

**Appendix A. U.S. Fish and Wildlife Service Memorandum
to the Bureau of Reclamation, Sacramento,
California**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W2605
Sacramento, California 95825

IN REPLY REFER TO:
1-1-00-SP-1576

BUREAU OF RECLAMATION OFFICIAL FILE COPY RECEIVED		
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Memorandum

To: Bureau of Reclamation, Mid-Pacific Regional Office, Sacramento, California
MP410 (Mary Marshall)

From: Chief, Endangered Species Division, Sacramento Fish and Wildlife Office,
Fish and Wildlife Service, Sacramento, California

Subject: Species List for Battle Creek Watershed in Shasta and Tehama Counties,
California

We are sending the enclosed list in response to your letter dated April 18, 2000, requesting information about endangered and threatened species (Enclosure A). These lists fulfill the requirement of the Fish and Wildlife Service (Service) to provide species lists under section 7(c) of the Endangered Species Act of 1973, as amended (Act).

The Service used the information in your letter to locate the proposed project on a U.S. Geological Survey (USGS) 7.5 minute quadrangle map. The animal species on the Enclosure A quad list are those species we believe may occur within, *or be affected by projects within*, the following USGS quads, where your project is planned: 626C, Lyonsville; 627A, Manton; 627B, Shingletown; 627D, Finley Butte; 628A, Tuscan Buttes NE; and 645D, Hagaman Gulch.

Any plants on the quad list are ones *that have actually been observed* in that quad. Plants may occur in a quad without having been observed there. Therefore we have included a species list for the whole county in which your project occurs. We recommend that you survey for any relevant plants shown on this list.

Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.

NOTICE: IF YOU DETACH
ENCLOSURE PLEASE INSERT
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INITIAL _____
DATE _____

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If a species has been listed as threatened or endangered by the State of California, but not by us nor by the National Marine Fisheries Service, it will appear on your list as a Species of Concern. *However you must contact the California Department of Fish and Game for official information about these species.* Call (916) 322-2493 or write Marketing Manager, California Department of Fish and Game, Natural Diversity Data Base, 1416 Ninth Street, Sacramento, California 95814.

Some of the species listed in Attachment A may not be affected by the proposed action. A trained biologist or botanist, familiar with the habitat requirements of the listed species, should determine whether these species or habitats suitable for them may be affected. For plants, we recommend using the enclosed Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Species (Enclosure C).

Some pertinent information concerning the distribution, life history, habitat requirements, and published references for the listed species is available upon request. This information may be helpful in preparing the biological assessment for this project, if one is required. Please see Attachment B for a discussion of the responsibilities Federal agencies have under section 7(c) of the Act and the conditions under which a biological assessment must be prepared by the lead Federal agency or its designated non-Federal representative.

Formal consultation, under 50 CFR § 402.14, should be initiated if you determine that a listed species may be affected by the proposed project. If you determine that a proposed species may be adversely affected, you should consider requesting a conference with our office under 50 CFR § 402.10. Informal consultation may be utilized prior to a written request for formal consultation to exchange information and resolve conflicts with respect to a listed species. If a biological assessment is required, and it is not initiated within 90 days of your receipt of this letter, you should informally verify the accuracy of this list with our office.

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as *critical habitat*. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal. Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, this will be noted on the species list. Maps and boundary descriptions of the critical habitat may be found in the *Federal Register*. The information is also reprinted in the *Code of Federal Regulations* (50 CFR 17.95).

Candidate species are being reviewed for possible listing. Contact our office if your biological assessment reveals any candidate species that might be adversely affected. Although they currently have no protection under the Endangered Species Act, one or more of them could be

proposed and listed before your project is completed. By considering them from the beginning, you could avoid problems later.

Your list may contain a section called *Species of Concern*. This term includes former *category 2 candidate species* and other plants and animals of concern to the Service and other Federal, State and private conservation agencies and organizations. Some of these species may become candidate species in the future.

If the proposed project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by the U.S. Army Corps of Engineers (Corps), a Corps permit will be required, under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act. Impacts to wetland habitats require site specific mitigation and monitoring. You may request a copy of the Service's General Mitigation and Monitoring Guidelines or submit a detailed description of the proposed impacts for specific comments and recommendations. If you have any questions regarding wetlands, contact Mark Littlefield at (916) 414-6580.

We appreciate your concern for endangered species. Please contact Harry Mossman, Biological Technician, at (916) 414-6650, if you have any questions about the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of Mr. Mossman at this address. You may fax requests to him at 414-6712 or 6713.

Sincerely,



fn Karen J. Miller

Attachments

ATTACHMENT A
Endangered and Threatened Species that May Occur in
or be Affected by Projects in the Selected Quads Listed Below
Reference File No. 1-1-00-SP-1576
EIR/EIS for Battle Creek Restoration, Shasta and Tehama Counties,
California
April 26, 2000

QUAD : 626C LYONSVILLE

Listed Species

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Species of Concern

Mammals

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

spotted bat, *Euderma maculatum* (SC)

California wolverine, *Gulo gulo luteus* (CA)

Sierra Nevada snowshoe hare, *Lepus americanus tahoensis* (SC)

Pacific fisher, *Martes pennanti pacifica* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

California spotted owl, *Strix occidentalis occidentalis* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

QUAD : 627A MANTON

Listed Species

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Proposed Species

Fish

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

Candidate Species

Fish

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

Species of Concern

Mammals

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

spotted bat, *Euderma maculatum* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

white-faced ibis, *Plegadis chihi* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

western spadefoot toad, *Scaphiopus hammondi* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Plants

Butte fritillary, *Fritillaria eastwoodiae* (SC)

Ahart's whitlow-wort, *Paronychia ahartii* (SC)

QUAD : 627B SHINGLETOWN

Listed Species

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Proposed Species

Fish

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

Candidate Species

Fish

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

Species of Concern

Mammals

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

spotted bat, *Euderma maculatum* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

ferruginous hawk, *Buteo regalis* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

white-faced ibis, *Plegadis chihi* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

western spadefoot toad, *Scaphiopus hammondi* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

Butte fritillary, *Fritillaria eastwoodiae* (SC)

QUAD : 627D FINLEY BUTTE

Listed Species

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Proposed Species

Fish

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

Candidate Species

Fish

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

Species of Concern

Mammals

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

spotted bat, *Euderma maculatum* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

white-faced ibis, *Plegadis chihi* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

western spadefoot toad, *Scaphiopus hammondi* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

QUAD : 628A TUSCAN BUTTES NE

Listed Species

Birds

Aleutian Canada goose, *Branta canadensis leucopareia* (T)

bald eagle, *Haliaeetus leucocephalus* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

vernal pool tadpole shrimp, *Lepidurus packardii* (E)

Plants

slender Orcutt grass, *Orcuttia tenuis* (T)

Proposed Species

Fish

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

Candidate Species

Fish

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

Species of Concern

Mammals

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

spotted bat, *Euderma maculatum* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

Birds

ferruginous hawk, *Buteo regalis* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

white-faced ibis, *Plegadis chihi* (SC)

bank swallow, *Riparia riparia* (CA)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

western spadefoot toad, *Scaphiopus hammondi* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

Antioch Dunes anthicid beetle, *Anthicus antiochensis* (SC)

Sacramento anthicid beetle, *Anthicus sacramento* (SC)

California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

valley sagittaria, *Sagittaria sanfordii* (SC)

QUAD : 645D HAGAMAN GULCH

Listed Species

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Proposed Species

Fish

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

Candidate Species

Fish

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

Species of Concern

Mammals

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

spotted bat, *Euderma maculatum* (SC)

California wolverine, *Gulo gulo luteus* (CA)

Pacific fisher, *Martes pennanti pacifica* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

Sierra Nevada red fox, *Vulpes vulpes necator* (CA)

Birds

ferruginous hawk, *Buteo regalis* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

white-faced ibis, *Plegadis chihi* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

silky cryptantha, *Cryptantha crinita* (SC)

Butte fritillary, *Fritillaria eastwoodiae* (SC)

KEY:

(E) <i>Endangered</i>	Listed (in the Federal Register) as being in danger of extinction.
(T) <i>Threatened</i>	Listed as likely to become endangered within the foreseeable future.
(P) <i>Proposed</i>	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(PX) <i>Proposed</i> <i>Critical Habitat</i>	Proposed as an area essential to the conservation of the species.
(C) <i>Candidate</i>	Candidate to become a <i>proposed</i> species.
(SC) <i>Species of</i> <i>Concern</i>	May be endangered or threatened. Not enough biological information has been gathered to support listing at this time.
(D) <i>Delisted</i>	Delisted. Status to be monitored for 5 years.
(CA) <i>State-Listed</i>	Listed as threatened or endangered by the State of California.
(*) <i>Extirpated</i>	Possibly extirpated from this quad.
(**) <i>Extinct</i> <i>Critical Habitat</i>	Possibly extinct. Area essential to the conservation of a species.

Attachment B

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) and (c) OF THE ENDANGERED SPECIES ACT

SECTION 7(a) Consultation/Conference

Requires: (1) federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species; (2) Consultation with FWS when a federal action may affect a listed endangered or threatened species to insure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the federal agency after determining the action may affect a listed species; and (3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat.

SECTION 7(c) Biological Assessment-Major Construction Activity¹

Requires federal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities. The BA analyzes the effects of the action² on listed and proposed species. The process begins with a Federal agency requesting from FWS a list of proposed and listed threatened and endangered species. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the list, the accuracy of the species list should be informally verified with our Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may proceed; however, no construction may begin.

We recommend the following for inclusion in the BA: an on-site inspection of the area affected by the proposal which may include a detailed survey of the area to determine if the species or suitable habitat is present; a review of literature and scientific data to determine species' distribution, habitat needs, and other biological requirements; interviews with experts, including those within FWS, State conservation departments, universities and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of indirect effects of the proposal on the species and its habitat; an analysis of alternative actions considered. The BA should document the results, including a discussion of study methods used, and problems encountered, and other relevant information. The BA should conclude whether or not a listed or proposed species will be affected. Upon completion, the BA should be forwarded to our office.

¹A construction project (or other undertaking having similar physical impacts) which is a major federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332(2)(C)).

²"Effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action.

Attachment C

GUIDELINES FOR CONDUCTING AND REPORTING BOTANICAL INVENTORIES FOR FEDERALLY LISTED, PROPOSED AND CANDIDATE PLANTS

(September 23, 1996)

These guidelines describe protocols for conducting botanical inventories for federally listed, proposed and candidate plants, and describe minimum standards for reporting results. The Service will use, in part, the information outlined below in determining whether the project under consideration may affect any listed, proposed or candidate plants, and in determining the direct, indirect, and cumulative effects.

Field inventories should be conducted in a manner that will locate listed, proposed, or candidate species (target species) that may be present. The entire project area requires a botanical inventory, except developed agricultural lands. The field investigator(s) should:

1. Conduct inventories at the appropriate times of year when target species are present and identifiable. Inventories will include all potential habitats. Multiple site visits during a field season may be necessary to make observations during the appropriate phenological stage of all target species.
2. If available, use a regional or local reference population to obtain a visual image of the target species and associated habitat(s). If access to reference populations(s) is not available, investigators should study specimens from local herbaria.
3. List every species observed and compile a comprehensive list of vascular plants for the entire project site. Vascular plants need to be identified to a taxonomic level which allows rarity to be determined.
4. Report results of botanical field inventories that include:
 - a. a description of the biological setting, including plant community, topography, soils, potential habitat of target species, and an evaluation of environmental conditions, such as timing or quantity of rainfall, which may influence the performance and expression of target species
 - b. a map of project location showing scale, orientation, project boundaries, parcel size, and map quadrangle name
 - c. survey dates and survey methodology(ies)
 - d. if a reference population is available, provide a written narrative describing the target species reference population(s) used, and date(s) when observations were made
 - e. a comprehensive list of all vascular plants occurring on the project site for each habitat type
 - f. current and historic land uses of the habitat(s) and degree of site alteration

- g. presence of target species off-site on adjacent parcels, if known.
 - h. an assessment of the biological significance or ecological quality of the project site in a local and regional context
5. If target species is(are) found, report results that additionally include:
- a. a map showing federally listed, proposed and candidate species distribution as they relate to the proposed project
 - b. if target species is (are) associated with wetlands, a description of the direction and integrity of flow of surface hydrology. If target species is (are) affected by adjacent off-site hydrological influences, describe these factors.
 - c. the target species phenology and microhabitat, an estimate of the number of individuals of each target species per unit area; identify areas of high, medium and low density of target species over the project site, and provide acres of occupied habitat of target species. Investigators could provide color slides, photos or color copies of photos of target species or representative habitats to support information or descriptions contained in reports.
 - d. the degree of impact(s), if any, of the proposed project as it relates to the potential unoccupied habitat of target habitat.
6. Document findings of target species by completing California Native Species Field Survey Form(s) and submit form(s) to the Natural Diversity Data Base. Documentation of determinations and/or voucher specimens may be useful in cases of taxonomic ambiguities, habitat or range extensions.
7. Report as an addendum to the original survey, any change in abundance and distribution of target plants in subsequent years. Project sites with inventories older than 3 years from the current date of project proposal submission will likely need additional survey. Investigators need to assess whether an additional survey(s) is (are) needed.
8. Adverse conditions may prevent investigator(s) from determining presence or identifying some target species in potential habitat(s) of target species. Disease, drought, predation, or herbivory may preclude the presence or identification of target species in any year. An additional botanical inventory(ies) in a subsequent year(s) may be required if adverse conditions occur in a potential habitat(s). Investigator(s) may need to discuss such conditions.
9. Guidance from California Department of Fish and Game (CDFG) regarding plant and plant community surveys can be found in Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities, 1984. Please contact the CDFG Regional Office for questions regarding the CDFG guidelines and for assistance in determining any applicable State regulatory requirements.

Endangered and Threatened Species that May Occur in or be Affected by
Projects in the Area of the Following California Counties

Reference File No. 1-1-00-sp-1576

April 26, 2000

SHASTA COUNTY

Listed Species

Birds

Aleutian Canada goose, *Branta canadensis leucopareia* (T)

bald eagle, *Haliaeetus leucocephalus* (T)

Critical habitat, northern spotted owl, *Strix occidentalis caurina* (T)

northern spotted owl, *Strix occidentalis caurina* (T)

Amphibians

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

Fish

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

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

vernal pool tadpole shrimp, *Lepidurus packardii* (E)

Shasta crayfish, *Pacifastacus fortis* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Plants

Greene's tuctoria, *Tuctoria greenei* (E)

slender Orcutt grass, *Orcuttia tenuis* (T)

Proposed Species

Fish

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

Candidate Species

Fish

McCloud River redband trout, *Oncorhynchus (=Salmo) mykiss* ssp. (C)

Klamath Mts. Province steelhead, *Oncorhynchus mykiss* (C)

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

Species of Concern

Mammals

California wolverine, *Gulo gulo luteus* (CA)

pygmy rabbit, *Brachylagus idahoensis* (SC)
pale Townsend's big-eared bat, *Corynorhinus (=Plecotus) townsendii pallescens* (SC)
Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)
spotted bat, *Euderma maculatum* (SC)
Sierra Nevada snowshoe hare, *Lepus americanus tahoensis* (SC)
American (=pine) marten, *Martes americana* (SC)
Pacific fisher, *Martes pennanti pacifica* (SC)
small-footed myotis bat, *Myotis ciliolabrum* (SC)
long-eared myotis bat, *Myotis evotis* (SC)
fringed myotis bat, *Myotis thysanodes* (SC)
long-legged myotis bat, *Myotis volans* (SC)
Yuma myotis bat, *Myotis yumanensis* (SC)
San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

little willow flycatcher, *Empidonax traillii brewsteri* (CA)
greater sandhill crane, *Grus canadensis tabida* (CA)
bank swallow, *Riparia riparia* (CA)
American peregrine falcon, *Falco peregrinus anatum* (D)
northern goshawk, *Accipiter gentilis* (SC)
tricolored blackbird, *Agelaius tricolor* (SC)
grasshopper sparrow, *Ammodramus savannarum* (SC)
Bell's sage sparrow, *Amphispiza belli belli* (SC)
short-eared owl, *Asio flammeus* (SC)
western burrowing owl, *Athene cunicularia hypugea* (SC)
American bittern, *Botaurus lentiginosus* (SC)
ferruginous hawk, *Buteo regalis* (SC)
Lawrence's goldfinch, *Carduelis lawrencei* (SC)
Vaux's swift, *Chaetura vauxi* (SC)
black tern, *Chlidonias niger* (SC)
lark sparrow, *Chondestes grammacus* (SC)
olive-sided flycatcher, *Contopus cooperi* (SC)
black swift, *Cypseloides niger* (SC)
hermit warbler, *Dendroica occidentalis* (SC)
common loon, *Gavia immer* (SC)
loggerhead shrike, *Lanius ludovicianus* (SC)
Lewis' woodpecker, *Melanerpes lewis* (SC)
long-billed curlew, *Numenius americanus* (SC)
white-faced ibis, *Plegadis chihi* (SC)
rufous hummingbird, *Selasphorus rufus* (SC)
red-breasted sapsucker, *Sphyrapicus ruber* (SC)

- Brewer's sparrow, *Spizella breweri* (SC)
- California spotted owl, *Strix occidentalis occidentalis* (SC)
- Bewick's wren, *Thryomanes bewickii* (SC)

Reptiles

- northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
- California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

- Shasta salamander, *Hydromantes shastae* (CA)
- tailed frog, *Ascaphus truei* (SC)
- foothill yellow-legged frog, *Rana boylei* (SC)
- Cascades frog, *Rana cascadae* (SC)
- western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

- rough sculpin, *Cottus asperimus* (CA)
- green sturgeon, *Acipenser medirostris* (SC)
- river lamprey, *Lampetra ayresi* (SC)
- Pit roach, *Lavinia symmetricus mitrulus* (SC)
- longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

- Trinity (=California) bristlenail, *Monadenia setosa* (CA)
- Antioch Dunes anthicid beetle, *Anthicus antiochensis* (SC)
- Sacramento anthicid beetle, *Anthicus sacramento* (SC)
- confusion caddisfly, *Cryptochia shasta* (SC)
- King's Creek ecclisomyian caddisfly, *Ecclisomyia bilera* (SC)
- California linderiella fairy shrimp, *Linderiella occidentalis* (SC)
- Shasta sideband snail, *Monadenia troglodytes* (SC)
- Siskiyou ground beetle, *Nebria gebleri siskiyouensis* (SC)
- Trinity Alps ground beetle, *Nebria sahlbergii triad* (SC)
- King's Creek parapsyche caddisfly, *Parapsyche extensa* (SC)
- Castle Crags rhyacophilan caddisfly, *Rhyacophila lineata* (SC)
- bilobed rhyacophilan caddisfly, *Rhyacophila mosana* (SC)

Plants

- Klamath manzanita, *Arctostaphylos klamathensis* (SC)
- Suksdorf's milk-vetch, *Astragalus pulsiferae* var. *suksdorfii* (SC)
- long-haired star-tulip, *Calochortus longebarbatus* var. *longebarbatus* (SC)
- Wilkins' harebell, *Campanula wilkinsiana* (SC)
- arid northern clarkia, *Clarkia borealis* ssp. *arida* (SC)
- silky cryptantha, *Cryptantha crinita* (SC)
- clustered lady's-slipper, *Cypripedium fasciculatum* (SC)

Oregon fireweed, *Epilobium oreganum* (SC)
Butte fritillary, *Fritillaria eastwoodiae* (SC)
Howell's lewisia, *Lewisia cotyledon* var. *howellii* (SC)
Bellinger's meadowfoam, *Limnanthes floccosa* ssp. *bellingermana* (SC)
Stebbins' madia, *Madia stebbinsii* (SC)
The Lassics sandwort, *Minuartia decumbens* (SC)
Ahart's whitlow-wort, *Paronychia ahartii* (SC)
thread-leaved penstemon, *Penstemon filiformis* (SC)
Trinity (Scott Mountain) phacelia, *Phacelia dalesiana* (SC)
Devil's Garden pogogyne, *Pogogyne floribunda* (SC)
Howell's alkali grass, *Puccinellia howellii* (SC)
valley sagittaria, *Sagittaria sanfordii* (SC)
Canyon Creek stonecrop, *Sedum paradisum* (SC)
Butte County (western) catchfly, *Silene occidentalis* ssp. *longistipitata* (SC)
Mt. Lassen smelowskia, *Smelowskia ovalis* ssp. *congesta* (SC)
Pit River jewelflower, *Streptanthus* sp. nov. *ined.* (Shasta Co.) (SC)

TEHAMA COUNTY

Listed Species

Birds

Aleutian Canada goose, *Branta canadensis leucopareia* (T)
bald eagle, *Haliaeetus leucocephalus* (T)
Critical habitat, northern spotted owl, *Strix occidentalis caurina* (T)
northern spotted owl, *Strix occidentalis caurina* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

Critical habitat, winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
delta smelt, *Hypomesus transpacificus* (T)
Central Valley steelhead, *Oncorhynchus mykiss* (T)
Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T)
Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

Conservancy fairy shrimp, *Branchinecta conservatio* (E)
vernal pool tadpole shrimp, *Lepidurus packardi* (E)
vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Plants

hairy Orcutt grass, *Orcuttia pilosa* (E)

Greene's tuctoria, *Tuctoria greenei* (E)

Hoover's spurge, *Chamaesyce hooveri* (T)

slender Orcutt grass, *Orcuttia tenuis* (T)

Proposed Species

Fish

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

Candidate Species

Fish

Klamath Mts. Province steelhead, *Oncorhynchus mykiss* (C)

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

Species of Concern

Mammals

California wolverine, *Gulo gulo luteus* (CA)

Sierra Nevada red fox, *Vulpes vulpes necator* (CA)

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

Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)

spotted bat, *Euderma maculatum* (SC)

Sierra Nevada snowshoe hare, *Lepus americanus tahoensis* (SC)

Pacific fisher, *Martes pennanti pacifica* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

Swainson's hawk, *Buteo Swainsoni* (CA)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

greater sandhill crane, *Grus canadensis tabida* (CA)

bank swallow, *Riparia riparia* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

northern goshawk, *Accipiter gentilis* (SC)

tricolored blackbird, *Agelaius tricolor* (SC)

grasshopper sparrow, *Ammodramus savannarum* (SC)

Bell's sage sparrow, *Amphispiza belli belli* (SC)

short-eared owl, *Asio flammeus* (SC)

western burrowing owl, *Athene cunicularia hypugea* (SC)
American bittern, *Botaurus lentiginosus* (SC)
ferruginous hawk, *Buteo regalis* (SC)
Lawrence's goldfinch, *Carduelis lawrencei* (SC)
Vaux's swift, *Chaetura vauxi* (SC)
black tern, *Chlidonias niger* (SC)
lark sparrow, *Chondestes grammacus* (SC)
black swift, *Cypseloides niger* (SC)
hermit warbler, *Dendroica occidentalis* (SC)
white-tailed (=black shouldered) kite, *Elanus leucurus* (SC)
loggerhead shrike, *Lanius ludovicianus* (SC)
Lewis' woodpecker, *Melanerpes lewis* (SC)
long-billed curlew, *Numenius americanus* (SC)
white-faced ibis, *Plegadis chihi* (SC)
rufous hummingbird, *Selasphorus rufus* (SC)
Brewer's sparrow, *Spizella breweri* (SC)
California spotted owl, *Strix occidentalis occidentalis* (SC)
Bewick's wren, *Thryomanes bewickii* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

tailed frog, *Ascaphus truei* (SC)
foothill yellow-legged frog, *Rana boylei* (SC)
mountain yellow-legged frog, *Rana muscosa* (SC)
western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)
river lamprey, *Lampetra ayresi* (SC)
longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

Antioch Dunes anthicid beetle, *Anthicus antiochensis* (SC)
Sacramento anthicid beetle, *Anthicus sacramento* (SC)
Leech's skyline diving beetle, *Hydroporus leechi* (SC)
California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

Indian Valley brodiaea, *Brodiaea coronaria ssp. rosea* (CA)
upswept moonwort, *Botrychium ascendens* (SC)
scalloped moonwort, *Botrychium crenulatum* (SC)

- Wilkins' harebell, *Campanula wilkinsiana* (SC)
 silky cryptantha, *Cryptantha crinita* (SC)
 clustered lady's-slipper, *Cypripedium fasciculatum* (SC)
 Oregon fireweed, *Epilobium oregonum* (SC)
 Brandegee's woolly-star, *Eriastrum brandegeae* (SC)
 Butte fritillary, *Fritillaria eastwoodiae* (SC)
 adobe lily, *Fritillaria pluriflora* (SC)
 Tehama dwarf-flax, *Hesperolinon tehamense* (SC)
 legenera, *Legenera limosa* (SC)
 Mt. Tedoc linanthus, *Linanthus nuttallii* ssp. *howellii* (SC)
 red-flowered lotus, *Lotus rubriflorus* (SC)
 Anthony Peak lupine, *Lupinus antoninus* (SC)
 Stebbins' madia, *Madia stebbinsii* (SC)
 The Lassics sandwort, *Minuartia decumbens* (SC)
 Ahart's whitlow-wort, *Paronychia ahartii* (SC)
 valley sagittaria, *Sagittaria sanfordii* (SC)
 Tracy's sanicle, *Sanicula tracyi* (SC)
 Butte County (western) catchfly, *Silene occidentalis* ssp. *longistipitata* (SC)

KEY:

- | | | |
|------|-------------------------|--|
| (E) | <i>Endangered</i> | Listed (in the Federal Register) as being in danger of extinction. |
| (T) | <i>Threatened</i> | Listed as likely to become endangered within the foreseeable future. |
| (P) | <i>Proposed</i> | Officially proposed (in the Federal Register) for listing as endangered or threatened. |
| (PX) | <i>Proposed</i> | Proposed as an area essential to the conservation of the species. |
| | <i>Critical Habitat</i> | |
| (C) | <i>Candidate</i> | Candidate to become a <i>proposed</i> species. |
| (SC) | <i>Species of</i> | Other species of concern to the Service. |
| | <i>Concern</i> | |
| (D) | <i>Delisted</i> | Delisted. Status to be monitored for 5 years. |
| (CA) | <i>State-Listed</i> | Listed as threatened or endangered by the State of California. |
| * | <i>Extirpated</i> | Possibly extirpated from the area. |
| ** | <i>Extinct</i> | Possibly extinct |
| | <i>Critical Habitat</i> | Area essential to the conservation of a species. |

**Appendix B. U.S. Fish and Wildlife Service Guidance on
Site Assessment and Field Surveys for
California Red-Legged Frog**

February 18, 1997
U.S. Fish and Wildlife Service
Guidance on Site Assessment and Field Surveys for California Red-legged Frogs

I. Introduction

A final rule determining threatened status for the California red-legged frog under the Endangered Species Act of 1973, as amended (Act), was published on May 23, 1996 (61 *Federal Register* 25813) and became effective on June 24, 1996. Since then the United States Fish and Wildlife Service (Service) has received numerous requests from private and government entities for guidance in planning for the protection of the California red-legged frog at the sites of proposed developments or of other land use activities. This document provides guidance for two procedures to accurately assess California red-legged frog status in the vicinity of a project site: (1) an assessment of California red-legged frog locality records and potential California red-legged frog habitat in and around the project area; and (2) focused field surveys of aquatic habitats to determine whether California red-legged frogs are present. Both procedures may be recommended because California red-legged frogs are mobile and, during different life history stages or different seasons of the year, may occupy a variety of aquatic and upland habitats. Both procedures should be incorporated into any assessment of the potential effects of projects on California red-legged frogs, unless field surveys are determined to be unnecessary based on the site assessment (see "Interpreting the results of the site assessment" section).

Ongoing contact and discussions with the Service before, during, and after site assessments and field surveys are a crucial element of this guidance. Results of the site assessment and field survey should also be reported to the Service (see "Reporting the results" sections below); however, results of the site assessment should be reported prior to proceeding with field surveys. The addresses and phone numbers of the appropriate field office are provided in section V below.

II. Site Assessment

Careful evaluation of the following information about California red-legged frogs and their habitats in the vicinity of projects or other land use activities is important because this information indicates the likelihood that California red-legged frogs may occur on the project site.

Protocol

1. Is the project site within the range of the California red-legged frog?

Because knowledge of the distribution of the California red-legged frog is likely to change as new locality information becomes available, surveyors should contact the appropriate Service field office (see section V below) to determine if a project site is within the range of this species.

2. What are the known localities of California red-legged frogs within the project site and within 8 kilometers (km) (five miles) of the project boundaries?

The surveyor should consult the Natural Diversity Data Base (NDDDB) maintained by the California Department of Fish and Game's Natural Heritage Division to determine known localities of California red-legged frogs. Information on the NDDDB is attached to the end of this

document. Other information sources on local occurrences of California red-legged frogs should be consulted. These sources may include, but are not limited to, biological consultants, local residents, amateur herpetologists, resource managers and biologists from municipal, State, and Federal agencies, environmental groups, and herpetologists at museums and universities. The surveyor should report to the Service all known California red-legged frog localities within the project site and within 8 km of the project boundaries.

3. What are the habitats within the project site and within 1.6 km (one mile) of the project boundaries?

Describe the upland and aquatic habitats within the project site and within 1.6 km of the project boundaries. The aquatic habitats should be mapped and characterized (e.g. ponds vs. creeks; pool, riffle, rootball, vegetation) The information provided in section 4 of the attached appendix serves as a guide to the features that will indicate possible California red-legged frog habitat.

Reporting the results of the site assessment. Surveyors should prepare a report that includes the following: photographs of the project site, survey dates and times, names of surveyors, a description of the methods used, and a map of the site showing habitat as requested in section II(3) above. The report should include copies of those portions of the 7.5' topographic quads that contain the site and the area within 1.6 km of its boundaries. A list of California red-legged frog localities as requested in section II(2) above should be included. The report should be provided to the appropriate Service field office (see section V below).

Interpreting the results of site assessment. After completing elements 1-3 of the site assessment above, the appropriate Service field office should be contacted for technical assistance. Based on the information provided from the site assessment, the Service will provide guidance on how California red-legged frogs should be addressed, including whether field surveys are needed or whether incidental take authorization should be obtained through section 7 consultation or a section 10(a)(1)(B) permit pursuant to the Act. A protocol for field surveys is presented below.

III. Field surveys

Frogs can be detected opportunistically in various habitats depending on weather and time of year. Aquatic sampling during the summer months is a reliable method of detecting frogs. Care should be taken to apply a level of effort and to use a style of surveying appropriate to the site. For instance, survey methods may differ according to habitat extent and type (e.g. deep pond, shallow pond, creek). In addition, field work should be conducted according to the best professional judgement of the surveyor (e.g. dogs should not be brought on surveys as they disturb frogs). The Service recommends that surveyors have field experience in the identification of California amphibians. The Service is willing to cooperate with surveyors who have specific needs not addressed by this field survey protocol and who may wish to propose alternative methods.

Protocol

1. Surveys should be conducted between May 1 and November 1. These sampling dates were selected because they allow surveys to be conducted with minimal disturbance of breeding frogs,

eggs, or tadpoles during a period when frogs can be reliably detected.

2. All aquatic habitat identified during the site assessment should be surveyed four times, twice during the day and twice at night. Surveyors should wait at least twenty-four hours and possibly longer, to meet the environmental conditions described in section III(3) below, before repeating surveys at the same site.

3. Day-surveys should be conducted on clear, sunny days. Night-surveys should be conducted on warm, still nights between one hour after sunset and 12 midnight. Warm, still nights are preferable for surveying because the probability of observing frogs tends to decrease under cold, windy conditions. In some circumstances where safety issues preclude night-surveys, the Service can provide alternatives to the surveyor on a case-by-case basis to ensure that safe surveys are conducted.

4. Surveyors should work along the entire shore (either on the bank or in the water), visually scanning all shoreline areas in all aquatic habitats identified during the site assessment. This methodology should be applied to both day- and night-surveys. In the case of water bodies covered with floating vegetation such as duckweed, both the shoreline and surface of the water should be scanned. When wading, surveyors should take maximum care to avoid disturbing sediments, vegetation, and any visible larvae. When walking on the bank, surveyors should take care to not crush rootballs, overhanging banks, and stream side vegetation that might provide shelter for frogs.

5. When conducting night-surveys for eyeshine, flashlights and headlamps that use one 6-volt or four to six D-cell batteries are recommended. High-powered spotlights are prohibited to avoid harming frogs.

6. Although not required, photographs of frogs observed during field surveys may aid in verification of species identifications. Surveyors should limit photography to the extent necessary to document the presence of California red-legged frogs and should not attempt to photograph frogs if this is likely to disturb them.

Reporting the results of field surveys. Any information on California red-legged frog distribution resulting from field surveys should be sent to the Natural Diversity Data Base (NDDB) administered by the Natural Heritage program of the California Department of Fish and Game. Information about the NDDB is attached to the end of this document. Copies of the NDDB form should be mailed immediately to both the Service and CDFG.

Surveyors should also prepare a final report that includes the following: copies of all field notes, data sheets, photographs of the project site and of frogs observed, and a typed summary providing survey dates and times (both begin and end times), names of surveyors, temperature (water and air), wind speed, a description of the methods used, numbers and size classes of all amphibians observed, a map of the site showing survey locations, habitat and frog sightings, a copy of the NDDB form, and a description of possible threats to California red-legged frogs observed at the site. The report should be provided to the appropriate Service field office (see section V below).

Interpreting the results of field surveys. Based on the results of field surveys, the Service will provide guidance on how California red-legged frog should be addressed. If California red-legged

frogs are found, the Service will work with the project proponent through the section 7 or section 10(a)(1)(B) process to determine a further course of action, including the consideration of avoidance or minimization measures and whether incidental take authorization is needed. If frogs are observed but not identified to species, additional survey effort may be recommended. If the Service recommended that field surveys be conducted and if California red-legged frogs were not identified during these field surveys conducted according to this protocol, the Service will consider the California red-legged frog not to be present on the project site and will not recommend any further take avoidance or mitigation measures. The Service may question the results of field surveys conducted under this protocol for any of the following reasons: 1) if the appropriate Service field office was not contacted prior to field surveys being conducted; 2) if field surveys were conducted in a manner inconsistent with this protocol; 3) if field surveys were incomplete; or 4) if the reporting requirements, including submission of NDDB forms, were not fulfilled.

IV. Statement on permitted activities.

This field survey protocol allows for conducting visual surveys for California red-legged frogs. Surveys following this protocol do not require a section 10(a)(1)(A) recovery permit pursuant to the Act. Activities that would require a section 10(a)(1)(A) recovery permit include: 1) any capture or handling of California red-legged frog adults, larvae, or eggs; 2) any activity intended to significantly modify the behavior of California red-legged frogs; 3) any activity that subjects California red-legged frogs to some environmental condition not naturally present (e.g. experiments designed to study a frog's response to heat, moisture, noise) other than low-level illumination for night surveys as described in section III(5); and 4) any survey methods not covered in this field survey protocol if any form of "take" would occur during such activities. All surveyors using this field survey protocol should make all possible efforts to avoid unintentionally disturbing California red-legged frogs or their habitat. Surveyors should direct inquiries about section 10(a)(1)(A) recovery permits to the Service's Regional Office (see section V below).

V. Service Contacts

For project sites and land use activities in Santa Cruz, Monterey, San Benito, San Luis Obispo, Santa Barbara, and Ventura Counties, portions of Los Angeles and San Bernardino Counties outside of the Los Angeles Basin, and portions of Kern, Inyo and Mono Counties east of the Sierra Crest and south of Conway Summit, contact:

Ventura Field Office,
2493 Portola Road, Suite B
Ventura, California, 93003
(805/644-1766).

For project sites and land use activities in all other areas of the state south of the Transverse Ranges, contact:

Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, California, 92008
(619/431-9440).

For project sites and land use activities in all other areas of the state, contact:

Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821
(916/979-2725).

For information on section 10(a)(1)(A) recovery permits, contact:

Regional Office,
Eastside Federal Complex
911 N.E., 11th Avenue
Portland, Oregon 97232-4181
(503) 231-6241.

**Appendix C. U.S. Fish and Wildlife Service Conservation
Guidelines for the Valley Elderberry
Longhorn Beetle**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

Conservation Guidelines for the Valley Elderberry Longhorn Beetle

9 July 1999

The following guidelines have been issued by the U.S. Fish and Wildlife Service (Service) to assist Federal agencies and non-federal project applicants needing incidental take authorization through a section 7 consultation or a section 10(a)(1)(B) permit in developing measures to avoid and minimize adverse effects on the valley elderberry longhorn beetle. The Service will revise these guidelines as needed in the future. The most recently issued version of these guidelines should be used in developing all projects and habitat restoration plans. The survey and monitoring procedures described below are designed to avoid any adverse effects to the valley elderberry longhorn beetle. Thus a recovery permit is not needed to survey for the beetle or its habitat or to monitor conservation areas. If you are interested in a recovery permit for research purposes please call the Service's Regional Office at (503) 231-2063.

BACKGROUND INFORMATION

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), was listed as a threatened species on August 8, 1980 (*Federal Register* 45: 52803-52807). This animal is fully protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The valley elderberry longhorn beetle (beetle) is completely dependent on its host plant, elderberry (*Sambucus* species), which is a common component of the remaining riparian forests and adjacent upland habitats of California's Central Valley. Use of the elderberry by the beetle, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the elderberry's use by the beetle is an exit hole created by the larva just prior to the pupal stage. The life cycle takes one or two years to complete. The animal spends most of its life in the larval stage, living within the stems of an elderberry plant. Adult emergence is from late March through June, about the same time the elderberry produces flowers. The adult stage is short-lived. Further information on the life history, ecology, behavior, and distribution of the beetle can be found in a report by Barr (1991) and the recovery plan for the beetle (USFWS 1984).

SURVEYS

Proposed project sites within the range of the valley elderberry longhorn beetle should be surveyed for the presence of the beetle and its elderberry host plant by a qualified biologist. The beetle's range extends throughout California's Central Valley and associated foothills from about the 3,000-foot elevation contour on the east and the watershed of the Central Valley on the west (Figure 1). All or portions of 31 counties are included: Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Madera, Mariposa, Merced, Napa, Nevada, Placer, Sacramento, San Benito, San Joaquin, San Luis Obispo, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba.

If elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level occur on or adjacent to the proposed project site, or are otherwise located where they may be directly or indirectly affected by the proposed action, minimization measures which include planting replacement habitat (conservation planting) are required (Table 1).

All elderberry shrubs with one or more stems measuring 1.0 inch or greater in diameter at ground level that occur on or adjacent to a proposed project site must be thoroughly searched for beetle exit holes (external evidence of beetle presence). In addition, all elderberry stems one inch or greater in diameter at ground level must be tallied by diameter size class (Table 1). As outlined in Table 1, the numbers of elderberry seedlings/cuttings and associated riparian native trees/shrubs to be planted as replacement habitat are determined by stem size class of affected elderberry shrubs, presence or absence of exit holes, and whether a proposed project lies in a riparian or non-riparian area.

Elderberry plants with no stems measuring 1.0 inch or greater in diameter at ground level are unlikely to be habitat for the beetle because of their small size and/or immaturity. Therefore, no minimization measures are required for removal of elderberry plants with no stems measuring 1.0 inch or greater in diameter at ground level with no exit holes. Surveys are valid for a period of two years.

AVOID AND PROTECT HABITAT WHENEVER POSSIBLE

Project sites that do not contain beetle habitat are preferred. If suitable habitat for the beetle occurs on the project site, or within close proximity where beetles will be affected by the project, these areas must be designated as avoidance areas and must be protected from disturbance during the construction and operation of the project. When possible, projects should be designed such that avoidance areas are connected with adjacent habitat to prevent fragmentation and isolation of beetle populations. Any beetle habitat that cannot be avoided as described below should be considered impacted and appropriate minimization measures should be proposed as described below.

Avoidance: Establishment and Maintenance of a Buffer Zone

Complete avoidance (i.e., no adverse effects) may be assumed when a 100-foot (or wider) buffer is established and maintained around elderberry plants containing stems measuring 1.0 inch or greater in diameter at ground level. Firebreaks may not be included in the buffer zone. In buffer areas construction-related disturbance should be minimized, and any damaged area should be promptly restored following construction. The Service must be consulted before any disturbances within the buffer area are considered. In addition, the Service must be provided with a map identifying the avoidance area and written details describing avoidance measures.

Protective Measures

1. Fence and flag all areas to be avoided during construction activities. In areas where encroachment on the 100-foot buffer has been approved by the Service, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant.
2. Brief contractors on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements.
3. Erect signs 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. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

4. Instruct work crews about the status of the beetle and the need to protect its elderberry host plant.

Restoration and Maintenance

1. Restore any damage done to the buffer area (area within 100 feet of elderberry plants) during construction. Provide erosion control and re-vegetate with appropriate native plants.
2. Buffer areas must continue to be protected after construction from adverse effects of the project. Measures such as fencing, signs, weeding, and trash removal are usually appropriate.
3. No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any elderberry plant with one or more stems measuring 1.0 inch or greater in diameter at ground level.
4. The applicant must provide a written description of how the buffer areas are to be restored, protected, and maintained after construction is completed.
5. Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within five (5) feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment).

TRANSPLANT ELDERBERRY PLANTS THAT CANNOT BE AVOIDED

Elderberry plants must be transplanted if they can not be avoided by the proposed project. All elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level must be transplanted to a conservation area (see below). At the Service's discretion, a plant that is unlikely to survive transplantation because of poor condition or location, or a plant that would be extremely difficult to move because of access problems, may be exempted from transplantation. In cases where transplantation is not possible the minimization ratios in Table 1 may be increased to offset the additional habitat loss.

Trimming of elderberry plants (e.g., pruning along roadways, bike paths, or trails) with one or more stems 1.0 inch or greater in diameter at ground level, may result in take of beetles. Therefore, trimming is subject to appropriate minimization measures as outlined in Table 1.

1. **Monitor.** A qualified biologist (monitor) must be on-site for the duration of the transplanting of the elderberry plants to insure that no unauthorized take of the valley elderberry longhorn beetle occurs. If unauthorized take occurs, the monitor must have the authority to stop work until corrective measures have been completed. The monitor must immediately report any unauthorized take of the beetle or its habitat to the Service and to the California Department of Fish and Game.

2. Timing. Transplant elderberry plants when the plants are dormant, approximately November through the first two weeks in February, after they have lost their leaves. Transplanting during the non-growing season will reduce shock to the plant and increase transplantation success.
3. Transplanting Procedure.
 - a. Cut the plant back 3 to 6 feet from the ground or to 50 percent of its height (whichever is taller) by removing branches and stems above this height. The trunk and all stems measuring 1.0 inch or greater in diameter at ground level should be replanted. Any leaves remaining on the plant should be removed.
 - b. Excavate a hole of adequate size to receive the transplant.
 - c. Excavate the plant using a Vemeer spade, backhoe, front end loader, or other suitable equipment, taking as much of the root ball as possible, and replant immediately at the conservation area. Move the plant only by the root ball. If the plant is to be moved and transplanted off site, secure the root ball with wire and wrap it with burlap. Dampen the burlap with water, as necessary, to keep the root ball wet. Do not let the roots dry out. Care should be taken to ensure that the soil is not dislodged from around the roots of the transplant. If the site receiving the transplant does not have adequate soil moisture, pre-wet the soil a day or two before transplantation.
 - d. The planting area must be at least 1,800 square feet for each elderberry transplant. The root ball should be planted so that its top is level with the existing ground. Compact the soil sufficiently so that settlement does not occur. As many as five (5) additional elderberry plantings (cuttings or seedlings) and up to five (5) associated native species plantings (see below) may also be planted within the 1,800 square foot area with the transplant. The transplant and each new planting should have its own watering basin measuring at least three (3) feet in diameter. Watering basins should have a continuous berm measuring approximately eight (8) inches wide at the base and six (6) inches high.
 - e. Saturate the soil with water. Do not use fertilizers or other supplements or paint the tips of stems with pruning substances, as the effects of these compounds on the beetle are unknown.
 - f. Monitor to ascertain if additional watering is necessary. If the soil is sandy and well-drained, plants may need to be watered weekly or twice monthly. If the soil is clayey and poorly-drained, it may not be necessary to water after the initial saturation. However, most transplants require watering through the first summer. A drip watering system and timer is ideal. However, in situations where this is not possible, a water truck or other apparatus may be used.

PLANT ADDITIONAL SEEDLINGS OR CUTTINGS

Each elderberry stem measuring 1.0 inch or greater in diameter at ground level that is adversely affected (i.e., transplanted or destroyed) must be replaced, in the conservation area, with elderberry seedlings or cuttings at a ratio ranging from 1:1 to 8:1 (new plantings to affected stems). Minimization

ratios are listed and explained in Table 1. Stock of either seedlings or cuttings should be obtained from local sources. Cuttings may be obtained from the plants to be transplanted if the project site is in the vicinity of the conservation area. If the Service determines that the elderberry plants on the proposed project site are unsuitable candidates for transplanting, the Service may allow the applicant to plant seedlings or cuttings at higher than the stated ratios in Table 1 for each elderberry plant that cannot be transplanted.

PLANT ASSOCIATED NATIVE SPECIES

Studies have found that the beetle is more abundant in dense native plant communities with a mature overstory and a mixed understory. Therefore, a mix of native plants associated with the elderberry plants at the project site or similar sites will be planted at ratios ranging from 1:1 to 2:1 [native tree/plant species to each elderberry seedling or cutting (see Table 1)]. These native plantings must be monitored with the same survival criteria used for the elderberry seedlings (see below). Stock of saplings, cuttings, and seedlings should be obtained from local sources. If the parent stock is obtained from a distance greater than one mile from the conservation area, approval by the Service of the native plant donor sites must be obtained prior to initiation of the revegetation work. Planting or seeding the conservation area with native herbaceous species is encouraged. Establishing native grasses and forbs may discourage unwanted non-native species from becoming established or persisting at the conservation area. Only stock from local sources should be used.

Examples

Example 1

The project will adversely affect beetle habitat on a vacant lot on the land side of a river levee. This levee now separates beetle habitat on the vacant lot from extant Great Valley Mixed Riparian Forest (Holland 1986) adjacent to the river. However, it is clear that the beetle habitat located on the vacant lot was part of a more extensive mixed riparian forest ecosystem extending farther from the river's edge prior to agricultural development and levee construction. Therefore, the beetle habitat on site is considered riparian. A total of two elderberry plants with at least one stem measuring 1.0 inch or greater in diameter at ground level will be affected by the proposed action. The two plants have a total of 15 stems measuring over 1.0 inch. No exit holes were found on either plant. Ten of the stems are between 1.0 and 3.0 inches in diameter and five of the stems are greater than 5.0 inches in diameter. The conservation area is suited for riparian forest habitat. Associated natives adjacent to the conservation area are box elder (*Acer negundo californica*), walnut (*Juglans californica* var. *hindsii*), sycamore (*Platanus racemosa*), cottonwood (*Populus fremontii*), willow (*Salix gooddingii* and *S. laevigata*), white alder (*Alnus rhombifolia*), ash (*Fraxinus latifolia*), button willow (*Cephalanthus occidentalis*), and wild grape (*Vitis californica*).

Minimization (based on ratios in Table 1):

- Transplant the two elderberry plants that will be affected to the conservation area.
- Plant 40 elderberry rooted cuttings (10 affected stems compensated at 2:1 ratio and 5 affected stems compensated at 4:1 ratio, cuttings planted:stems affected)
- Plant 40 associated native species (ratio of associated natives to elderberry plantings is 1:1 in areas with no exit holes):
 - 5 saplings each of box elder, sycamore, and cottonwood

5 willow seedlings
5 white alder seedlings
5 saplings each of walnut and ash
3 California button willow
2 wild grape vines
Total: 40 associated native species

- Total area required is a minimum of 1,800 sq. ft. for one to five elderberry seedlings and up to 5 associated natives. Since, a total of 80 plants must be planted (40 elderberries and 40 associated natives), a total of 0.33 acre (14,400 square feet) will be required for conservation plantings. The conservation area will be seeded and planted with native grasses and forbs, and closely monitored and maintained throughout the monitoring period.

Example 2

The project will adversely affect beetle habitat in Blue Oak Woodland (Holland 1986). One elderberry plant with at least one stem measuring 1.0 inch or greater in diameter at ground level will be affected by the proposed action. The plant has a total of 10 stems measuring over 1.0 inch. Exit holes were found on the plant. Five of the stems are between 1.0 and 3.0 inches in diameter and five of the stems are between 3.0 and 5.0 inches in diameter. The conservation area is suited for elderberry savanna (non-riparian habitat). Associated natives adjacent to the conservation area are willow (*Salix* species), blue oak (*Quercus douglasii*), interior live oak (*Q. wislizenii*), sycamore, poison oak (*Toxicodendron diversilobum*), and wild grape.

Minimization (based on ratios in Table 1):

- Transplant the one elderberry plant that will be affected to the conservation area.
- Plant 30 elderberry seedlings (5 affected stems compensated at 2:1 ratio and 5 affected stems compensated at 4:1 ratio, cuttings planted:stems affected)
- Plant 60 associated native species (ratio of associated natives to elderberry plantings is 2:1 in areas with exit holes):
20 saplings of blue oak, 20 saplings of sycamore, and 20 saplings of willow, and seed and plant with a mixture of native grasses and forbs.
- Total area required is a minimum of 1,800 sq. ft. for one to five elderberry seedlings and up to 5 associated natives. Since, a total of 90 plants must be planted (30 elderberries and 60 associated natives), a total of 0.37 acre (16,200 square feet) will be required for conservation plantings. The conservation area will be seeded and planted with native grasses and forbs, and closely monitored and maintained throughout the monitoring period.

CONSERVATION AREA—PROVIDE HABITAT FOR THE BEETLE IN PERPETUITY

The conservation area is distinct from the avoidance area (though the two may adjoin), and serves to receive and protect the transplanted elderberry plants and the elderberry and other native plantings. The Service may accept proposals for off-site conservation areas where appropriate.

1. **Size.** The conservation area must provide at least 1,800 square feet for each transplanted elderberry plant. As many as 10 conservation plantings (i.e., elderberry cuttings or seedlings and/or associated native plants) may be planted within the 1800 square foot area with each transplanted elderberry. An additional 1,800 square feet shall be provided for every additional 10 conservation plants. Each planting should have its own watering basin measuring approximately three feet in diameter. Watering basins should be constructed with a continuous berm measuring approximately eight inches wide at the base and six inches high.

The planting density specified above is primarily for riparian forest habitats or other habitats with naturally dense cover. If the conservation area is an open habitat (i.e., elderberry savanna, oak woodland) more area may be needed for the required plantings. Contact the Service for assistance if the above planting recommendations are not appropriate for the proposed conservation area.

No area to be maintained as a firebreak may be counted as conservation area. Like the avoidance area, the conservation area should connect with adjacent habitat wherever possible, to prevent isolation of beetle populations.

Depending on adjacent land use, a buffer area may also be needed between the conservation area and the adjacent lands. For example, herbicides and pesticides are often used on orchards or vineyards. These chemicals may drift or runoff onto the conservation area if an adequate buffer area is not provided.

2. **Long-Term Protection.** The conservation area must be protected in perpetuity as habitat for the valley elderberry longhorn beetle. A conservation easement or deed restrictions to protect the conservation area must be arranged. Conservation areas may be transferred to a resource agency or appropriate private organization for long-term management. The Service must be provided with a map and written details identifying the conservation area; and the applicant must receive approval from the Service that the conservation area is acceptable prior to initiating the conservation program. A true, recorded copy of the deed transfer, conservation easement, or deed restrictions protecting the conservation area in perpetuity must be provided to the Service before project implementation.

Adequate funds must be provided to ensure that the conservation area is managed in perpetuity. The applicant must dedicate an endowment fund for this purpose, and designate the party or entity that will be responsible for long-term management of the conservation area. The Service must be provided with written documentation that funding and management of the conservation area (items 3-8 above) will be provided in perpetuity.

3. **Weed Control.** Weeds and other plants that are not native to the conservation area must be removed at least once a year, or at the discretion of the Service and the California Department of Fish and Game. Mechanical means should be used; herbicides are prohibited unless approved by the Service.

*Should monitor
be consistent w/
on site measures (G)
from July - Fall!*

4. **Pesticide and Toxicant Control.** Measures must be taken to insure that no pesticides, herbicides, fertilizers, or other chemical agents enter the conservation area. No spraying of these agents must be done within one 100 feet of the area, or if they have the potential to drift, flow, or be washed into the area in the opinion of biologists or law enforcement personnel from the Service or the California Department of Fish and Game.

5. **Litter Control.** No dumping of trash or other material may occur within the conservation area. Any trash or other foreign material found deposited within the conservation area must be removed within 10 working days of discovery.
6. **Fencing.** Permanent fencing must be placed completely around the conservation area to prevent unauthorized entry by off-road vehicles, equestrians, and other parties that might damage or destroy the habitat of the beetle, unless approved by the Service. The applicant must receive written approval from the Service that the fencing is acceptable prior to initiation of the conservation program. The fence must be maintained in perpetuity, and must be repaired/replaced within 10 working days if it is found to be damaged. Some conservation areas may be made available to the public for appropriate recreational and educational opportunities with written approval from the Service. In these cases appropriate fencing and signs informing the public of the beetle's threatened status and its natural history and ecology should be used and maintained in perpetuity.
7. **Signs.** A minimum of two prominent signs must be placed and maintained in perpetuity at the conservation area, unless otherwise approved by the Service. The signs should note that the site is habitat of the federally threatened valley elderberry longhorn beetle and, if appropriate, include information on the beetle's natural history and ecology. The signs must be approved by the Service. The signs must be repaired or replaced within 10 working days if they are found to be damaged or destroyed.

MONITORING

The population of valley elderberry longhorn beetles, the general condition of the conservation area, and the condition of the elderberry and associated native plantings in the conservation area must be monitored over a period of either ten (10) consecutive years or for seven (7) years over a 15-year period. The applicant may elect either 10 years of monitoring, with surveys and reports every year; or 15 years of monitoring, with surveys and reports on years 1, 2, 3, 5, 7, 10, and 15. The conservation plan provided by the applicant must state which monitoring schedule will be followed. No change in monitoring schedule will be accepted after the project is initiated. If conservation planting is done in stages (i.e., not all planting is implemented in the same time period), each stage of conservation planting will have a different start date for the required monitoring time.

Surveys. In any survey year, a minimum of two site visits between February 14 and June 30 of each year must be made by a qualified biologist. Surveys must include:

1. A population census of the adult beetles, including the number of beetles observed, their condition, behavior, and their precise locations. Visual counts must be used; mark-recapture or other methods involving handling or harassment must not be used.
2. A census of beetle exit holes in elderberry stems, noting their precise locations and estimated ages.
3. An evaluation of the elderberry plants and associated native plants on the site, and on the conservation area, if disjunct, including the number of plants, their size and condition.

4. An evaluation of the adequacy of the fencing, signs, and weed control efforts in the avoidance and conservation areas.
5. A general assessment of the habitat, including any real or potential threats to the beetle and its host plants, such as erosion, fire, excessive grazing, off-road vehicle use, vandalism, excessive weed growth, etc.

The materials and methods to be used in the monitoring studies must be reviewed and approved by the Service. All appropriate Federal permits must be obtained prior to initiating the field studies.

Reports. A written report, presenting and analyzing the data from the project monitoring, must be prepared by a qualified biologist in each of the years in which a monitoring survey is required. Copies of the report must be submitted by December 31 of the same year to the Service (Chief of Endangered Species, Sacramento Fish and Wildlife Office), and the Department of Fish and Game (Supervisor, Environmental Services, Department of Fish and Game, 1416 Ninth Street, Sacramento, California 95814; and Staff Zoologist, California Natural Diversity Data Base, Department of Fish and Game, 1220 S Street, Sacramento, California 95814). The report must explicitly address the status and progress of the transplanted and planted elderberry and associated native plants and trees, as well as any failings of the conservation plan and the steps taken to correct them. Any observations of beetles or fresh exit holes must be noted. Copies of original field notes, raw data, and photographs of the conservation area must be included with the report. A vicinity map of the site and maps showing where the individual adult beetles and exit holes were observed must be included. For the elderberry and associated native plants, the survival rate, condition, and size of the plants must be analyzed. Real and likely future threats must be addressed along with suggested remedies and preventative measures (e.g. limiting public access, more frequent removal of invasive non-native vegetation, etc.).

A copy of each monitoring report, along with the original field notes, photographs, correspondence, and all other pertinent material, should be deposited at the California Academy of Sciences (Librarian, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118) by December 31 of the year that monitoring is done and the report is prepared. The Service's Sacramento Fish and Wildlife Office should be provided with a copy of the receipt from the Academy library acknowledging receipt of the material, or the library catalog number assigned to it.

Access. Biologists and law enforcement personnel from the California Department of Fish and Game and the Service must be given complete access to the project site to monitor transplanting activities. Personnel from both these agencies must be given complete access to the project and the conservation area to monitor the beetle and its habitat in perpetuity.

SUCCESS CRITERIA

A minimum survival rate of at least 60 percent of the elderberry plants and 60 percent of the associated native plants must be maintained throughout the monitoring period. Within one year of discovery that survival has dropped below 60 percent, the applicant must replace failed plantings to bring survival above this level. The Service will make any determination as to the applicant's replacement responsibilities arising from circumstances beyond its control, such as plants damaged or killed as a result of severe flooding or vandalism.

SERVICE CONTACT

These guidelines were prepared by the Endangered Species Division of the Service's Sacramento Fish and Wildlife Office. If you have questions regarding these guidelines or to request a copy of the most recent guidelines, telephone (916) 414-6600 after August 5, 1999, or write to:

U.S. Fish and Wildlife Service
Ecological Services
2800 Cottage Way, W-2605
Sacramento, CA 95825

LITERATURE CITED

- Barr, C. B. 1991. The distribution, habitat, and status of the valley elderberry longhorn beetle *Desmocerus californicus dimorphus*. U.S. Fish and Wildlife Service; Sacramento, California.
- Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Unpublished Report. State of California, The Resources Agency, Department of Fish and Game, Natural Heritage Division, Sacramento, California.
- USFWS. 1980. Listing the valley elderberry longhorn beetle as a threatened species with critical habitat. Federal Register 45:52803-52807.
- USFWS. 1984. Recovery plan for the valley elderberry longhorn beetle. U.S. Fish and Wildlife Service, Endangered Species Program; Portland, Oregon.

Table 1: Minimization ratios based on location (riparian vs. non-riparian), stem diameter of affected elderberry plants at ground level, and presence or absence of exit holes.

Location	Stems (maximum diameter at ground level)	Exit Holes Y/N (quantify)	Elderberry Seedling Ratio ¹	Associated Native Plant Ratio ²
non-riparian	stems $\geq 1"$ & $\leq 3"$	No:	1:1	1:1
		Yes:	2:1	2:1
non-riparian	stems $> 3"$ & $< 5"$	No:	2:1	1:1
		Yes:	4:1	2:1
non-riparian	stems $\geq 5"$	No:	3:1	1:1
		Yes:	6:1	2:1
riparian	stems $\geq 1"$ & $\leq 3"$	No:	2:1	1:1
		Yes:	4:1	2:1
riparian	stems $> 3"$ & $< 5"$	No:	3:1	1:1
		Yes:	6:1	2:1
riparian	stems $\geq 5"$	No:	4:1	1:1
		Yes:	8:1	2:1

¹ Ratios in the *Elderberry Seedling Ratio* column correspond to the number of cuttings or seedlings to be planted per elderberry stem (one inch or greater in diameter at ground level) affected by a project.

² Ratios in the *Associated Native Plant Ratio* column correspond to the number of associated native species to be planted per elderberry (seedling or cutting) planted.

Supplement 2/9/2000

Elderberry shrub trimming/transplanting windows and compensation ratio multiplication factors

1. If pruning or otherwise disturbing elderberry shrubs occurs between February 15 and March 15, a compensation ratio of additional elderberry seedlings and associated native trees or shrubs of two times (2X) the normal amount of compensation would be necessary to minimize adverse effects to the valley elderberry longhorn beetle. In turn, this would require additional acreage for compensation.
2. Pruning or otherwise disturbing elderberry shrubs cannot occur between March 15 and June 15 under any circumstances.
3. If pruning or otherwise disturbing elderberry shrubs occurs between June 15 and August 31, a compensation ratio of additional elderberry seedlings and associated native trees or shrubs of two and one half times (2.5X) the normal amount of compensation would be necessary to minimize adverse effects to the valley elderberry longhorn beetle. In turn, this would require additional acreage for compensation.

**Appendix D. Avian Species Observed within the Project
Area in the Battle Creek Salmon and
Steelhead Restoration Project**

Appendix D. Avian Species Observed within the Project Area
in the Battle Creek Salmon and Steelhead Restoration Project

Common Name	Scientific Name	North Battle Creek Feeder Diversion Dam	Eagle Canyon Diversion Dam	Wildcat Diversion Dam	Coleman Diversion Dam/Inskip Powerhouse	Penstock Junction Box	Lower Ripley Creek Feeder	Inskip Diversion Dam/South Powerhouse	Soap Creek Feeder	South Diversion Dam
Great blue heron	<i>Ardea herodias</i>		R	R	R			R		R
Green heron	<i>Butorides virescens</i>				R			R		R
Mallard	<i>Anas platyrhynchos</i>				S			S		S
Common merganser	<i>Mergus merganser</i>				R			R		R
Turkey vulture	<i>Cathartes aura</i>	R	R	R	R	R	R	R	R	R
Osprey	<i>Pandion haliaetus</i>				S			S		S
Bald eagle	<i>Haliaeetus leucocephalus</i>		R		R					
Sharp-shinned hawk	<i>Accipiter striatus</i>				M			M	M	M
Cooper's hawk	<i>Accipiter cooperi</i>									M
Red-tailed hawk	<i>Buteo jamaicensis</i>	R	R	R	R	R	R	R	R	R
Golden eagle	<i>Aquila chrysaetos</i>	R						R	R	R
American kestrel	<i>Falco sparverius</i>				R			R		
California quail	<i>Callipepla californica</i>	R	R	R	R	R	R	R	R	R
Band-tailed pigeon	<i>Columba fasciata</i>				M		M	M	M	M
Mourning dove	<i>Zenaida macroura</i>	R	R	R	R	R	R	R	R	R
Greater roadrunner	<i>Geococcyx californicus</i>						R			
Northern pygmy-owl	<i>Glaucidium gnoma</i>									R
Common nighthawk	<i>Chordeiles minor</i>				S					
Vaux's swift	<i>Chaetura vauxi</i>						S			
Anna's hummingbird	<i>Calypte anna</i>	R	R	R	R		R	R	R	R
Belted kingfisher	<i>Ceryle alcyon</i>	R			R		R	R		R
Acorn woodpecker	<i>Melanerpes formicivorus</i>	R	R	R	R	R	R	R	R	R
Nuttall's woodpecker	<i>Picooides nuttallii</i>			R	R	R	R	R	R	R
Downy woodpecker	<i>Picooides pubescens</i>	R	R	R	R		R	R	R	R
Hairy woodpecker	<i>Picooides villosus</i>	R								
Northern flicker	<i>Colaptes auratus</i>	R	R	R	R	R	R	R	R	R
Western wood-pewee	<i>Contopus sordidulus</i>	S						S		S

Common Name	Scientific Name	North Battle Creek Feeder Diversion Dam	Eagle Canyon Diversion Dam	Wildcat Diversion Dam	Coleman Diversion Dam/Inskip Powerhouse	Penstock Junction Box	Lower Ripley Creek Feeder	Inskip Diversion Dam/South Powerhouse	Soap Creek Feeder	South Diversion Dam
Yellow warbler	<i>Dendroica petechia</i>				M		M	M		
Black-throated gray warbler	<i>Dendroica nigrescens</i>									M
Macgillivray's warbler	<i>Oporornis tolmiei</i>							M		
Wilson's warbler	<i>Wilsonia pusilla</i>							M		M
Yellow-breasted chat	<i>Icteria virens</i>				S		S	S		
Western tanager	<i>Piranga ludoviciana</i>	S		M	M			S		M
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>	S	S	S	S			S		S
Lazuli bunting	<i>Passerina amoena</i>									S
Spotted towhee	<i>Pipilo maculatus</i>	R	R	R	R		R	R	R	R
California towhee	<i>Pipilo crissalis</i>				R	R	R	R	R	R
Lark sparrow	<i>Chondestes grammacus</i>				R	R	R	R		
Song sparrow	<i>Melospiza melodia</i>						R	R		
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>		M		M				M	M
White-crowned sparrow	<i>Zonotrichia leucophrys</i>		M		M	M	M	M	M	M
Dark-eyed junco	<i>Junco hyemalis</i>	M								
Western meadowlark	<i>Sturnella neglecta</i>				R		R	R		
Brown-headed cowbird	<i>Molothrus ater</i>	S	S	S	S		S	S	S	S
Bullock's oriole	<i>Icterus bullockii</i>				S			S		S
House finch	<i>Carpodacus mexicanus</i>				R			R		
Lesser goldfinch	<i>Carduelis psaltria</i>		R	R	R	R	R	R	R	R

Notes:

R = Year round resident.

S = Summer only.

M = Migrant, only in spring and fall.

**Appendix E. Common and Scientific Names for Plant
Species Mentioned in the Text in the Battle
Creek Salmon and Steelhead Restoration
Project Area**

Appendix E. Common and Scientific Names for Plant Species Mentioned in the
Text in the Battle Creek Salmon and Steelhead Restoration Project Area

Common Name	Scientific Name
Big-leaf maple	<i>Acer macrophyllum</i>
Needlegrass	<i>Achnatherum sp.</i>
California buckeye	<i>Aesculus californica</i>
Annual agoseris	<i>Agoseris heterophylla</i>
Chinese tree-of-heaven	<i>Ailanthus altissima</i>
Silver hairgrass	<i>Aira caryophylla</i>
White alder	<i>Alnus rhombifolia</i>
Big manzanita	<i>Arctostaphylos manzanita</i>
Green-leaved manzanita	<i>Arctostaphylos patula</i>
Manzanitas	<i>Arctostaphylos sp.</i>
White-leaved manzanita	<i>Arctostaphylos viscida</i>
Pipevine	<i>Aristolochia californica</i>
Aster	<i>Aster sp.</i>
Depauperate milk-vetch	<i>Astragalus pauperculus</i>
Wild oats	<i>Avena sp.</i>
Yellowcarpet	<i>Blennosperma nanum</i>
Lesser quaking-grass	<i>Briza minor</i>
Ripgut brome	<i>Bromus diandrus</i>
Soft chess	<i>Bromus hordeaceus</i>
Red brome	<i>Bromus madritensis</i>
Water starwort	<i>Callitriche sp.</i>
Incense cedar	<i>Calocedrus decurrens</i>
Western spicebush	<i>Calycanthus occidentalis</i>
Sedge	<i>Carex sp.</i>
Buckbrush	<i>Ceanothus cuneatus var. cuneatus</i>
Yellow star-thistle	<i>Centaurea solstitialis</i>
Redbud	<i>Cercis occidentalis</i>
Birch-leaved mountain-mahogany	<i>Cercocarpus betuloides</i>
Soaproots	<i>Chlorogalum sp.</i>
Miner's lettuce	<i>Claytonia perfoliata</i>
Dogwood	<i>Cornus sessilis</i>
Hedgehog dogtail	<i>Cynosurus echinatus</i>
Scotch broom	<i>Cytisus scoparius</i>
Orchard grass	<i>Dactylis glomerata</i>
Annual hairgrass	<i>Deschampsia danthoinoides</i>
Blue dicks	<i>Dichelostemma sp.</i>
Lowland shooting star	<i>Dodecatheon clevelandii</i>
Parish's spike-rush	<i>Eleocharis parishii</i>
California yerba-santa	<i>Eriodictyon californicum</i>

Common Name	Scientific Name
Filarees	<i>Erodium sp.</i>
Coyote thistle	<i>Eryngium castrense</i>
Fig	<i>Ficus carica</i>
Filago	<i>Filago sp.</i>
Woodland strawberry	<i>Fragaria vesca</i>
Oregon ash	<i>Fraxinus latifolia</i>
Checkered fritillary	<i>Fritillaria affinis</i>
Butte County fritillary	<i>Fritillaria eastwoodiae</i>
Brownbells	<i>Fritillaria micrantha</i>
Bedstraws	<i>Galium sp.</i>
Nitgrass	<i>Gastroidium ventricosum</i>
Fitch's spikeweed	<i>Hemizonia fitchii</i>
Tarweed	<i>Hemizonia sp.</i>
Toyon	<i>Heteromeles arbutifolia</i>
Mediterranean barley	<i>Hordeum marinum ssp. gussoneanum</i>
Klamath weed	<i>Hypericum perforatum</i>
Wild iris	<i>Iris sp.</i>
Toad rush	<i>Juncus bufonius var. bufonius</i>
Rush	<i>Juncus effusus</i>
Prickly lettuce	<i>Lactuca serriola</i>
Fremont's goldfields	<i>Lasthenia fremontii</i>
Goldfields	<i>Lasthenia sp.</i>
Snub pea	<i>Lathyrus sulphureus</i>
Tidy-tips	<i>Layia fremontii</i>
Long-beaked hawkbit	<i>Leontodon taraxacoides</i>
Woolly meadowfoam	<i>Limnanthes flocossa ssp. flocossa</i>
Italian rye-grass	<i>Lolium multiflorum</i>
Hyssop loosestrife	<i>Lythrum hyssopifolium</i>
Manroot	<i>Marah fabaceus</i>
California melic grass	<i>Melica californica</i>
Q-tips	<i>Micropus californicus</i>
Shield-bracted monkeyflower	<i>Mimulus glaucescens</i>
Monkeyflower	<i>Mimulus guttatus</i>
White mulberry	<i>Morus alba</i>
Marigold navarretia	<i>Navarretia tagetina</i>
Downy navarretia	<i>Navarretia pubescens</i>
Dwarf stonecrop	<i>Parvisedum pumilum</i>
Ponderosa pine	<i>Pinus ponderosa</i>
Gray pine	<i>Pinus sabiniana</i>
Popcorn-flowers	<i>Plagiobothrys sp.</i>

Common Name	Scientific Name
Erect plantain	<i>Plantago erecta</i>
Western sycamore	<i>Platanus racemosa</i>
Puttyroots	<i>Plectritis sp.</i>
Bidwell's knotweed	<i>Polygonum bidwelliae</i>
Sword ferns	<i>Polystichum sp.</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
Woolly marbles	<i>Psilocarphus sp.</i>
Scrub oak	<i>Quercus berberidifolia</i>
Canyon live oak	<i>Quercus chrysolepis</i>
Blue oak	<i>Quercus douglasii</i>
Black oak	<i>Quercus kelloggii</i>
Valley oak	<i>Quercus lobata</i>
Interior live oak	<i>Quercus wislizenii var. wislizenii</i>
Western buttercup	<i>Ranunculus occidentalis</i>
Redberry	<i>Rhamnus crocea</i>
Coffeeberry	<i>Rhamnus tomentella</i>
Lemonadeberry	<i>Rhus trilobata</i>
Watercress	<i>Rorippa nasturtium-aquaticum</i>
Himalayan blackberry	<i>Rubus discolor</i>
Blackberry	<i>Rubus sp.</i>
Curly dock	<i>Rumex crispus</i>
Willows	<i>Salix exigua, S. laevigata, S. lasiolepis</i>
Pacific sanicle	<i>Sanicula crassicaulis</i>
Sanicle	<i>Sanicula sp.</i>
Saxifrage	<i>Saxifraga californica</i>
Indian-pink	<i>Silene californica</i>
Medusa head	<i>Taeniatherum caput-medusae</i>
Pacific yew	<i>Taxus brevifolia</i>
Poison oak	<i>Toxicodendron diversilobum</i>
Cowbag clover	<i>Trifolium depauperatum</i>
White-tipped clover	<i>Trifolium variegatum</i>
Tomcat clover	<i>Trifolium willdenovii</i>
Grass nuts	<i>Triteleia sp.</i>
Narrow-leaved cattail	<i>Typha angustifolia</i>
California bay laurel	<i>Umbellularia californica</i>
Vetch	<i>Vicia sp.</i>
California wild grape	<i>Vitis californica</i>
Annual fescues	<i>Vulpia sp.</i>
Cocklebur	<i>Xanthium strumarium</i>

**Appendix F. Common and Scientific Names for Wildlife
Species Mentioned in the Text in the Battle
Creek Salmon and Steelhead Restoration
Project Area**

Appendix F. Common and Scientific Names for Wildlife Species Mentioned in the Text
in the Battle Creek Salmon and Steelhead Restoration Project Area

Common Name	Scientific Names
Insect	
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>
Amphibians	
California newt	<i>Taricha torosa</i>
Sierra Nevada salamander	<i>Ensatina eschscholtzi</i>
Foothill yellow-legged frog	<i>Rana boylei</i>
Reptiles	
Western rattlesnake	<i>Crotalus viridis</i>
Ring-necked snake	<i>Diadophis punctatis</i>
Common kingsnake	<i>Lampropeltis getulus</i>
Gopher snake	<i>Pituophis melanoleucus</i>
Northern alligator lizard	<i>Gerrhonotus coeruleus</i>
Western fence lizard	<i>Sceloporus occidentalis</i>
Northwestern pond turtle	<i>Clemmys marmorata marmorata</i>
Southwestern pond turtle	<i>Clemmys marmorata pallida</i>
Birds	
Pied-billed grebe	<i>Podilymbus podiceps</i>
Great blue heron	<i>Ardea herodias</i>
Great egret	<i>Ardea alba</i>
Gadwall	<i>Anas strepera</i>
American wigeon	<i>Anas americana</i>
Green heron	<i>Butorides virescens</i>
Mallard	<i>Anas platyrhynchos</i>
Cinnamon teal	<i>Anas cyanoptera</i>
Green-winged teal	<i>Anas crecca</i>
Ring-necked duck	<i>Aythya collaris</i>
Common merganser	<i>Mergus merganser</i>
Turkey vulture	<i>Cathartes aura</i>
Osprey	<i>Pandion haliaetus</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
White-tailed kite	<i>Elanus leucurus</i>
Northern harrier	<i>Circus cyaneus</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Cooper's hawk	<i>Accipiter cooperi</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Ferruginous hawk	<i>Buteo regalis</i>
Rough-legged hawk	<i>Buteo lagopus</i>
Golden eagle	<i>Aquila chrysaetos</i>

Common Name	Scientific Names
American kestrel	<i>Falco sparverius</i>
Merlin	<i>Falco columbarius</i>
Prairie falcon	<i>Falco mexicanus</i>
Mountain quail	<i>Oreortyx pictus</i>
California quail	<i>Callipepla californica</i>
American coot	<i>Fulica americana</i>
Killdeer	<i>Charadrius vociferus</i>
Black-necked stilt	<i>Himantopus mexicanus</i>
Greater yellowlegs	<i>Tringa melanoleuca</i>
Common snipe	<i>Gallinago gallinago</i>
Band-tailed pigeon	<i>Columba fasciata</i>
Mourning dove	<i>Zenaida macroura</i>
Greater roadrunner	<i>Geococcyx californicus</i>
Barn owl	<i>Tyto alba</i>
Great horned owl	<i>Bubo virginianus</i>
Western screech-owl	<i>Otus kennicottii</i>
Northern pygmy-owl	<i>Glaucidium gnoma</i>
Common nighthawk	<i>Chordeiles minor</i>
Common poorwill	<i>Phalaenoptilus nuttallii</i>
Vaux's swift	<i>Chaetura vauxi</i>
Anna's hummingbird	<i>Calypte anna</i>
Belted kingfisher	<i>Ceryle alcyon</i>
Acorn woodpecker	<i>Melanerpes formicivorus</i>
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>
Nuttall's woodpecker	<i>Picoides nuttallii</i>
Downy woodpecker	<i>Picoides pubescens</i>
Hairy woodpecker	<i>Picoides villosus</i>
Northern flicker	<i>Colaptes auratus</i>
Pileated woodpecker	<i>Drycopus pileatus</i>
Olive-sided flycatcher	<i>Contopus cooperi</i>
Western wood-pewee	<i>Contopus sordidulus</i>
Little willow flycatcher	<i>Empidonax traillii brewsteri</i>
Pacific-slope flycatcher	<i>Empidonax difficilis</i>
Black phoebe	<i>Sayornis nigricans</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Western kingbird	<i>Tyrannus verticalis</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Cassin's vireo	<i>Vireo cassinii</i>
Hutton's vireo	<i>Vireo huttoni</i>
Warbling vireo	<i>Vireo gilvus</i>
Steller's jay	<i>Cyanositta stelleri</i>

Common Name	Scientific Names
Western scrub-jay	<i>Aphelocoma californica</i>
American crow	<i>Corvus brachyrhynchos</i>
Common raven	<i>Corvus corax</i>
Horned lark	<i>Eremophila alpestris</i>
Tree swallow	<i>Tachycineta bicolor</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Barn swallow	<i>Hirundo rustica</i>
Oak titmouse	<i>Baeolophus inornatus</i>
Bushtit	<i>Psaltriparus minimus</i>
Red-breasted nuthatch	<i>Sitta canadensis</i>
White-breasted nuthatch	<i>Sitta carolinensis</i>
Brown creeper	<i>Certhia americana</i>
Bewick's wren	<i>Thryomanes bewickii</i>
House wren	<i>Troglodytes aedon</i>
Winter wren	<i>Troglodytes troglodytes</i>
American dipper	<i>Cinclus mexicanus</i>
Golden-crowned kinglet	<i>Regulus satrapa</i>
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>
Western bluebird	<i>Sialia mexicana</i>
Hermit thrush	<i>Catharus guttatus</i>
American robin	<i>Turdus migratorius</i>
Wrentit	<i>Chamaea fasciata</i>
California thrasher	<i>Toxostoma redivivum</i>
American pipit	<i>Anthus rubescens</i>
Phainopepla	<i>Phainopepla nitens</i>
Orange-crowned warbler	<i>Vermivora celata</i>
Nashville warbler	<i>Vermivora ruficapilla</i>
Yellow warbler	<i>Dendroica petechia</i>
Black-throated gray warbler	<i>Dendroica nigrescens</i>
Hermit warbler	<i>Dendroica occidentalis</i>
Macgillivray's warbler	<i>Oporornis tolmiei</i>
Wilson's warbler	<i>Wilsonia pusilla</i>
Yellow-breasted chat	<i>Icteria virens</i>
Western tanager	<i>Piranga ludoviciana</i>
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Lazuli bunting	<i>Passerina amoena</i>
Spotted towhee	<i>Pipilo maculatus</i>
California towhee	<i>Pipilo crissalis</i>
Rufous-crowned sparrow	<i>Aimophila ruficeps</i>
Lark sparrow	<i>Chondestes grammacus</i>

Common Name	Scientific Names
Chipping sparrow	<i>Spizella passerina</i>
Vesper sparrow	<i>Poocetes gramineus</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Fox sparrow	<i>Passerella iliaca</i>
Song sparrow	<i>Melospiza melodia</i>
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Western meadowlark	<i>Sturnella neglecta</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Bullock's oriole	<i>Icterus bullockii</i>
Purple finch	<i>Carpodacus purpureus</i>
House finch	<i>Carpodacus mexicanus</i>
Pine siskin	<i>Carduelis pinus</i>
Lesser goldfinch	<i>Carduelis psaltria</i>
Mammals	
Fringed myotis	<i>Myotis thysanodes</i>
Long-eared myotis	<i>Myotis evotis</i>
Small-footed myotis	<i>Myotis ciliolabrum</i>
Long-legged myotis	<i>Myotis volans</i>
Yuma myotis	<i>Myotis yumanensis</i>
Pallid bat	<i>Antrozous pallidus</i>
Townsend's big-eared bat	<i>Plecotus townsendii</i>
Black-tailed hare	<i>Lepus californicus</i>
Brush rabbit	<i>Silvilagus bachmani</i>
California ground squirrel	<i>Spermophylla beecheyi</i>
Western gray squirrel	<i>Sciurus griseus</i>
Deer mouse	<i>Peromyscus maniculatus</i>
Coyote	<i>Canis latrans</i>
Gray fox	<i>Urocyon cinereoargenteus</i>
Ringtail	<i>Bassariscus astutus</i>
Raccoon	<i>Procyon lotor</i>
Bobcat	<i>Lynx rufus</i>
Striped skunk	<i>Mephitis mephitis</i>
Black-tailed deer	<i>Odocoileus hemionus</i>