

# Coleman National Fish Hatchery Water Intakes Rehabilitation Project

## U.S. Fish and Wildlife Service

### Biological Opinion – Endangered Species Act Consultation

ENVIRONMENTAL RESOURCES  
CONTROL BOARD  
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United States Department of the Interior

FISH AND WILDLIFE SERVICE

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1-1-07-F-0342

**To:** Scott Hamelberg, Project Leader, Coleman National Fish Hatchery, Shasta County

**From:** *John A. Jones*  
Acting Field Supervisor, Ecological Services, Sacramento Fish and Wildlife Office, Sacramento, California

**Subject:** Formal Endangered Species Consultation on the Proposed Coleman National Fish Hatchery Water Intakes Rehabilitation Project, Shasta County, California

This is in response to your August 21, 2007, letter and supporting documentation requesting section 7 consultation for the proposed Coleman National Fish Hatchery Water Intakes Rehabilitation Project (proposed project) in Shasta County, California. Your request was received by the U.S. Fish and Wildlife Service (Service) on September 11, 2007. The Service has reviewed the proposed project for potential adverse effects to the federally-threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) and the threatened California red-legged frog (*Rana aurora draytoni*). The proposed project is not within critical habitat for federally-listed species under the jurisdiction of the Service. This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). The bald eagle (*Haliaeetus leucocephalus*) has been delisted and no longer receives protection under the Act, and will not be addressed further in this consultation. This species continues to receive protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c).

The Service has determined that the proposed project will adversely affect the valley elderberry longhorn beetle. Elderberry shrubs (*Sambucus* sp.), the sole host plant for the beetle, occur within the proposed project area and the proposed action involves the removal or transplanting of up to 14 elderberry shrubs. The California red-legged frog is not expected to occur within the proposed action area. Numerous biological surveys of the proposed action area have not detected this species and there is an abundance of non-native predators. Suitable habitat for this species does not exist within the proposed project area. The Battle Creek Wildlife Area (located 1 mile to the northwest of the project) does contain suitable California re-legged frog habitat, including several ponds with emergent vegetation. However, the proposed project would have no effect on areas within the Battle Creek Wildlife Area. Therefore, this species is not likely to be adversely affected.

TAKE PRIDE IN AMERICA

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The findings and requirements in this consultation are based on: (1) August 2007 *Coleman National Fish Hatchery Water Intakes Rehabilitation Project Action Specific Implementation Plan* (ASIP); and (2) other information available to the Service.

### **Consultation History**

*August 21, 2007:* The Service's Coleman National Fish Hatchery initiated formal intra-agency section 7 consultation with the Service's Sacramento Field Office.

*September 14, 2007:* The Service's Sacramento Field Office provided a draft biological opinion to the Bureau of Reclamation, the Bureau of Land Management and the Coleman National Fish Hatchery via electronic mail.

*September 26, 2007:* The Bureau of Reclamation provided comments on the draft biological opinion to the Service's Sacramento Field Office.

*October 2, 2007:* The Service's Coleman National Fish Hatchery provided comments on the draft biological opinion to the Service's Sacramento Field Office.

## **BIOLOGICAL OPINION**

### **Description of the Proposed Action**

The U.S. Fish and Wildlife Service's Coleman National Fish Hatchery (Coleman NFH) is on the north bank of Battle Creek, in Shasta County, California, approximately 3 miles east of the Sacramento River and 17 miles southeast of Redding. Most of the project area lies on Federal or private land north of Battle Creek (Shasta County), although some aspects of the project would occur on Federal land on the south side of Battle Creek in Tehama County. The majority of the proposed project occurs on land managed by the Bureau of Land Management (BLM).

Coleman NFH was opened in 1943 as mitigation to help preserve runs of Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead trout (*O. mykiss*) that were impacted by the loss of habitat resulting from the construction of Shasta and Keswick Dams on the Sacramento River. The hatchery was authorized under the Central Valley Project (CVP) and annually releases 12 to 14 million fish, covering two runs of salmon and one run of steelhead trout, to the Sacramento River system. Broodstock (fish from which eggs are collected) is collected at the hatchery's weir on Battle Creek and at the Keswick Dam fish trap, located upstream on the Sacramento River just north of Redding. As second hatchery (the Livingston Stone National Fish Hatchery), located at the base of Shasta Dam, is part of the Coleman National Fish Hatchery Complex. This facility rears a third run, endangered winter Chinook salmon.

Pacific Gas and Electric (PG&E) operates the Coleman Powerhouse along Battle Creek. Coleman Powerhouse flow is discharged into the Coleman Powerhouse tailrace before returning to Battle Creek approximately 1.6 miles upstream of the hatchery. There are three intakes associated with the Coleman NFH. Water for Intake 1 is drawn from the Coleman Powerhouse

tailrace, meaning that flow to the hatchery from this intake depends on reliable water discharge from the powerhouse. If this supply is interrupted and flow is not available through Intake 1, emergency backup is provided by Intake 2, which draws water directly from Battle Creek near Intake 1. Interruptions can occur because of periodic maintenance or unanticipated mechanical failure at the powerhouse. The most recent failure resulted in the powerhouse being closed for about one year. Intakes 1 and 2 share a common 46-inch-diameter concrete pipeline leading to the hatchery. Intake 3 is located directly on Battle Creek, opposite and approximately 0.4 miles downstream from Intake 2. Water diverted at Intake 3 is conveyed through a 48-inch-diameter steel pipeline to two sand settling basins.

The existing water diversion structures do not meet current requirements for fish screening as required by the National Marine Fisheries Service (NMFS) and the California Department of Fish and Game (CDFG), nor do they offer the operational redundancy that the Service feels is necessary to preserve optimal conditions for fish rearing in case of emergency shutdown of one or more facilities that influence water delivery and quality. Screening the intakes to prevent juvenile salmonid entrainment to the highest degree possible is necessary to comply with Federal regulations and to complement efforts to restore native salmonid runs throughout the Battle Creek system.

The proposed action is intended to accomplish three main objectives, while remaining within the confines of the historic (122 cfs) water allotment. These objectives include the following:

1. Meet Federal and State regulatory requirements to reduce take of listed and non-listed anadromous salmonids through application of appropriate screening criteria;
2. Provide a reliable, high quality water supply in sufficient quantity to meet hatchery operational needs; and
3. Provide sufficient access and response time to intake structures to assure proper operation and maintenance of the intake structures and the water delivery system.

The proposed project would entail a two-phased construction approach. During the first phase in years 2008 and 2009, Intake 3 would be modified to meet current screening criteria without an increase in its current design diversion capacity of 50 cfs, as required by Coleman's water rights. Intake 1 would be expanded to increase its diversion capacity to 122 cfs by extending a new pipeline with a maximum diameter of 36 inches downstream to discharge into the existing 48-inch-diameter steel pipeline from Intake 3. As part of the second phase, Intake 2 would be abandoned in place and a new screened intake (New Intake 2) with a diversion capacity of up to 122 cfs may be constructed 2,000 feet upstream on the right bank to replace Intake 2, and a new 36-inch pipeline with a maximum diameter of 66 inches would extend downstream to discharge into the existing 46-inch-diameter concrete pipeline and the new pipeline from Intake 1. New Intake 2 would replace the previous Intake 2 and would be used as an emergency water source whenever Intake 1 is offline. Intake 3 would be operated when Intake 1 and Intake 2 are not operational.

Staging areas would be constructed at Intakes 1, 2, and 3, as well as at the proposed location of the New Intake 2, near the Coleman Powerhouse. Staging areas would be cleared of vegetation as needed and could be temporarily fenced with chain link fencing to provide security for the equipment and material inside. Crushed gravel surfacing will be applied to a portion of each area for dust and erosion control. Temporary office and storage trailers will be set up at the Coleman Powerhouse and/or the Intake 3 staging area for use by the construction contractor and government personnel.

Sections of pipelines being installed underneath Battle Creek and having the potential to impact water quality and aquatic resources, will occur between May 1 and September 1 using an open cut trench. Battle Creek will be diverted to one half of its present channel with gravel and sand bag cofferdams, and possibly also with porta dams. Sheet piles will not be used for cofferdams, as the substrate of Battle Creek is not conducive to the use of such structures. Plastic sheeting will be employed to reduce sedimentation from the cofferdams. A trench will be excavated, bedding material will be placed, the pipe will be installed, embedment materials will be placed and compacted, and the pipe will be covered with excavated material. The top of the pipe will be at least five feet below the existing creek bed to ensure that the pipe remains buried as the creek channel degrades and during flood events. The upper two to three feet of backfill over the pipe will be coarse gravel and cobbles selected from the excavated material. After the pipe is placed under the first half of the creek, the cofferdam will be removed and the process will be repeated for the other half of the channel. At the conclusion of the work, the creek banks will be restored to their original shape and will be revegetated.

**Intake 1.** The Intake 1 staging area will be approximately 200 feet by 400 feet (2 acres) and will be located about 200 feet north of Intake 1. An expansion cast-in-place intake will be constructed alongside the existing intake. This work will be scheduled during low demand time which will be served through Intake 3 or possibly Intake 2. The weir replacement work will not interrupt Intake 1 service noticeably. When completed, the footprint of the facility will increase by approximately 900 square feet over the current footprint.

The pipeline between Intake 1 and the Old Intake 2 will be approximately 400 feet long. Excavation will occur along this entire distance. Construction between Intake 1 and Old Intake 2 will last for approximately six months and will include a stream crossing. The stream crossing will require dewatering a 300 feet x 100 feet stretch of stream and constructing cofferdams. The stream would be dewatered in two phases, with only half of the stream (300 feet upstream to downstream x 50 feet across the stream) being dewatered at any given time. The construction corridor and staging area will be restored upon project completion.

**Old Intake 2.** The Old Intake 2 staging area will be approximately 200 feet by 400 feet (2 acres). The staging area will be used for approximately three months and will be restored upon project completion. Construction will include excavation along a 1,500-foot corridor from expanded Intake 1 to Intake 3.

**New Intake 2.** The New Intake 2 staging area will be approximately 200 feet by 400 feet (2 acres). The staging area will occur on vacant land about 200 feet north of the site. Construction will include installing a cofferdam to construct a cast-in-place concrete intake at the bank of Battle Creek. Reclamation will also construct a fish screen structure and a 60-inch conveyance pipeline between New Intake 2 and the pipeline from Intake 1. Excavation for the conveyance pipeline will occur along a 1,200-foot corridor. Construction of the new intake and pipeline from the New Intake 2 to the tie-in with the pipeline from Intake 1 will take approximately twelve months, spread over two years. The staging area will be restored upon project completion.

**Intake 3.** Two staging areas may be required at this intake because of a restricted corridor width. One staging area will be northwest of the intake, and the other will be southwest of the intake. The staging areas will be used for twelve months over two years and will be restored upon project completion. Construction at Intake 3 will include installation of a near-stream fish screen over the mouth of the intake.

#### Valley Elderberry Longhorn Beetle within the Proposed Project Area

A field survey for elderberry shrubs in and around the project area was conducted on April 4 and 5, 2007. 20 elderberry stands or individual plants were found and mapped, of which up to 14 would be affected by the proposed project (See Appendix A, Figure A-2 of the ASIP). Most of these stands or plants contained approximately 10 to 20 stems ranging in size from 1 to 5 inches in diameter. Although several stems with exit holes were observed, the elderberry shrubs with exit holes are outside of the excavation corridor.

The proposed project would avoid disturbing elderberry shrubs and the valley elderberry longhorn beetle when possible. However, removal of up to 14 elderberry shrubs within the construction corridor may occur. The exact number of elderberry shrubs removed would be dependent on site specific conditions and engineering constraints. Elderberry shrubs that may be removed are both in riparian and non-riparian areas. Exit holes, frequently the only evidence of use by the beetle, were not detected in any of the elderberry shrubs that may be removed. Exit holes were detected in shrubs within 100 feet of proposed project activities, however, those particular shrubs are not proposed for removal.

#### **Proposed Conservation Measures**

The following environmental commitments will be applied before and during implementation of the project, where applicable. These measures are proposed in the August 2007 ASIP.

#### Develop and implement a worker environmental education program

Construction contractors, and all subcontractors, will be required to participate in and fully comply with an environmental education program. The program will include, but not be limited to, awareness training regarding: (1) Federal, State, and local environmental laws and permits, as well as the penalties for non-compliance with environmental requirements and conditions;

(2) threatened, endangered, and other special-status species and their habitats; (3) protection of cultural resources; and (4) environmental protection measures, mitigation, compensation, and restoration.

In addition, a member of the contractor's management staff will be required to participate in the training session to discuss the contractor's environmental protection plans.

Obtain and implement the conditions of the environmental permits

All applicable Federal and State permits will be obtained and the project will comply with all conditions included in those permits. Where appropriate, the permit conditions will be incorporated into the project construction plans and specifications. These permits will include, but will not be limited to, the Federal Act, CESA, and the NCCP; Clean Water Act, Section 404; Clean Water Act, Section 401; and the Regional Water Quality Control Board (RWQCB) Construction Stormwater and Dewatering Permits.

Designate work and exclusion zones

Construction equipment and activities will be confined to designated work zones, including designated access roads. Prior to construction, the work zones will be clearly flagged and staked. In addition, sensitive areas that the contractor is required to avoid will be clearly flagged or staked.

Exclusion zones for environmentally sensitive habitat or near special-status species will be mapped and also delineated in the field. Exclusion zones will be demarcated by brightly colored construction fencing or flagged ropes. Demarcations will have signs attached that identify each area as an Environmentally Sensitive Area. The fencing will be installed prior to construction and will be maintained throughout each construction season. The following paragraph will be included in the construction specifications for environmentally sensitive areas.

The contractor's attention is directed to the areas designated as "Environmentally Sensitive Areas." These areas are protected, and no entry by the contractor for any purpose will be allowed unless specifically authorized. The contractor shall take measures to ensure that the contractor's employees do not enter or disturb these areas, including by issuing written notice to employees and subcontractors regarding compliance with restrictions for environmentally sensitive areas.

During the environmental education program, construction personnel will be informed about the importance of working only in designated work zones and the importance of avoiding all environmentally sensitive exclusion zones. During construction, job inspectors and resource monitors will ensure that construction equipment and ancillary activities avoid any disturbance of sensitive resources outside the designated work zones. Resource monitors will conduct surveys as appropriate for threatened, endangered, and special-status species. The following measures also will be implemented:



- Use and storage of construction equipment will be confined to designated work zones.
- Existing roads and access points will be used to the greatest extent possible to minimize disturbance to the environment and wildlife.
- Excavation, filling, and other earthmoving activities will be done gradually to allow wildlife to escape in advance of machinery and advancing soil.
- Staging areas, borrow material sites, parking locations, stockpile areas, disposal sites for excess earth materials resulting from construction, and storage areas will be located outside of Environmentally Sensitive Areas and will be clearly marked and monitored.

The PG&E Coleman Powerhouse tailrace will be dewatered. Dewatering the tailrace will have no effect on fish since a downstream picket weir and an upstream barrier weir prohibit movement of fish into this waterbody.

#### Implement a Fish Rescue Operation

Approximately 1.35 acres/600 linear feet of Battle Creek will be dewatered in various phases during a series of work windows beginning on May 1 and ending on September 1. Dewatering may result in adult and juvenile fish becoming stranded. The Bureau of Reclamation and the Service, in coordination and consultation with the NMFS and the CDFG, will ensure that fish biologists are onsite to implement a fish rescue operation through the use of seining or electroshocking, if necessary. The potential feasibility of net blocking Battle Creek to prevent fish movement into the dewatered section of the creek prior to cofferdam construction will be evaluated prior to dewatering activities. During dewatering, fish biologists will snorkel or dive in the impacted area to estimate the numbers and types of fish that may become stranded. Based on this information, best professional determination will be used to decide which method of fish rescue is most appropriate. Seining will initially be considered the most appropriate method of fish rescue and electroshocking discouraged to the greatest extent practicable as it can negatively impact fish and can lead to lethal take. If fish biologists determine that the use of electroshocking is necessary for the efficient and successful removal of fish, the NMFS electroshocking guidelines will be strictly followed.

The fish rescue team will consist of qualified fishery biologists with professional experience using seines and electroshockers, and teams will include 2-4 persons to facilitate efficient removal and rapid transport of fish from the dewatered area. Up to two fish rescue teams may be used to facilitate efficient fish removal, reduce handling time, lower physiological stress, and reduce potential mortality rates. If electroshocking is employed, a minimum of three passes through each stranding location will be conducted until all fish are removed. Captured juvenile fish will be placed in 5-gallon buckets. At the end of each pass, captured fish will be transferred into buckets with aerated water or into in-river holding tanks (e.g., buckets with small holes allowing freshwater infiltration). After fish are fully recovered, they will be transported downstream of the project area. All captured adult fish will be placed in appropriately sized containers and immediately transported and released upstream of the project area. All rescued

fish will be counted, measured, and recorded by species. The number and run-type of Chinook salmon and steelhead captured, and the number of fish accidentally killed prior to release, will be reported to NMFS and CDFG.

#### Implement environmental timeframes

The contractor will complete all construction-related activities in a timely manner to minimize duration and impacts to the environment, habitat, and special-status species. In addition, all activities will occur at times of the year determined to be the least detrimental to the environment and special-status species. Through coordination with NMFS and CDFG, all in-stream work is required to be conducted between May 1 and September 1 to minimize adverse effects to anadromous fish. Construction activities that could adversely affect nesting birds will be limited to the non-breeding season, if possible. Construction activities that could adversely affect bat colonies and their habitat will be limited to the non-hibernation, non-maternity colony period (August to October), if possible.

#### Storm Water Pollution Prevention Plan (SWPPP)

Before construction begins, a SWPPP (part of the National Pollution Discharge Elimination System General Construction Activity Storm Water Permit) will be prepared in coordination with the RWQCB and other regulatory agencies. The SWPPP will include the following measures to minimize erosion and sediment transport to Battle Creek:

- Incorporate BMPs such as sediment containment devices, protection of construction spoils, and proper installation of cofferdams.
- Implement post-construction site restoration.
- Contingency measures.
- Details about contractor responsibilities.
- A list of responsible parties.
- A list of agency contacts.

Measures in the plan will include, at a minimum, the following:

- Avoid or minimize work equipment operation in flowing water by constructing cofferdams and diverting all flow around the construction site.
- Staging areas will be set at least 100 feet from the top of the bank.
- Conduct all construction work according to site-specific construction plans that avoid or minimize the potential for sediment input into aquatic systems.

- Use sedimentation fences, hay bales, sandbags, water bars, and baffles.
- Minimize areas to be cleared, graded, or recontoured.
- Place construction spoils above the ordinary high water mark and protect receiving waters from potential erosion sources with sedimentation fences or other effective sediment control/retention devices.
- Cover disturbed ground with mulch and revegetate all cleared areas with native and noninvasive vegetation.

#### Spill Prevention, Control, and Countermeasures Plan

Before construction begins, a Spill Prevention, Control, and Countermeasures Plan (SPCCP) will be prepared, which includes on-site handling rules to keep construction and hazardous materials out of waterways and drainages. The goals of the SPCCP include the following:

- Prevent contamination of soils and waterways from construction and hazardous materials.
- Clean spills immediately and notify the RWQCB, NMFS, and CDFG of any spills and cleanup procedures.
- Minimize the volume of petroleum products stored onsite to the volume that can be addressed by measures in the SPCCP.
- Staging and storage areas will be outside the stream zone.
- Store hazardous materials in areas at least 100 feet from streams.
- Perform refueling and vehicle maintenance at least 100 feet from streams.
- Inspect equipment daily to ensure that seals prevent any fuel, engine oil, and other fluids from leaking.

#### Habitat mitigation and monitoring plan

A habitat mitigation and monitoring plan will be prepared to compensate for adverse effects to wetlands, to riparian and upland vegetation, or from other ground-disturbing activities. A preliminary plan will provide the U.S. Army Corps of Engineers (Corps) and the Service with sufficient information to determine the adequacy of the proposed mitigation and to issue a Section 404 permit. The Corps will approve the preliminary plan prior to project construction activities that affect the Corps' jurisdictional areas in the project area. A full revegetation and grading plan will then be prepared. The plan will take into consideration the time lag between initial site restoration and mitigation and the re-establishment of function and value of habitat that was impacted or lost due to construction.

The goal of the mitigation effort is to avoid and minimize adverse effects on wetland, riparian, and upland habitat, as well as to replace the acreage, function, and values of habitat affected by the project. To support this goal, the plan will meet the following objectives:

- To the extent practicable, provide mitigation such that restored habitats have equal or better function, value, and quality than habitat impacted by implementation of the project.
- Integrate concerns for special-status species into the mitigation design to the maximum degree practicable.
- Design the mitigation such that once established it will require no maintenance.

#### Migratory Bird Treaty Act

Conservation measures that will be implemented for the protection of migratory birds include the following:

- Construction footprints should be kept as small as possible.
- Known or potential nesting and roosting sites such as live trees with cavities and all snags and stumps should be protected to the extent practicable year-round.
- Existing nests of raptors or any other bird should not be removed from their locations.
- Construction activities that could adversely affect known nesting birds and rearing of young through the take of a nest, impact nesting habitat, or cause a disturbance from noise or human activity should be limited to the period between September 1 and February 1 to avoid the bird breeding season.
- Any habitat providing nesting cover for birds, such as grassland, willow riparian, live oak woodland, blue oak woodland, gray pine/oak woodland, and ponderosa pine, that must be removed for project implementation should be removed between October 1 and February 1 prior to construction. This window allows for avoidance of nesting birds while also avoiding sensitive periods in the life cycle of bats that may live in the area.
- The project area should be monitored for bird nesting activity during the breeding season.
- If raptors or any other birds appear at or near the project area and attempt to nest, typical levels of noise and activity that will occur at the site during the breeding season should be sustained, such that the birds can accept or reject the site based on their assessment of the disturbance. Unless it is known that the nest site will be physically disturbed, the birds should be allowed to nest if they choose under the assumption that they will be able to tolerate construction noise and activity.

- If disturbance of a nest with eggs or young appears unavoidable, or if nesting activity such as incubation or feeding of young may be affected, a project contact at the Service and CDFG should be consulted before disturbance begins.
- If potential nesting habitat must be impacted during the breeding season, a project contact at the Service and CDFG should be consulted before disturbance begins.

If these measures cannot be implemented by February 1st of the first year of construction, the following measures will be followed:

- Within each construction year, it may be necessary to remove vegetation and begin potentially disruptive activities during the bird breeding season. If this occurs, affected areas should be surveyed by a qualified biologist prior to construction. Nesting in areas to be disturbed should be discouraged by hazing if nesting behavior or nest-building activity by birds is observed within habitat areas to be removed. After August 1, monitoring the project area for breeding behavior and activity can be discontinued.

#### Project monitoring components

The proposed project will have two monitoring components, including: (1) monitoring during project implementation to ensure that conservation measures and BMPs are implemented, and (2) post-project monitoring of site restoration and mitigation including revegetation. Details of these monitoring components are presented in Sections 7 and 8 of the August 2007 ASIP).

#### Dust Control Measures

Dust control measures will be implemented to minimize potential dust disturbance to shrubs. The following BMPs and measures will be implemented to avoid or minimize the potential effects of dust on nearby valley elderberry longhorn beetles and their habitat:

- All disturbed areas will be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or tarps or other suitable cover or vegetative ground cover.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled of fugitive dust emissions by applying water or by presoaking.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized of fugitive dust emissions using sufficient water or chemical stabilizer/suppressant.
- Brightly colored construction fencing will be placed around elderberry bushes outside of the construction corridor to create an avoidance area.

- 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."
- An environmental education program will be presented to all construction personnel to brief them on the status of the beetle, the need to avoid adverse effects to this species and its habitat, and the penalty for not complying with these requirements.

#### Compensation to Offset Habitat Loss to the Valley Elderberry Longhorn Beetle

All adversely affected valley elderberry longhorn beetle habitat would be restored to preconstruction conditions according to the Service's 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (Conservation Guidelines), unless otherwise approved by the Service. Although the actual number of elderberry shrubs that would be removed as a result of the proposed project has not yet been quantified, the project proponents will quantify the number of elderberry stems greater than 1.0 inch in diameter at ground level that would be removed and compensate per the ratios specified in the Conservation Guidelines (Table 1).

**Table 1. Compensation Ratios Based on Service Conservation Guidelines for Valley Elderberry Longhorn Beetle**

Location	Stems (maximum diameter at ground level)	Exit holes? (No/Yes)	Elderberry Seedling Ratio	Associated Native Plant Ratio
Nonriparian	Stems 1-3"	No	1:1	1:1
Nonriparian	Stems 3-5"	No	2:1	1:1
Nonriparian	Stems >5"	No	3:1	1:1
Riparian	Stems 1-3"	No	2:1	1:1
Riparian	Stems 3-5"	No	3:1	1:1
Riparian	Stems >5"	No	4:1	1:1

In the event that it is not feasible or practical to transplant elderberry shrubs, the project proponents will double the ratios specified in the Conservation Guidelines.

The project proponent will provide a report to the Service within 6 months of the completion of the proposed project detailing: (1) the number of elderberry stems greater than 1.0 inch in diameter that were destroyed; (2) the number of elderberry seedlings and associated natives that were transplanted; (3) the number of elderberry shrubs that were transplanted; (4) whether some elderberry shrubs were destroyed rather than transplanted; and (5) the long-term location of the elderberry seedlings, associated natives, and transplanted shrubs (if shrubs were transplanted).

### Status of the Species

The beetle was listed as a threatened species under the Act and critical habitat for the species was designated on August 8, 1980 (Service 1980). Two areas along the American River in the Sacramento metropolitan area have been designated as critical habitat for the beetle. Critical habitat for this species has been designated along the lower American River at Goethe and Ancil Hoffman parks (American River Parkway Zone) and at the Sacramento Zone, an area about a half mile from the American River downstream from the American River Parkway Zone. In addition, an area along Putah Creek, Solano County, and the area west of Nimbus Dam along the American River Parkway, Sacramento County, are considered essential habitat, according to the Valley Elderberry Longhorn Beetle Recovery Plan (Service 1984). These critical habitat and essential habitat areas within the American River parkway and Putah Creek support large numbers of mature elderberry shrubs with extensive evidence of use by the beetle.

Valley elderberry longhorn beetle is a medium sized (0.8 inch long) beetle that is endemic to the Central Valley of California. The beetle is found only in association with its host plant, elderberry shrubs. Adult beetles are sexually dimorphic with females having a dark metallic green to black elytra with a bright red border and males having predominantly red elytra with four dark oblong spots. Adults feed on the foliage and perhaps flowers and are present from March through early June. During this period the beetles mate, and females lay eggs on living elderberry plants. The first instar larvae bore to the center of elderberry stems where they develop for one to two years feeding on pith. Prior to forming their pupae, the elderberry wood boring larvae chew through the bark (Halstead and Oldham 1990) and then plug the holes with wood shavings. The larvae crawl back to their pupal chamber which they pack with frass (Barr 1991). In the pupal chamber, the larvae metamorphose into their pupae and then into adults where upon they emerge between mid-March through June (Barr 1991).

Population densities of the beetle are probably naturally low (Service 1984). It has been suggested, based on the spatial distribution of occupied shrubs (Barr 1991), that the beetle is a poor disperser (Collinge *et al.* 2001). Low density and limited dispersal capability cause the beetle to be vulnerable to the negative effects of the isolation of small subpopulations due to habitat fragmentation.

At the time of its listing in 1980, the beetle was known from less than 10 locations on the American River, Putah Creek and the Merced River in the Central Valley of California (Service 1980). The beetle currently inhabits the Central Valley from southern Shasta County south to Fresno County in the San Joaquin Valley (Barr 1991). There are 191 records of the beetle (largely based on exit holes) in the Central Valley (CNDDB 2006). Although records exist for Kern County (CNDDB 2006), no specimens or observations of living beetles exist that support the assertion that the species is found there (Talley *et al.* 2006).

Since the time of listing, the number of sites from which the beetle is known has increased from less than 10 to approximately 190 (CNDDB 2006), primarily due to an increased effort to look for the beetle. It should be noted that the number of records does not indicate the number of known populations. In many cases, there are multiple records from within close proximity to one

another within the same watershed or river. For example, 24 records are known from within two miles of the American River (CNDDDB 2006).

There is little information regarding range-wide population trends for the beetle. Collinge *et al.* (2001) provides the only long-term data set for the species. They surveyed for beetles at most of the sites that had previously been surveyed by Barr (1991). Both studies observed evidence of the beetle (i.e., recent exit holes) at approximately 20% of the sites examined, and 25% of the total number of elderberry groups examined at those sites (more than one elderberry group was examined at some sites). Collinge *et al.* (2001) found that while the proportions of occupancy were similar, the number of sites examined containing elderberry and the density of elderberry at sites had decreased since Barr (1991), resulting in fewer occupied sites and groups.

Exit holes, frequently the only evidence of use by the valley elderberry longhorn beetle, have been reported within the proposed project area. The proposed project area contains components that can be used by the valley elderberry longhorn beetle for feeding, resting, mating, and other essential behaviors. Therefore, the Service believes that the valley elderberry longhorn beetle is reasonably certain to occur within the action area because of the biology and ecology of the animal, the presence of suitable habitat in and adjacent to the action area, as well as reports of this species within the vicinity of the proposed project area.

### **Environmental Baseline**

Loss of riparian habitat between 1900 and 1990 in the Central Valley was about 96% in the southern portion of the Valley (Kern County to Fresno County) (16,000 acres remaining), 84% in the middle Valley (Merced County to San Joaquin County) (21,000 acres remaining) and 80% in the northern Valley (Sacramento and Solano counties to Shasta County) (96,000 acres remaining). Between 1960 and 1990, loss rates had slowed somewhat but were still high with 59% loss in the south, 65% loss in the middle, and 35% loss in the northern Central Valley (Geographic Information Center 2003).

While loss of riparian habitat has been extensive, it is unclear how much of that riparian habitat contained elderberry shrubs or was occupied by the beetle. Quantifying the loss of elderberry shrubs as a result of the agricultural and urban development over the past 200 years is near impossible. Lang *et al.* (1989) observed fewer numbers of elderberry shrubs in the lower reach (i.e., between Sacramento and Colusa) of the Sacramento River than the northern reach (i.e., Chico to Red Bluff). They attributed this difference to the loss of elderberry shrubs and riparian habitat in the southern reach of the Sacramento River as a result of extensive flood control activities such as the construction and maintenance of levees.

Over the past 25 years, the rate of riparian habitat loss has slowed significantly due to limitations in the amount of riparian habitat remaining, protections provided under the Act for the beetle (as well as other species), other regulatory protections (as discussed below), and restoration efforts. A review of the Section 7 consultations done for valley elderberry longhorn beetle provides some estimate of the amount of elderberry habitat lost since the beetles listing in 1980. During this period, the Service had authorized incidental take in the amount of 10,000 to



20,000 acres of beetle habitat, primarily for projects associated with urbanization, transportation, water management, and flood control. A number of HCPs are in development to allow for urbanization projects in the Sacramento Valley (Talley *et al.* 2006).

At the time of listing, habitat destruction was identified as one of the most significant threats to the beetle based on the 90% loss of riparian habitat in the Central Valley (Barr 1991). Riparian habitat loss has resulted in fragmented and isolated remnants of valley elderberry beetle habitat. Sub-populations of the animal confined to small habitat areas are likely vulnerable to extirpation from random, unpredictable environmental, genetic, and demographic events (Schonewald-Cox *et al.* 1983). The distances between subpopulations and the beetles limited dispersal ability could make recolonization difficult if extirpation occurred (Collinge *et al.* 2001; Talley 2005).

Development projects within Shasta County have reduced the amount of riparian habitat within the area. The majority of development within Shasta County has occurred within the City of Redding. Recently permitted projects include the Stone Creek Residential Subdivision Project, the Shastina Ranch Subdivision Project, Clover Acres Subdivision Project, the Clover Creek Village Subdivision Project, and the North Airport Business Park Project. These development projects, once built, will reduce the amount of riparian habitat within the area and will result in further fragmentation of suitable habitat for this species. Although the decline of beetle has not been quantified, the acreage of lost habitat continues to grow. Despite these impacts, city and county governments continue to implement development projects within the area.

#### **EFFECTS OF THE PROPOSED ACTION**

The proposed project would directly affect up to 14 elderberry shrubs with an unknown number of stems greater than 1.0 inch in diameter at ground level. To offset this habitat loss, the project proponent has proposed to plant elderberry seedlings and associated riparian native seedlings in accordance with the Service's 1999 Conservation Guidelines.

#### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Many activities affecting the beetle involve effects to elderberry shrubs located within riparian ecosystems adjoining or within jurisdictional wetlands. These projects will be evaluated via formal consultation between the Service and the Corps via the Federal nexus provided by section 404 of the Clean Water Act. However, a number of projects exist for which there is no need to discharge dredged or fill material into waters of the U.S. These projects, for which no section 404 permit is required, may lack a Federal nexus and thus, move forward absent formal consultation. These projects pose a significant threat to the recovery of the valley elderberry longhorn beetle. This loss of habitat negatively affects the environmental baseline and is difficult to quantify.

## **Conclusion**

The Service has reviewed the current status of the valley elderberry longhorn beetle, the environmental baseline for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects. It is the Service's biological opinion that the Coleman National Fish Hatchery Water Intakes Rehabilitation project, as proposed, is not likely to jeopardize the continued existence of the valley elderberry longhorn beetle. The proposed project is not within critical habitat for the valley elderberry longhorn beetle, and therefore, critical habitat for this species will not be adversely modified.

## **INCIDENTAL TAKE STATEMENT**

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), take that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such take is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Service will regulate the activity covered by this incidental take statement. If the Service: (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document; and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

### **Amount or Extent of Take**

Upon implementation of the following reasonable and prudent measures, the following levels of incidental take of the valley elderberry longhorn beetle will be exempted from prohibitions of take under section 9 of the Act.

The Service anticipates incidental take of the valley elderberry longhorn beetle will be difficult to detect or quantify. The cryptic nature of this species and its relatively small body size make the finding of a dead specimen unlikely. The species occur in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of individuals that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as the

number of elderberry stems greater than 1.0 inch in diameter at ground level that will become unsuitable as a result of the action. Therefore, the Service anticipates that all valley elderberry longhorn beetles inhabiting up to the 14 elderberry shrubs will be taken as a result of the proposed project. The incidental take associated with the proposed action on valley elderberry longhorn beetle is hereby exempted from prohibitions of take under section 9 of the Act.

### **Effect of the Take**

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the listed species in this biological opinion. This action will not result in destruction or adverse modification of proposed or designated critical habitat.

### **Reasonable and Prudent Measures**

The following reasonable and prudent measures are necessary and appropriate to minimize the adverse effects of the project on the valley elderberry longhorn beetle:

1. The effects to the valley elderberry longhorn beetle resulting from habitat modification and habitat loss shall be minimized.
2. The effects to the valley elderberry longhorn beetle from project construction shall be minimized.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the project applicant must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

The following terms and conditions implement reasonable and prudent measures one (1) and two (2):

1. The Service will adhere to the conservation measures outlined in the August 2007 ASIP and the measures described in the proposed project description of this biological opinion (pages 6-12).
2. If necessary, all transplanted elderberry shrubs, elderberry shrub seedlings, and associated native seedlings will be monitored and managed per the U.S. Army Corps of Engineer's Habitat Mitigation and Monitoring Plan (HMMP), or an equivalent document, for the proposed project. This document has not yet been finalized, but will include planting series, techniques/methods, maintenance, and success criteria for the elderberry shrub transplants and seedlings (if elderberry shrubs are removed as a result of the proposed project). The Service and the Bureau of Reclamation will ensure that all conditions of the U.S. Army Corps of Engineer's monitoring and management plan are implemented.

3. The Bureau of Reclamation will ensure that a copy of this biological opinion is included within its construction documents making the primary contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion.
4. The project proponent shall comply with the reporting requirements outlined below.

### **Reporting Requirements**

The Sacramento Fish and Wildlife Office is to be notified within one working day of the finding of any dead federally-listed species or any unanticipated harm to the species addressed in this biological opinion. The Service contact person for this is the Deputy Assistant Field Supervisor (Central Valley) at (916) 414-6600 and the Resident Agent-in-charge of the Service's Law Enforcement Division at (916) 414-6660.

Any contractor or employee who during routine operations and maintenance activities inadvertently kills or injures a State-listed wildlife species must immediately report the incident to their representative. This representative must contact the California Department of Fish and Game immediately in the case of a dead or injured State-listed species. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.

### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service recommends the following conservation measures:

1. The Coleman National Fish Hatchery should continue to partnership with the Bureau of Reclamation and the Bureau of Land Management to improve riparian habitat throughout the range of the valley elderberry longhorn beetle to aid in the recovery of this species.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting federally-listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

### **REINITIATION—CLOSING STATEMENT**

This concludes formal consultation on the proposed Coleman National Fish Hatchery Water Intakes Rehabilitation Project. As provided in 50 CFR §402.16, reinitiation of formal

consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please contact Rick Kuyper, staff biologist, or the Acting Sacramento Valley Branch Chief, at (916) 414-6600, if you have any questions regarding this biological opinion on the proposed Coleman National Fish Hatchery Water Intakes Rehabilitation project.

cc:

- Mr. Dan Castleberry, U.S. Fish and Wildlife Service, Sacramento, California
- Mr. Jim Smith, U.S. Fish and Wildlife Service, Red Bluff, California
- Ms. Shirley Witalis, NOAA Fisheries-NMFS, Sacramento, California
- Mr. Jim DeStaso, U.S. Bureau of Reclamation, Sacramento, California
- Mr. Kelly Williams, U.S. Bureau of Land Management, Redding, California
- Mr. Mike Berry, California Department of Fish and Game, Redding, California
- Ms. Mary Hindgardner, Pacific Gas and Electric Company, Sacramento, California

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## LITERATURE CITED

- Barr, C.B. 1991. The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* Fisher (Insecta: Coleoptera: Cerambycidae). U.S. Fish and Wildlife Service, Sacramento, California. 134 pp.
- California Natural Diversity Data Base (CNDDDB). 2006. Rarefind. Natural Heritage Division, California Fish and Game, Sacramento, California.
- Collinge, S.K., M. Holyoak, C.B. Barr, and J.T. Marty. 2001. Riparian habitat fragmentation and population persistence of the threatened valley elderberry longhorn beetle in central California. *Biological Conservation* 100:103-113.
- 
- Gilpin, M. E. and M. E. Soule. 1988. Minimum viable populations: processes of species extinction. Pages 18-34 *In*: M. E. Soule (ed.). *Conservation biology: the science of scarcity and diversity*. Sinauer Associates, Inc., Sunderland, Massachusetts.
- Goodman, D. 1987a. The demography of chance extinction. Pages 11-19 *In*: M. E. Soul (ed.). *Conservation biology: the science of scarcity and diversity*. Sinauer Associates, Inc., Sunderland, Massachusetts.
- Halstead, J. A., and J. A. Oldham. 1990. Revision of the nearctic *Desmocerus* Audinet-Serville with emphasis on the federally threatened valley elderberry longhorn beetle (Coleoptera: Cerambycidae). Environmental Section Staff Report, Kings River Conservation District, Fresno, CA.
- Talley, T.S. 2005. Spatial ecology and conservation of the valley elderberry longhorn beetle. Ph.D. dissertation. University of California, Davis, CA.
- Talley, T. S., D. A. Piechnik, and M. Holyoak. 2006. The effects of dust on the federally threatened Valley elderberry longhorn beetle. *Environmental Management* 37:647-658.
- U.S. Fish and Wildlife Service (Service). U. S. Fish and Wildlife Service. 1980. Listing the valley elderberry longhorn beetle as a threatened species with critical habitat. **Federal Register** 45:52803-52807.
- \_\_\_\_\_. 1984. Valley Elderberry Longhorn Beetle Recovery Plan. Portland, Oregon. 62 pp.