During the construction window, limited juvenile rearing is likely to occur because of high water temperatures. Vegetation removal could result in a short-term, temporary reduction of rearing habitat, but the amount of vegetation removed is a small fraction of total habitat available near the proposed action. After

completion of the proposed action, the affected riparian habitat would be replanted such that long-term effects would be minimal or non-existent.

The BMPs to avoid or minimize adverse affects to water quality and montane riparian vegetation described in this EA will also avoid or minimize adverse affects to fish. Most importantly, all in-stream work would be conducted between June 1 and September 30, when the presence of adult and juvenile listed salmonids is minimized.

The limited in-stream work period, the fish rescue, and the water quality and riparian conservation measures and BMPs that would be incorporated as part of the project to avoid or minimize potentially adverse effects of the proposed action or alternative 3 on salmonid populations as a whole and EFH, to less than significant levels.

The No-Action Alternative would allow the undesirable upstream movement of fall Chinook salmon. Hybridization of fall and spring Chinook potentially could occur with the No-Action Alternative. Fall and spring Chinook redd superimposition as well as overuse of rearing habitat could also occur with the No-Action Alternative.

Green Sturgeon

The Service's monitoring on Battle Creek has indicated that green sturgeon are not present. Therefore, the proposed action or alternative 3 would have no impact on this species.

No impacts would occur under the No-Action Alternative.

Delta Smelt

The Service's monitoring on Battle Creek has indicated that delta smelt are not present. Therefore, the proposed action or alternative 3 would have no impact on this species.

No impacts would occur under the No-Action Alternative.

Wildlife

The proposed action or alternative 3 have the potential to affect special-status wildlife species and their habitat. However, the numerous construction-related design features and BMPs that are incorporated into the project would reduce potential impacts to levels that are less than significant. The conservation measures and BMPs are described in detail for each species.

Valley Elderberry Longhorn Beetle

On March 3, 2005, a valley elderberry longhorn beetle (VELB) survey was conducted according to the Service conservation guidelines (revised July 9, 1999). The survey identified one grove of elderberry shrubs that could be impacted by the proposed action. All elderberry shrubs contained within the grove were counted and the diameter of each stem (equal to or greater than 1-inch in diameter) was measured. A total of 87 shrubs were surveyed and all shrubs were

located in one grove located on the north side of Battle Creek, just east (upstream) of the barrier weir. In addition to measuring and counting stems, all stems were examined for VELB exit holes. No exit holes were observed on any of the shrubs.

The proposed action or alternative 3 would avoid adversely affecting the elderberry shrubs and the VELB. Where possible, a 100-foot no-disturbance buffer between shrubs and construction activities would be established. Where construction activities would occur within the 20 to100-foot range (e.g., driving construction vehicles along access roads), the shrubs would be physically separated by the existing paved roads, the addition of construction fencing to the north, the creek to the south, and a deep drainage swale to the west of the shrubs. Adverse effects to the elderberries would be avoided by the proposed action or alternative 3 due to the following physical characteristics of the site and the physical barriers:

1) All construction activity would be outside the drip line of the elderberries. There would be no disturbance of the elderberries' root system.

2) North of the elderberries - Access roads being used for construction are 30 feet to the north on existing paved surfaces.

3) South of the elderberries - Battle Creek lies to the south of the elderberries and provides a natural barrier.

4) East of the elderberries - The temporary cofferdams 30 feet upstream and the diversion dam 80 to 100 feet upstream (east) of the elderberries would be built of clean, washed spawning gravel. When the spawning gravel is placed for the cofferdams, it would release a negligible amount of dust.

5) West of the elderberries – A deep drainage swale exists west of the elderberries. The swale is expected to be wetted. The swale is difficult to negotiate with equipment due to the grade change; the elderberries are 5 feet higher in elevation than the bottom of the swale and the limit of the contractor's grading. In addition, the contractor is not likely to risk violating the Clean Water Act permitting restrictions on turbidity by entering the drainage swale or causing movement of mud or turbid water into Battle Creek. The elderberries would be within a signed and fenced contractor exclusion area. The exclusion area is also noted on the plans and in the specifications.

Conservation measures and BMPs incorporated as part of the project include:

- All disturbed areas would be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or tarp or other suitable cover or vegetative ground cover.

- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities would be effectively controlled of fugitive dust emissions by applying water or by pre-soaking.

- Following the addition of materials to, or the removal of materials from the surface of outdoor storage piles, said piles would be effectively stabilized of fugitive dust emissions using sufficient water or chemical stabilizer/suppressant.

- Brightly-colored construction fencing would be placed around the one elderberry grove to avoid disturbance.

- Signs would be erected every 50 feet along the edge of the avoidance area with the following information: *"This area is the habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. The Endangered Species Act of 1973, as amended, protects this species. Violators are subject to prosecution, fines, and imprisonment."*

- An environmental education program would be presented to all construction personnel to brief them on the status of the VELB, the need to avoid impacts to the beetle and its habitat, and the penalty for not complying with these requirements.

Combined with the physical barriers, the conservation measures and BMPs incorporated as part of the project to avoid or minimize potentially adverse effects to the VELB, if present, and its habitat would reduce the effects of the proposed action or alternative 3 to less than significant levels.

No impacts would occur under the No-Action Alternative.

California Red-Legged Frog

A review of the California Natural Diversity Database (CNDDB) indicated no occurrence of the species within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a low potential for this species to be present within the project area. The survey determined that habitat is not ideal for the California red-legged frog (CRLF) since the area contains no emergent vegetation, little bank cover, water that is fairly fast-moving, and has a fluctuating water level. In their February 3, 2006 memo, the Sacramento Fish and Wildlife Office of the Service concluded that the project area does not support suitable breeding habitat for this species. Further, although the Battle Creek Wildlife Area, within one mile of the project area, contains suitable CRLF habitat, including several ponds with emergent vegetation (cattails and duckweed) surrounded by willow and blackberry, existing paved roads, fish ladders, fences and other facilities for the Coleman NFH provide a buffer and potential barrier between the habitat and the project area. The physical buffers and barriers, the lack of suitable CRLF habitat in the project area, and the low potential for the CRLF to be within the project area reduce potential impacts to levels that are less than significant.

No impacts would occur under the No-Action Alternative.

Foothill Yellow-Legged Frog

A search of the CNDDB indicated no occurrence of the foothill yellow-legged frog (FYLF) within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a medium potential for this species to be present within the project area. The survey determined that there is suitable habitat within the project area for this species. In addition, the Battle Creek Wildlife Area, within one mile of the project area, also contains suitable FYLF habitat.

Pre-construction surveys would be conducted and if any frogs are found they would be relocated by a qualified biologist to the nearest suitable habitat outside impacted areas. In addition, another survey would be conducted when Battle Creek is dewatered. If FYLF are present they would be removed and placed upstream. As part of the project, the FYLF habitat disturbed by the proposed action or alternative 3 would be restored after construction is completed.

The pre-construction surveys and relocation efforts that would be implemented as part of the project to avoid or minimize potentially adverse effects to the FYLF, if present, and its habitat would reduce the effects of the proposed action or alternative 3 to less than significant levels.

No impacts would occur under the No-Action Alternative.

Western Spadefoot Toad

A review of the CNDDB indicated no occurrence of the western spadefoot toad within or near the project area. On September 8, 2005, a habitat survey site assessment determined that there is not a potential for this species to occur within the project area since suitable habitat is not present. The Battle Creek Wildlife Area, within one mile of the project area, does contain suitable habitat for the species. Due to the absence of suitable habitat in the project area, the proposed action or alternative 3 would have no effect on the western spadefoot toad.

No impacts would occur under the No-Action Alternative.

Northwestern Pond Turtle

A review of the CNDDB indicated no occurrence of the northwestern pond turtle (NPT) within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a medium potential for this species to be present within the project area. The survey determined that no suitable habitat for this species is found within the project area. The Battle Creek Wildlife Area, within one mile of the project area, does contain suitable NPT habitat including several ponds with emergent vegetation (cattails and duckweed) surrounded by willow and blackberry. As part of the project, to avoid or minimize potentially adverse effects to the NPT, if present, a pre-construction survey would be conducted. If turtles are observed, they would be relocated by a qualified biologist to the nearest suitable habitat outside the impact area. The pre-construction surveys and relocation efforts that would be implemented as part of the project to avoid or minimize potentially adverse effects to the NPT, if present, and its habitat would reduce the effects of the proposed action or alternative 3 to less than significant levels.

No impacts would occur under the No-Action Alternative.

Bald Eagle

During the 2005 breeding season, an active bald eagle nest was located approximately 1,100 feet to the west of the project area, on the south bank of Battle Creek. Over the past decade, this eagle nest location has changed multiple times and in some years the active nest has been greater than ½ mile from the project area. The following conservation measures are incorporated into the project description as a result of informal consultation with the Service pursuant to section 7 of the Endangered Species Act:

- Conduct surveys in early March, late April to early May, and mid June. If an active nest is located greater than ½ miles from the project area, it is assumed that the proposed action would have no effect on bald eagles.

- If a bald eagle nest becomes active within the project area, or within a ½ mile buffer zone, after construction has begun, California DFG and the Service will be contacted. The Deputy Assistant Field Supervisor for the Endangered Species Division of the Service can be contacted at 916-414-6600;

- If a bald eagle nest becomes active within a ½ mile buffer of the project area, construction activity will begin no earlier than 8:00am each day from February 1 through July 31 of each year; or

- If a bald 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 should 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 8:00am each day from February 1 through July 31 of each year.

The conservation measures incorporated as part of the project to avoid or minimize potentially adverse effects would reduce the effects of the proposed action or alternative 3 on the bald eagle

to less than significant levels.

No impacts would occur under the No-Action Alternative.

Golden Eagle

A search of the CNDDB and personal communications with staff at the Coleman NFH determined that golden eagles are not currently found within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a medium potential for this species to be present within the project area. The survey determined that no suitable habitat for this species is found within the project area, but the area could be used for foraging. Within one mile suitable habitat occurs with valley and foothill grassland and oak woodland habitat. The following measures would be implemented as a part of the project:

- Conduct surveys in early March, late April to early May, and mid June. If an active nest is located greater than ½ mile from the project area it is assumed that the proposed action would have no effect on golden eagles.

- If a golden eagle nest becomes active at the project area or within a ½ mile buffer zone after construction has begun, a biologist would monitor the active nest during construction. If the nesting birds appear to be negatively impacted by construction, the Service and the DFG would be contacted.

- If an active nest is within ½ mile of the project area prior to the construction season the Service and the DFG would be notified and directions regarding how to proceed with implementation would be discussed. In this scenario, construction may have to be conducted during the non-breeding season.

The proposed action or alternative 3 is not expected to affect the golden eagle since there is no habitat for the species in the project area. The conservation measures implemented as part of the project to avoid or minimize potentially adverse effects to the golden eagle would reduce the effects of the proposed action or alternative 3 to levels that are less than significant.

No impacts would occur under the No-Action Alternative.

Cooper's Hawk

A review of the CNDDB and personal communications with staff at the Coleman NFH determined that Cooper's hawk is not present within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a medium potential for this species to be present within the project area. The survey determined that suitable habitat for this species is found directly adjacent to Battle Creek. Within one mile, suitable habitat exists along the entire length of Battle Creek. The following measures would be implemented as part of the project:

- Conduct surveys in early March, late April to early May, and mid June. If an active nest

is located greater than ¼ mile from the project area it is assumed that the proposed action would have no effect on the Cooper's hawk.

- If a Cooper's hawk nest becomes active at the project area or within a ¼ mile buffer zone after construction has begun, a biologist would monitor the active nest during construction. If the nesting birds appear to be negatively impacted by construction, the Service and the DFG would be contacted.

- If an active nest is within ¼ mile of the project area prior to the construction season the Service and the DFG would be notified and directions regarding how to proceed with implementation would be discussed. In this scenario, construction may have to be conducted during the non-breeding season.

In addition to the above measures, all impacted habitat for this species would be fully restored following completion of construction.

The conservation measures implemented as part of the project to avoid or minimize potentially adverse effects to the Cooper's hawk would reduce the effects of the proposed action or alternative 3 to levels that are less than significant.

No impacts would occur under the No-Action Alternative.

Osprey

A review of the CNDDB and personal communications with staff at the Coleman NFH determined that no active osprey nests are located within the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a high potential for this species to be present within the project area. The survey determined that suitable habitat for this species is found within the project area and the surrounding area. During the 2005 breeding season, two active osprey nests were located on the north bank of Battle Creek approximately 1.0 and 1.5 miles downstream of the Coleman NFH. The following measures would be implemented as a part of the project:

- Conduct surveys in early March, late April to early May, and mid June. If an active nest is located greater than ½ mile from the project area it is assumed that the proposed action would have no effect on osprey.

- If an osprey nest becomes active at the project area or within a ½ mile buffer zone after construction has begun, a biologist would monitor the active nest during construction. If the nesting birds appear to be negatively impacted by construction the Service and the DFG would be contacted.

- If an active nest is within ½ mile of the project area prior to the construction season the Service and the DFG would be notified and directions regarding how to proceed with implementation would be discussed. In this scenario, construction may have to be conducted during the non-breeding season.

In addition, all impacted habitat for this species would be fully restored following completion of construction.

The proposed action or alternative 3 are not expected to affect osprey since known nesting locations are greater than ½ mile from the area. The conservation measures implemented as part of the project to avoid or minimize potentially adverse effects to the osprey would reduce the effects of the proposed action or alternative 3 to levels that are less than significant.

No impacts would occur under the No-Action Alternative.

American Peregrine Falcon

A review of the CNDDB and personal communications with Coleman NFH staff indicated that no American peregrine falcons are located within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a medium potential for this species to be present within the project area. The survey determined that no suitable habitat for this species is found within the project area. However, this species has been observed, by DFG personnel, migrating through the nearby area, and may over-winter when waterfowl are present. The following measures would be implemented as part of the project:

- Conduct surveys in early March, late April to early May, and mid June. If an active nest is located greater than ½ mile from the project area it is assumed that the proposed action would have no effect on American peregrine falcon.

- If an American peregrine falcon nest becomes active at the project area or within a ½ mile buffer zone after construction has begun, a biologist would monitor the active nest during construction. If the nesting birds appear to be negatively impacted by construction, the Service and the DFG would be contacted.

- If an active nest is within ½ mile of the project area prior to the construction season the Service and the DFG would be notified and directions regarding how to proceed with implementation would be discussed. In this scenario, construction may have to be conducted during the non-breeding season.

The proposed action or alternative 3 are not expected to affect the American peregrine falcon since there is no habitat for the species in the project area. The conservation measures implemented as part of the project to avoid or minimize potentially adverse effects to the falcon would reduce the potential effects of the proposed action or alternative 3 to levels that are less than significant.

No impacts would occur under the No-Action Alternative.

Yellow-Breasted Chat

A review of the CNDDB and personal communications with Coleman NFH staff indicated that

no yellow-breasted chats are located within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a medium potential for this species to be present within the project area. The survey determined that suitable habitat for this species is found within the project area in the riparian habitat directly adjacent to Battle Creek. In addition, suitable habitat is found within one mile of the project area along the entire length of Battle Creek and within the Battle Creek Wildlife Area. The following avoidance and minimization measures would be implemented as part of the project:

- Vegetation removal would be conducted outside the breeding season. Vegetation removal would be kept to a minimum required for implementation.

- If vegetation removal is not possible prior to February 1, surveys would be conducted between February 1 and April 15 to locate nests that could be impacted. If breeding chats are detected, a qualified biologist would install orange barrier fencing around the riparian vegetation nesting area to protect it from damage. To minimize the potential for mortality or nest abandonment, a suitable buffer would be established around active nests during the breeding season.

- Compensate and mitigate for impacts on woody riparian habitat to ensure no net loss of habitat functions and values.

The measures that would be implemented as part of the project to avoid or minimize potentially adverse effects to the chat and its habitat would reduce the effects of the proposed action or alternative 3 to less than significant levels.

No impacts would occur under the No-Action Alternative.

Western Yellow-Billed Cuckoo

A review of the CNDDB and personal communications with Coleman NFH staff indicated that no western yellow-billed cuckoos are located within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a low potential for this species to be present within the project area. The survey determined that no suitable habitat for this species is found within the project area. However, within one mile of the project area suitable habitat does exist in several locations where the riparian area contains willows and cottonwoods. In addition, the following avoidance and minimization measures would be implemented as part of the project:

- Vegetation removal would be conducted outside the breeding season. Vegetation removal would be kept to a minimum required for implementation.

- If vegetation removal is not possible prior to the breeding season, surveys would be conducted to locate nests that could be impacted. If breeding pairs/nests are detected, a qualified biologist would install orange barrier fencing around the riparian vegetation nesting area to protect it from damage. To minimize the potential for mortality or nest abandonment, a suitable buffer would be established around active nests during the

breeding season.

- Compensate and mitigate for impacts on woody riparian habitat to ensure no net loss of habitat functions and values.

The proposed action or alternative 3 is not expected to affect western yellow-billed cuckoo since no suitable habitat within the project area. The measures that would be implemented as part of the project to avoid or minimize potentially adverse effects to the yellow-billed cuckoo and its habitat would reduce the effects of the proposed action or alternative 3 to less than significant levels.

No impacts would occur under the No-Action Alternative.

Little Willow Flycatcher

A review of the CNDDB and personal communications with Coleman NFH staff indicated that no little willow flycatchers are located within or near the project area. On September 8, 2005, a habitat site assessment was conducted and determined that there is a medium potential for this species to be present within the project area. The survey determined that suitable habitat for this species is found within the project area directly adjacent to Battle Creek. In addition, within one mile of the project area suitable habitat is present along Battle Creek and the Battle Creek Wildlife Area where willow and blackberry thickets border ponds. The following measures would be implemented as a part of the project:

- Vegetation removal would be conducted outside the breeding season. Vegetation removal would be kept to a minimum required for implementation.

- If vegetation removal is not possible prior to February 1, surveys would be conducted between February 1 and April 15 to locate nests that could be impacted. If breeding flycatchers are detected, a qualified biologist would install orange barrier fencing around the riparian vegetation nesting area to protect it from damage. To minimize the potential for mortality or nest abandonment, a suitable buffer would be established around active nests during the breeding season.

- Compensate and mitigate for impacts on woody riparian habitat to ensure no net loss of habitat functions and values.

The measures that would be implemented as part of the project to avoid or minimize potentially adverse effects to the little willow flycatcher and its habitat would reduce the effects of the proposed action or alternative 3 to less than significant levels.

No impacts would occur under the No-Action Alternative.

Vegetation

Nontidal Freshwater Permanent Emergent Habitat

Approximately 0.3 acres of emergent wetlands were delineated in the project area. The emergent wetland within the project area is manmade and serves as a settling basin for discharge of wastewater from the Coleman NFH spawning building. The wetland may be used as a settling basin for water generated during excavation of the new fish ladder complex. Upon construction completion, the basin shall be returned to its pre-construction condition. The proposed action or alternative 3 would not result in any significant affect to the form and function of the wetland.

No impacts would occur under the No-Action Alternative.

Montane Riparian

Approximately 1,600 feet of streambank (combining both the north and south banks) within the project area is montane riparian. Of the 1,600 feet, about 85 percent of the total length contains riparian vegetation, with the remaining 15 percent consisting of unvegetated riprap or components of the Coleman NFH ladder complex and public viewing area. The riparian vegetation is not considered jurisdictional waters of the United States since soil conditions and hydrology requirements were not met. However, riparian vegetation is a component of EFH and a primary constituent element of critical salmonid habitat. A field survey conducted on November 17, 2005, determined that the montane riparian habitat consists of the following plant species (in order of abundance): white alder, arroyo willow, western sycamore, grey pine, yellow willow, sandbar willow, valley oak, California grape, interior live oak, fremont cottonwood, Oregon ash, and Himalayan blackberry.

The proposed action or alternative 3 would not have significant impacts to montane riparian since only approximately 360 linear feet (approximately 0.1 acres) of montane riparian habitat would be impacted in the short-term. The amount of habitat temporarily lost is exceedingly small compared to the available habitat along Battle Creek. To avoid long-term impacts, the following measures are incorporated into the project:

- Ensure that unnecessary removal or disturbance of riparian habitat is avoided by installing construction barrier fencing between the construction site and the riparian/creek area.

- Impacts on woody riparian vegetation would be minimized by trimming trees and shrubs rather than removing entire woody plants. Where possible, shrubs and trees should be cut at least 1 foot above ground level to leave the root systems intact and allow more rapid regeneration following construction.

- Impacted riparian would be replanted with native riparian vegetation.

No impacts would occur under the No-Action Alternative.

Valley/Foothill Woodland and Forest

Valley/foothill woodland and forest is common in the project area on the terraces adjacent to Battle Creek. Construction of diversion channel access roads, the diversion channel, placement of a spoil pile, and contractor use area on the south side of Battle Creek would require valley/foothill woodlands and forest be cleared. A field survey conducted on November 17, 2005, determined that the valley/foothill woodland and forest habitat consists of the following plant species (in order of abundance): interior live oak, arroyo willow, grey pine, Himalayan blackberry, California grape, valley oak, fremont cottonwood, western sycamore, Oregon ash, California juniper, yellow willow, and California bay laurel.

The proposed action or alternative 3 would result in the temporary loss or disturbance of approximately 5.7 acres of valley/foothill woodland and forest. The amount of habitat temporarily lost is exceedingly small compared to the available habitat directly adjacent to the project area. To avoid long-term impacts, the following measures are incorporated into the project:

- Avoid and minimize impacts on valley/foothill woodland and forest habitat to the greatest extent practicable.

- Restore impacted habitat to pre-project conditions. Impacted areas would be replanted with valley/foothill woodland native vegetation and monitored for success according to guidelines mutually established with the Service, the DFG, and the BLM.

No impacts would occur under the No-Action Alternative.

Noise and Air Quality

The remote locations of the work site would preclude adverse effects on residences or other off-site, noise-sensitive land uses. The work area is isolated from all but the three residences provided by the hatchery for resident staff. Those residences are about one-quarter mile away from the work site and would be partially shielded from construction noise by the existing intervening buildings. Substantial, temporary construction noises may be created at the work site, but noise levels at the nearest residences are expected to be low. Some increase in traffic and associated noise and air emissions would occur on the roads leading to Coleman NFH, but changes would be temporary and are expected to be well within the normal ranges of noise variation on these roads.

A watering truck would be used to minimize or avoid degradation of air quality due to dust.

No changes to noise and air quality would occur under the No-Action Alternative.

Land Use and Recreation

The proposed action or alternative 3 would not alter land use or adversely affect recreational uses of the area. While some preliminary concepts for hiking trails and environmental education programs tied to the hatchery's operations and adjacent wetlands were completed a few years ago, no action has yet been taken to develop such recreational facilities beyond creating wetlands just downstream of the hatchery. No trails or interpretative signs have been developed. The existing viewing possibilities during the peak of the fall-run would remain good although some relocation of viewing sites would be required to accommodate the proposed new ladders. Public access to the ladder area would likely be prohibited during construction for safety reasons. However, an alternative, temporary access to the creek-side downstream of the barrier weir could be created, if desired, during the October spawning runs when substantial crowds are attracted by the very high densities of adult salmon below the barrier weir.

No changes to land use and recreation would occur under the No-Action Alternative.

Commercial and Recreational Fisheries

Commercial fisheries would not be affected because the work would be planned to allow normal operation of the hatchery and the scope of work for the proposed project would be developed to ensure hatchery operations continue uninterrupted.

Cultural Resources

The Service is responsible for compliance with section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations found at 36 CFR Part 800. Reclamation, acting as an agent for the Service, has conducted field work, tribal consultation, and submitted documentation to the State Historic Preservation Office (SHPO) for the project, in compliance with these regulations, as described below.

The Coleman NFH has been determined to be ineligible for inclusion in the National Register of Historic Places (National Register) as the facility has experienced considerable modifications and alterations from the original structures. This determination was made by the Service in consultation with the SHPO and constitutes a consensus determination on the significance of Coleman NFH. Reclamation concludes that, as an integral element of the Coleman NFH, the weir is also ineligible for inclusion in the National Register.

Reclamation, acting as an agent for the Service, also notified Indian tribes about this project and invited them to provide information regarding possible sites of religious or cultural significance in the APE, in compliance with section 106 of the NHPA and implementing regulations at 36 CFR Part 800.4. No responses were received from this effort.

The area of potential effects (APE) for the proposed action, or alternative 3, was systematically surveyed by Reclamation archeologists (Appendix A). No cultural resources were identified during field work, with the exception of a small lithic scatter of several flakes visible only within the side wall of an existing shallow surface scrape. This site is located on the left bank of Battle

Creek near the route of the bypass channel. Reclamation archeologists employed a system of subsurface shovel tests to further identify the presence or absence of prehistoric artifacts and to identify site boundaries. This field work led Reclamation to conclude that this archeological site is not eligible for inclusion in the National Register. This determination, the conclusion that no historic properties will be affected by the project, and accompanying documentation (Lawrence and Welch 2205) for the inventory of all impacts areas has been submitted to the SHPO for their concurrence, pursuant to the 36 CFR Part 800 regulations. Reclamation, on behalf of the Service, concluded its section 106 compliance responsibility upon receipt of a letter from the SHPO dated December 28, 2005, stating the SHPO's concurrence with Reclamation's determination that there would be no historic properties affected as a result of the proposed action.

No impacts would occur under the No-Action Alternative.

Indian Trust Assets

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

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITAs reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order.

ITAs located near the proposed action or alternative 3, but unaffected by it, are named below:

- Redding Rancheria, located about 15 air miles west of this action.

The proposed action or alternative 3 would not affect ITAs. There are no tribes possessing legal property interests held in trust by the United States in the lands or natural resources related to this action.

No impacts would occur under the No-Action Alternative.

Environmental Justice

No minority and low-income populations or communities would be disproportionately affected. The proposed site is Federal land remote from residential areas.

No impacts would occur under the No-Action Alternative.

Growth-Inducing Impacts

The project would not affect human settlement or markedly increase use of any of the proposed sites, so no growth-inducing impacts are expected.

No impacts would occur under the No-Action Alternative.

Cumulative Impacts

The proposed action or alternative 3 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 or alternative 3 would provide a ladder matching the criteria and passage capabilities planned for use on the upstream dams and it would support the development of a monitoring facility useful to both Coleman NFH operations and the proposed Battle Creek Restoration Project. 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 Coleman NFH. The improved barrier weir and ladder would be compatible with all concepts that have been proposed for modifying operations at the Coleman NFH.

No new impacts would occur under the No-Action Alternative, but the passage would remain less effective than the new ladders proposed for further upstream.

RELATED PROJECTS, PROGRAMS, ENVIRONMENTAL IMPACT STATEMENTS

A related project, mentioned in the body of this EA, is the Battle Creek Restoration Project being proposed pursuant to both the Central Valley Project Improvement Act (CVPIA; P.L. 101-575) and CALFED programs. In addition, the Service continues to consult with the NOAA Fisheries on hatchery operations under Section 7 of the Federal ESA, as amended.

CONSULTATION AND COORDINATION

The Service has conducted informal consultation with the Sacramento Fish and Wildlife Office of the Service and NOAA Fisheries under section 7 of the Federal ESA, as amended, as well as the DFG, Department of Water Resources, the Battle Creek Watershed Conservancy, other members of the Battle Creek Working Group, and members of the public (Appendices E and F). On December 16, 2005, the Service requested formal consultation with NOAA Fisheries under

section 7 of the Federal ESA, as amended, regarding listed species under their jurisdiction. On December 16, 2005, the Service requested concurrence from their Sacramento Fish and Wildlife Office under section 7 of the Federal ESA, as amended, with their determination that the proposed action is not likely to adversely affect listed species under the Service's jurisdiction. In a February 3, 2006 memorandum, the Sacramento Fish and Wildlife Office provided their concurrence that the proposed action will not adversely affect federally-listed species.

Reclamation and the Service also coordinated pursuant to the Fish and Wildlife Coordination Act (FWCA). A FWCA Report is anticipated from the Service's Sacramento Fish and Wildlife Office in April 2006. The FWCA Report is expected to state that no further recommendations are needed and include a concurrence letter from DFG.

REFERENCES

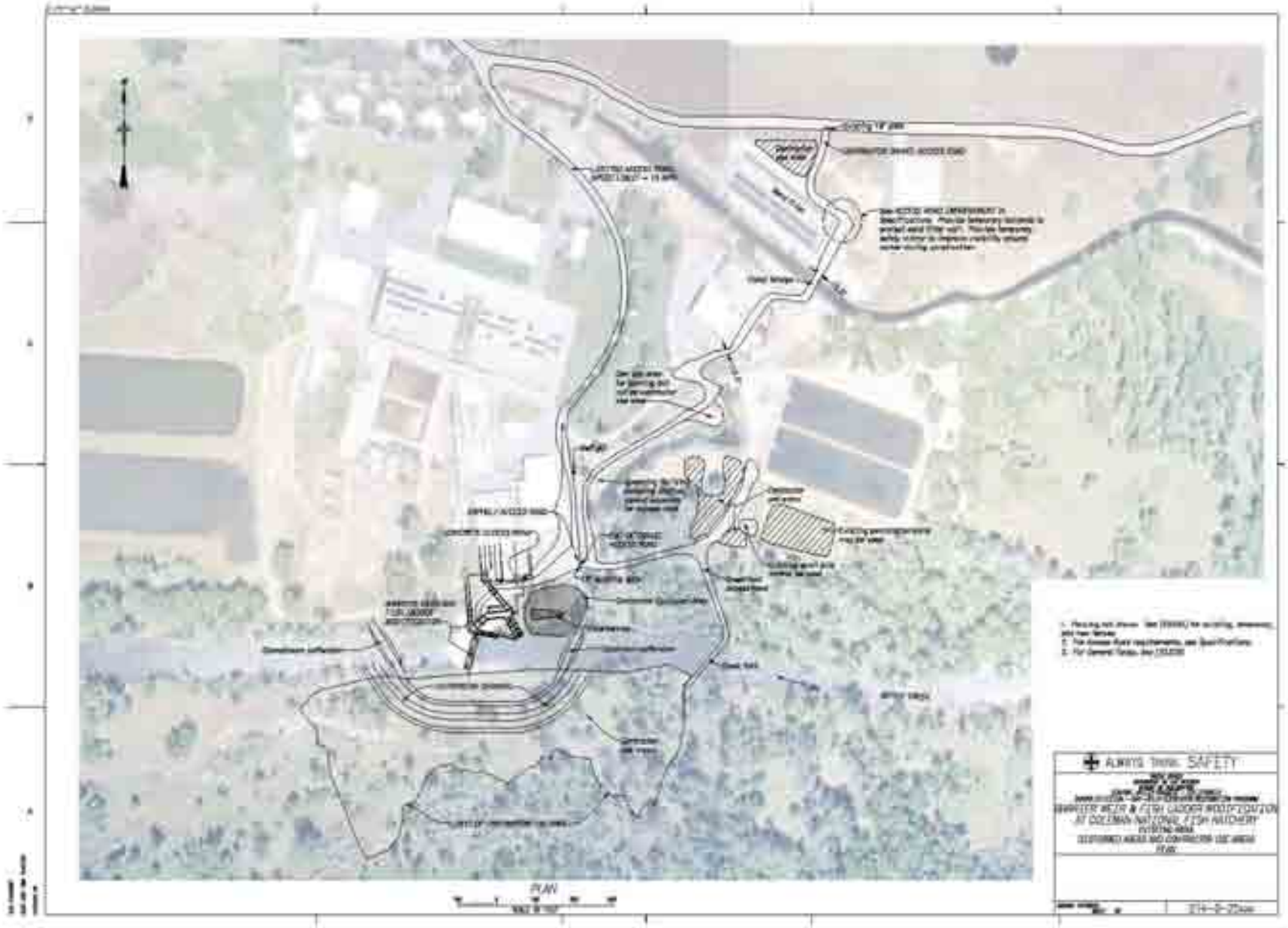
The Bureau of Reclamation and State Water Resources Control Board, Battle Creek Salmon and Steelhead Restoration Project, Draft Environmental Impact Statement/ Environmental Impact Report, Bureau of Reclamation and State Water Resources Control Board, 2003.

U.S. Fish and Wildlife Service, Biological Assessment of Artificial Propagation at Coleman National Fish Hatchery and Livingston Stone National Fish Hatchery: Program Description and Incidental Take of Chinook Salmon and Steelhead Trout, U.S. Fish and Wildlife Service, 2001.

Lawrence, Amy and Patrick Welch
Archeological Inventory of the Coleman National Fish Hatchery, Fish barrier Weir Modification Project, Tehama and Shasta Counties, California. Unpublished manuscript on file at the Mid-Pacific Region, Bureau of Reclamation, Sacramento, California, 2005.

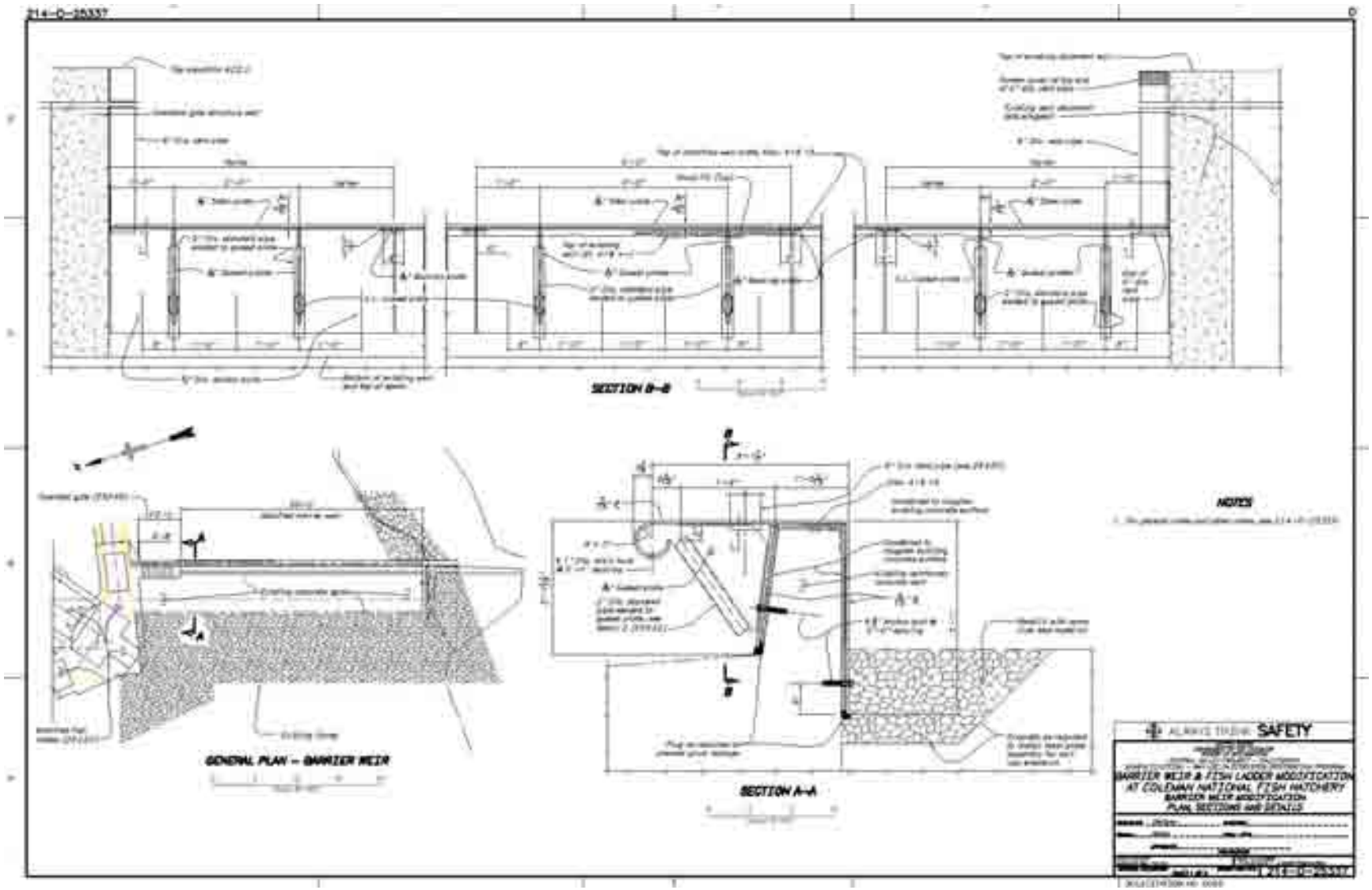
APPENDIX A

PROPOSED ACTION PLAN VIEW


ALWAYS think SAFETY
PLAN

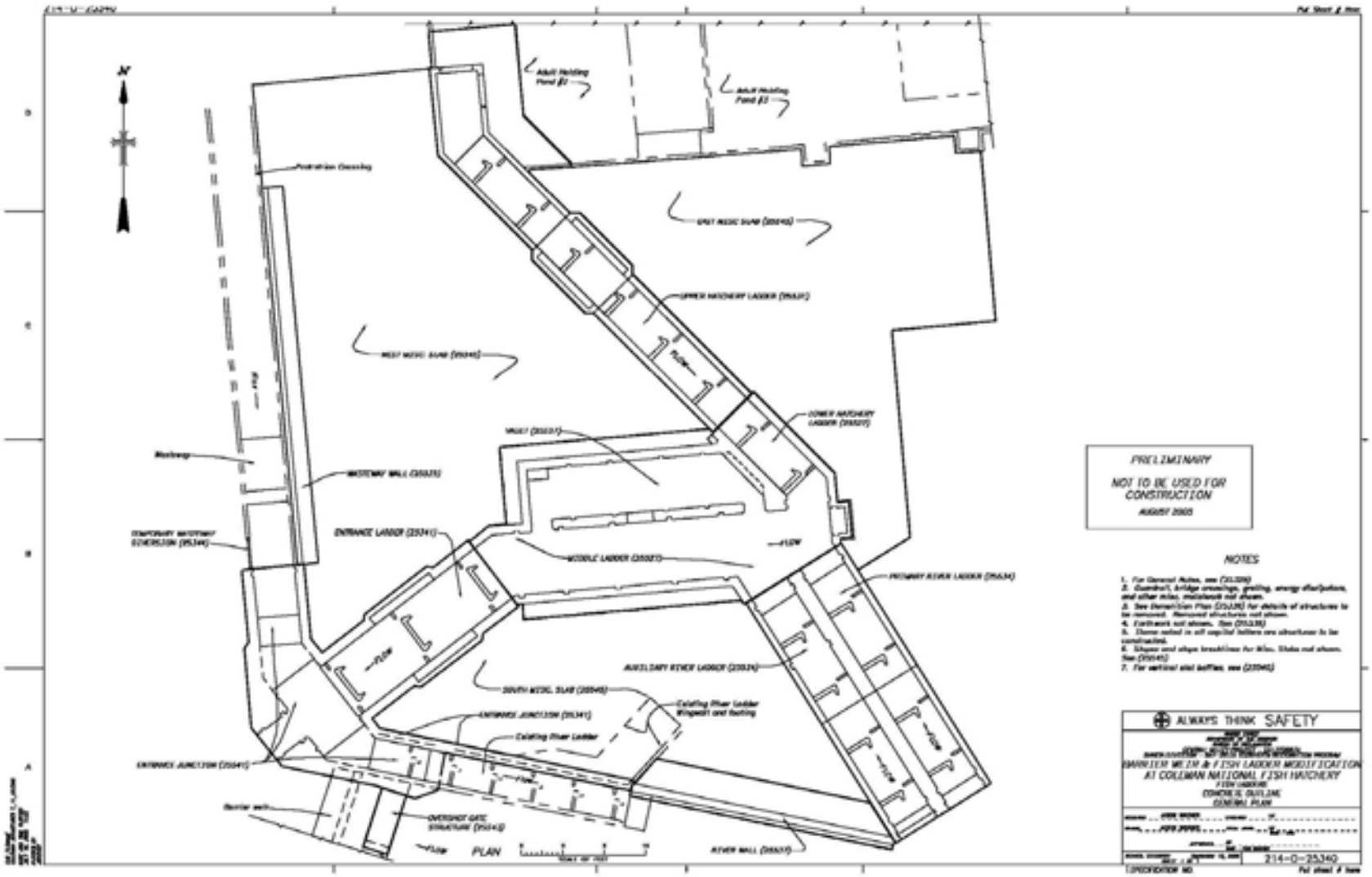
APPENDIX B

PROPOSED ACTION CROSS SECTION VIEW OF BARRIER WEIR CREST CAP AND OVERSHOT GATE


SECTION B-B
GENERAL PLAN – BARRIER WEIR
SECTION A-A
NOTES
SAFETY
BARRIER WEIR & FISH LADDER MODIFICATION
AT COLEMAN NATIONAL FISH HATCHERY
BARRIER WEIR MODIFICATION
PLAN, SECTIONS AND DETAILS

APPENDIX C

PROPOSED ACTION PLAN VIEW OF FISH LADDER MODIFICATIONS


PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION
NOTES
ALWAYS THINK SAFETY
PLAN

APPENDIX D

U.S. FISH AND WILDLIFE SERVICE AND NATIONAL MARINE FISHERIES SERVICE LISTED SPECIES FOR BALLS FERRY QUAD

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 051130021610

Database Last Updated: November 3, 2005

Quad Lists

BALLS FERRY (628B)

Listed Species

Invertebrates

Branchinecta conservatio - Conservancy fairy shrimp (E)

Branchinecta conservatio - Critical habitat, Conservancy fairy shrimp (X)

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

Branchinecta lynchi - vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus - valley elderberry longhorn beetle (T)

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

Lepidurus packardi - vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus - delta smelt (T)

Oncorhynchus mykiss - Central Valley steelhead (T)

Oncorhynchus mykiss - Critical habitat, Central Valley steelhead (X)

Oncorhynchus tshawytscha - Central Valley spring-run chinook salmon (T)

Oncorhynchus tshawytscha - Critical Habitat, Central Valley spring-run chinook (X)

Oncorhynchus tshawytscha - Critical habitat, winter-run chinook salmon (X)

Oncorhynchus tshawytscha - winter-run chinook salmon, Sacramento River (E)

Amphibians

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

Birds

Haliaeetus leucocephalus - bald eagle (T)

Plants

Orcuttia tenuis - Critical habitat, slender Orcutt grass (X)

Orcuttia tenuis - slender Orcutt grass (T)

Proposed Species

None

Candidate Species

Fish

Acipenser medirostris - green sturgeon (C)

Birds

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

Species of Concern

Invertebrates

Anthicus antiochensis - Antioch Dunes anthicid beetle (SC)

Anthicus sacramento - Sacramento anthicid beetle (SC)

Linderiella occidentalis - California linderiella fairy shrimp (SC)

Fish

Lampetra ayresi - river lamprey (SC)

Pogonichthys macrolepidotus - Sacramento splittail (SC)

Spirinchus thaleichthys - longfin smelt (SC)

Oncorhynchus tshawytscha - Central Valley fall/late fall-run chinook salmon (C)

Oncorhynchus tshawytscha - Critical habitat, Central Valley fall/late fall-run chinook (C)

Amphibians

Rana boylii - foothill yellow-legged frog (SC)

Spea hammondii (was *Scaphiopus h.*) - western spadefoot toad (SC)

Reptiles

Clemmys marmorata marmorata - northwestern pond turtle (SC)

Birds

Agelaius tricolor - tricolored blackbird (SC)

Athene cunicularia hypugaea - western burrowing owl (SC)

Baeolophus inornatus - oak titmouse (SLC)

Branta canadensis leucopareia - Aleutian Canada goose (D)

Buteo regalis - ferruginous hawk (SC)

Carduelis lawrencei - Lawrence's goldfinch (SC)

Chaetura vauxi - Vaux's swift (SC)

Cypseloides niger - black swift (SC)

Elanus leucurus - white-tailed (=black shouldered) kite (SC)

Empidonax traillii brewsteri - little willow flycatcher (CA)

Falco peregrinus anatum - American peregrine falcon (D)

Lanius ludovicianus - loggerhead shrike (SC)

Melanerpes lewis - Lewis' woodpecker (SC)

Numenius americanus - long-billed curlew (SC)

Picoides nuttallii - Nuttall's woodpecker (SLC)

Plegadis chihi - white-faced ibis (SC)

Riparia riparia - bank swallow (CA)

Selasphorus rufus - rufous hummingbird (SC)

Toxostoma redivivum - California thrasher (SC)

Mammals

Corynorhinus (=Plecotus) townsendii pallescens - pale Townsend's big-eared bat (SC)

Euderma maculatum - spotted bat (SC)

Myotis ciliolabrum - small-footed myotis bat (SC)

Myotis evotis - long-eared myotis bat (SC)

Myotis thysanodes - fringed myotis bat (SC)

Myotis volans - long-legged myotis bat (SC)

Myotis yumanensis - Yuma myotis bat (SC)

Perognathus inornatus - San Joaquin pocket mouse (SC)

Plants

Cryptantha crinita - silky cryptantha (SC)

Gratiola heterosepala - Boggs Lake hedge-hyssop (CA)

Juncus leiospermus var. leiospermus - Red Bluff (dwarf) rush (SC)

Legenere limosa - legenere (SC)

Paronychia ahartii - Ahart's whitlow-wort (=Ahart's paronychia) (SC)

Key:

- (E) Endangered - Listed (in the Federal Register) as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed (in the Federal Register) for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Marine Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (CA) Listed by the State of California but not by the Fish & Wildlife Service.
- (D) Delisted - Species will be monitored for 5 years.

- (SC) Species of Concern/(SLC) Species of Local Concern - Other species of concern to the Sacramento Fish & Wildlife Office.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

APPENDIX E

ENDANGERED SPECIES ACT SECTION 7 COMPLIANCE

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Coleman National Fish Hatchery Complex

24411 Coleman Fish Hatchery Road
Anderson, CA 96007
Phone: 530.365.8622 FAX 530.365.0913

TAKE PRIDE IN AMERICA

December 16, 2005

Memorandum:

To: Field Supervisor, U.S. Fish and Wildlife Service
Sacramento Fish and Wildlife Office, Sacramento, CA

From: Scott Hamelberg
Project Leader, Coleman National Fish Hatchery

Subject: Request for Concurrence with Effects Determination Pursuant to ESA Section 7 for Fish Barrier Weir and Ladder Modification at Coleman National Fish Hatchery, CALFED Action #99-B08

Pursuant to section 7 of the Endangered Species Act, as amended, we are requesting your office's concurrence with our determination that the construction of the Fish Barrier Weir and Ladder Modification may affect, but is not likely to adversely affect these three Federally-listed as threatened species: the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California red-legged frog (*Rana aurora draytonii*), nor the bald eagle (*Haliaeetus leucocephalus*). In addition, we request that you confirm that the above species correctly reflect the listed species under your jurisdiction that may be affected by the proposed action.

The species above were identified from a September 30, 2005, list obtained from the Service's website, in accordance with 50CFR section 402.12. Attached to this memorandum is the Action Specific Implementation Plan (ASIP) for the Coleman National Fish Hatchery Fish Barrier Weir and Ladder Modification. The ASIP supports our determination that the proposed action is not likely to adversely affect these three species. Based on the analysis in the ASIP and inclusion of best management practices and minimization and conservation measures, the Service determined that the proposed action is not likely to adversely affect the valley elderberry longhorn beetle, the red-legged frog, and the bald eagle. We have requested formal section 7 consultation with the National Marine Fisheries Service for species under their jurisdiction.

The purpose of the Fish Barrier Weir and Ladder Modification is to improve the barrier weir's fish blockage capability and the upstream ladder's fish passage capability. Modifications will result in: (1) the reduction of undesired upstream movement of fall Chinook salmon -- consistent with Battle Creek fishery management objectives; and (2) improved fish passage, consistent with that proposed as part of the independent Battle Creek Salmon and Steelhead Restoration Project. Since 2002, personnel from the Service, NOAA Fisheries, Department of Fish and Game, and Reclamation have met regularly to guide the design of the barrier weir and ladder modification.

This project, previously known as the Upstream Ladder and Barrier Weir Improvement project at Coleman NFH, was approved by the office of the Secretary of the Interior in August 1999, to benefit ecosystem restoration goals. In January 2004, the CALFED Bay Delta Authority's Science Panel concluded that without the weir modifications, the risk of undesired movement of fall Chinook salmon upstream of this site would be unacceptably high. The ladder at Coleman NFH is inconsistent with ladders designed for the Battle Creek Salmon and Steelhead Restoration Project. Without ladder modifications, the passage of target salmonid runs into upper Battle Creek could be hindered. The Science Panel's report states that, "We support the USFWS proposal to improve the effectiveness of the barrier dam and the facilities for passing fish upstream."

Accordingly, we request your concurrence with the determination that construction of the Fish Barrier Weir and Ladder Modification is not likely to adversely affect the valley elderberry longhorn beetle, the California red-legged frog, nor the bald eagle. This matter has been coordinated with A. Leigh Bartoo of your office. The Service has contracted with the Bureau of Reclamation to undertake the staff work for ESA and other environmental compliance activities. For the purposes of section 7 compliance, Sandy Osborn is the project point of contact at Reclamation. Should you or your staff have questions, please contact Ms. Osborn at 916-978-5129; email: sosborn@mp.usbr.gov or Scott Hamelberg, Project Leader, Coleman National Fish Hatchery Complex at 530-365-8622; email: scott_hamelberg@fws.gov.

Attachment

cc: w/o attachment to all)

U.S. Fish and Wildlife Service
Attention: A. Leigh Bartoo
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

U.S. Fish and Wildlife Service
Attention: Bart Prose
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

NOAA Fisheries-NMFS
Attention: Shirley Witalis
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814

Department of Fish and Game
Attention: Mike Berry
601 Locust Street
Redding, CA 96001

Bureau of Reclamation
Attention: Sandy Osborn
2800 Cottage Way, Room W-2830 (MP730)
Sacramento, CA 95825

Bureau of Reclamation
Mary Marshall
2800 Cottage Way, (MP200)
Sacramento, CA 95825

Mr. Jim DeStaso
Bureau of Reclamation, NC 311
16349 Shasta Dam Blvd.
Shasta Lake, CA 96019-8400

U.S. Fish and Wildlife Service
Attention: Jim Smith
10950 Tyler Road
Red Bluff, CA 96080

U.S. Fish and Wildlife Service
Attention: Dan Castleberry
CNO, 2800 Cottage Way
Sacramento, CA 95825

(w/o attachment to all)

United States Department of the Interior

FISH AND WILDLIFE SERVICE

TAKE PRIDE IN AMERICA

Coleman National Fish Hatchery Complex
24411 Coleman Fish Hatchery Road
Anderson, CA 96007
Phone: 530.365.8622 FAX 530.365.0913

December 16, 2005

Rodney R. McInnis
Regional Administrator
NOAA –National Marine Fisheries Service
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

Subject: Request Initiation of Formal Section 7 Consultation on the Fish Barrier Weir and Ladder Modification at Coleman National Fish Hatchery, CALFED Action #99-B08

Dear Mr. McInnis:

Pursuant to section 7 of the Endangered Species Act (ESA), as amended, the purpose of this letter is to request initiation of formal consultation with NOAA Fisheries for the Fish Barrier Weir and Ladder Modification at Coleman National Fish Hatchery on the Federally listed as endangered Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*); the threatened Central Valley spring-run Chinook salmon (*O. tshawytscha*) and its proposed critical habitat; and the threatened Central Valley steelhead (*O. mykiss*) and its proposed critical habitat. The Federal action agency is the U.S. Fish and Wildlife Service (Service). The species above were identified in lists obtained from the Service's website (database last updated September 30, 2005) in accordance with 50CFR section 402.12. In addition, we request that you confirm that the above species correctly reflect the listed species under your jurisdiction that may be affected by the proposed action.

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, as amended, we also request concurrence from NOAA Fisheries with our determination that the subject modification is not likely to adversely affect the essential fish habitat (EFH) for Pacific Salmon.

Enclosed with this letter is the Action Specific Implementation Plan (ASIP) that includes the data and analysis upon which we have based our determination of effects for the proposed action. The ASIP includes an EFH assessment, for the proposed action. The

purpose of the Fish Barrier Weir and Ladder Modification at Coleman National Fish Hatchery (NFH) is to improve the barrier weir's blockage capability and the upstream ladder's passage capability. Modifications will result in: (1) reduction of undesired upstream movement of fall Chinook salmon -- consistent with Battle Creek fishery management objectives; and (2) improved fish passage at this site resulting from fish ladder designs that are consistent with those proposed as part of the independent Battle Creek Salmon and Steelhead Restoration Project (Restoration Project). Since 2002, personnel from the Service, NOAA Fisheries, Department of Fish and Game, and Reclamation have met regularly to guide the design of the barrier weir and ladder modification.

This project, previously known as the Upstream Ladder and Barrier Weir Improvement project at Coleman NFH, was approved by the office of the Secretary of the Interior in August 1999, to benefit ecosystem restoration goals. In January 2004, the California Bay Delta Authority's Science Panel concluded that without the weir modifications, the risk of undesired movement of fall Chinook salmon upstream of this site would be unacceptably high. Additionally, the ladder at Coleman NFH is inconsistent with ladders designed for the Restoration Project, and without ladder modifications, the passage of target salmonid runs into upper Battle Creek could be hindered. The Science Panel's report states that, "We support the USFWS proposal to improve the effectiveness of the barrier dam and the facilities for passing fish upstream."

The action area supports habitat for two species (including two distinct runs of the Chinook salmon) under NOAA Fisheries' jurisdiction under the ESA: the Federally-listed-as-endangered Sacramento River winter-run Chinook salmon; and the Federally-listed-as-threatened Central Valley spring-run Chinook salmon and Central Valley steelhead. Based on the analysis in the ASIP, it is the Service's biological determination that the construction of the Fish Barrier Weir and Ladder Modification at Coleman NFH may adversely affect the spring-run Chinook salmon and the steelhead; and will have no effect on the winter-run Chinook salmon and its critical habitat in the main stem of the Sacramento River. Therefore, the Service requests formal consultation on the spring-run Chinook and steelhead and conference on the proposed critical habitat for the two species.

The Service requests the opportunity to review a draft of the biological opinion prior to the completion of the consultation process. While this matter has been coordinated with Ms. Shirley Witalis of your office, the Service also requests that NOAA Fisheries confirm their designated point of contact so that coordination can be conducted as soon as possible.

The Service has contracted with the Bureau of Reclamation to undertake the staff work for ESA and other environmental compliance activities. For the purposes of this consultation, Sandy Osborn is the project point of contact at Reclamation. Should you or your staff have questions, please contact Ms. Osborn at 916-978-5129; email: sosborn@mp.usbr.gov or Scott Hamelberg, Project Leader, Coleman National Fish Hatchery Complex at 530-365-8622; email: scott_hamelberg@fws.gov.

Sincerely,

Scott Hamelberg
Project Leader

Enclosure

cc: (w/ enclosure to all)

NOAA Fisheries—NMFS
Sacramento Area Office
Attention: Shirley Witalis
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814

Department of Fish and Game
Attention: Mike Berry
601 Locust Street
Redding, CA 96001

U.S. Fish and Wildlife Service
Attention: A. Leigh Bartoo
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

U.S. Fish and Wildlife Service
Attention: Bart Prose
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

Bureau of Reclamation
Attention: Sandy Osborn
2800 Cottage Way, Room W-2830 (MP730)
Sacramento, CA 95825

Bureau of Reclamation
Attention: Mary Marshall
2800 Cottage Way, (MP200)
Sacramento, CA 95825

Mr. Jim DeStaso
Bureau of Reclamation, NC 311
16349 Shasta Dam Blvd.
Shasta Lake, CA 96019-8400

U.S. Fish and Wildlife Service
Attention: Jim Smith
10950 Tyler Road
Red Bluff, CA 96080

U.S. Fish and Wildlife Service
Attention: Dan Castleberry
CNO, 2800 Cottage Way
Sacramento, CA 95825

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-06-I-0469

FEB 3 2006

31 | JO 2.6
921

Memorandum

To: Scott Hamelberg, Project Leader, U.S. Fish and Wildlife Service, Coleman National Fish Hatchery, Anderson, California

From: Acting Assistant Field Supervisor, Endangered Species Division, Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Informal Endangered Species Section 7 Consultation for the Fish Barrier Weir and Ladder Modification at U.S. Fish and Wildlife Service Coleman National Fish Hatchery, Shasta County, California

This is in response to your December 16, 2005, memorandum requesting concurrence with your effects determination pursuant to Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(Act) for Fish Barrier Weir and Ladder Modification at the U.S. Fish and Wildlife Service Coleman National Fish Hatchery (project). The U.S. Fish and Wildlife Service (Service) received this letter from the Coleman National Fish Hatchery (project proponent) on December 19, 2005. At issue are the potential effects of the proposed project on the federally-threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus)*, California red-legged frog (*Rana aurora draytonii*), and the bald eagle (*Haliaeetus leucocephalus*). This letter is provided pursuant to the Act.

This response is based on: (1) the December 7, 2005, Action Specific Implementation Plan (ASIP) for the project; (2) a February 23, 2005, meeting and site visit attended by representatives from the Service (hatchery and field office staff), Reclamation, and California Department of Fish and Game and a site visit on April 7, 2005, attended by representatives from the Service and Reclamation; (3) various electronic mail (email) correspondences and telephone conversations between the Service and Reclamation in June, July, August, October, November, December, 2005, and January 2006; and (4) other information available to the Service.

The proposed project is located at the Coleman National Fish Hatchery (CNFH) on Battle Creek, which is approximately six miles upstream from the confluence with the Sacramento River. The CNFH proposes to improve fish management capabilities on Battle Creek at the CNFH by modifying the existing fish barrier weir and ladder. The CNFH will accomplish this by modifying the existing barrier weir to provide safe downstream passage of adult and juvenile fish in addition to providing the capability to either block or assist in fish passage up Battle Creek.

ENV-7.00
CVP/SRD
6000298
10764

TAKE PRIDE IN AMERICA

These modifications are necessary for the CNFH to assist in the recovery of protected species by providing the capability of blocking fish migration up Battle Creek at flows up to 800 cubic feet per second (cfs) and by promoting effective and efficient selective fish passage management up Battle Creek at least equal to that provided by the proposed ladders planned for upstream dams at flows up to 3,000 cfs. The total project footprint is approximately 7.6 acres, and includes activities along Battle Creek on both the north and south banks, as well as activities in Battle Creek. The proposed project would occur in areas already developed in association with the CNFH (north bank) and Bureau of Land Management land (south bank). The riverbank adjacent to the existing barrier weir is rip-rapped with limited vegetation, although trees, shrubs, and other vegetation are present north and south of the rip-rapped area.

Your letter provided information on the project description for the proposed project. The Service has reviewed the proposed project, including the December 7, 2005, ASIP, and the January 27, 2006, email which provided amended portions of the ASIP, and concurs with your determination that the proposed project will not adversely affect federally-listed species.

An established bald eagle nest is located between ¼ and ½ mile downstream of the project. The nest is separated from the project by a visual buffer of riparian forest and oak woodlands. The January 27, 2006, email from the CNFH indicated that the following items were added to the project description:

1. Delete second bullet on page 40 of the ASIP and insert the following: "If a bald eagle nest becomes active within the project area, or within a ½ mile buffer zone, after construction has begun, CDFG and the Service will be contacted. The Deputy Assistant Field Supervisor for the Endangered Species Division of the Service can be contacted at (916) 414-6600;

2. If a bald eagle nest becomes active 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

3. If a bald 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 should 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.

A group of elderberry shrubs (*Sambucus* sp.), which are the obligate host plant for the valley elderberry longhorn beetle, occur along the north bank of Battle Creek adjacent to the CNFH, and outside the construction footprint. No elderberry shrubs would be removed as a result of the proposed project. The shrubs are approximately 25-40 feet from areas of disturbance such as access roads and construction activities near the fish ladder. However, existing paved and gravel

access roads and other physical features within the project area provide a buffer for the shrubs. Because these roads are already used as access road for the CNFH, the use will not change as a result of the implementation of the proposed project. The frequency of use is likely to change; however, the project proponent has incorporated the following measures into the project description in order to avoid and minimize take of the beetle.

1. All construction activity will take place outside of the drip line of the shrubs. There will be no disturbance of the elderberry shrubs' root systems.

2. Spawning gravel placed for the temporary cofferdam in Battle Creek will be washed and cleaned of dust and debris, such that a negligible amount of dust will be released upon placement of the gravel into Battle Creek.

3. All disturbed areas will be treated with dust abatement measures to minimize dust settlement on elderberry shrubs.

4. Construction fencing will be placed around the elderberry shrubs.

5. Signs will be erected every 50 feet along the edge of the avoidance area with the following information: *"This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. The Endangered Species Act of 1973, as amended, protects this species. Violators are subject to prosecution, fines, and imprisonment."*

6. Environmental awareness training for all construction personnel will be provided.

The project area is within the current range of the California red-legged frog; however there are no known occurrences of the California red-legged frog within or near the project area. On September 8, 2005, a habitat assessment was conducted by Reclamation and determined that there is no emergent vegetation, little bank cover, and fast moving water in an adjacent to Battle Creek. Therefore, the project site does not support suitable breeding habitat for this species. Site visits on February 23 and April 7, 2005, by Service staff concur with this assessment. Although potential habitat for the California red-legged frog exists approximately one mile west of the project area, existing paved roads, fish ladders, fences and other facilities for the CNFH provide a buffer and potential barrier between the habitat and the project area.

The Service has determined that the Coleman National Fish Hatchery Fish Barrier Weir and Ladder Modification Project as proposed is not likely to result in the take of the Valley elderberry longhorn beetle, California red-legged frog, or bald eagle. Therefore, unless new information reveals effects of the proposed action that may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Act is necessary.

If you have questions or concerns about this letter regarding the Coleman National Fish Hatchery Fish Barrier Weir and Ladder Modification Project, please contact A. Leigh Bartoo or Holly Herod of my office at (916) 414-6600.

Sincerely,

Peter A. Cross

Peter A. Cross
Deputy Assistant Field Supervisor

cc:
ARD (ES), Portland, Oregon
Shirley Witalis, NOAA Fisheries, Sacramento, California
Sandy Osborn, Bureau of Reclamation, Sacramento, California
Mary Marshall, Bureau of Reclamation, Sacramento, California
Jim DeStaso, Bureau of Reclamation, Shasta Lake, California
Mike Berry, California Department of Fish and Game, Redding, California