

CALFED ADMINISTRATIVE RECORD: Multi-Species Conservation Strategy

**Technical Workshop Materials Provided to Species Specialists
and Others Attending the Workshops**

Jones & Stokes File Materials

CALFED CONSERVATION STRATEGY
SPECIES REVIEW WORKSHOP
January 27, 1999

#1

WORKSHOP PACKET 1:
REVIEW OF SPECIES GOALS

#1

SECTION I:

**GUIDELINES FOR REVIEW AND REVISION OF
PROPOSED SPECIES GOALS**

Guidelines for Preparation of Conservation Strategy Species Goals

This workshop packet presents information for use in reviewing proposed Conservation Strategy species goals. This information is intended for use in today's workshop and for your use in reviewing species goals and submitting recommendations after the workshop. Subsequent sections of this packet present the following information:

- **Section II** presents the definitions of the three types of Conservation Strategy species goals (i.e., "R", "r", and "m");
- **Section III** presents the riparian and upland species with proposed "R" or "r" goals and the habitat types with which they are associated;
- **Section IV** presents the riparian and upland species with proposed "m" goals and the habitat types with which they are associated;
- **Section V** presents descriptions of habitat types addressed in the Conservation Strategy;
- **Section VI** presents maps of CALFED regions and the Ecosystem Restoration Program (ERP) focus study area, including ecological management zones; and
- **Section VII** presents forms for providing recommended changes to species goals currently proposed in the Conservation Strategy and a checklist for reporting species goals that have been reviewed.
- **Section VIII** provides blank pages for recording notes.

Criteria for Establishing Species Goals

Species for which "R" goals are established generally meet the following criteria:

- management of the species can be addressed within CALFED's mission;
- the year-long or seasonal range of a species is entirely or nearly entirely within the legal Delta and/or Suisun Marsh and Bay (i.e., the Delta Basin and Suisun Marsh and San Francisco Bay ERP ecological management zones [see Section VI]);

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- CALFED could be reasonably expected to undertake all or almost all of the actions necessary to recover the species (e.g., a sufficient proportion of a species range is located within the CALFED solution area to allow recovery of the species); and
- the species are listed, proposed, or candidates for listing under the California and/or federal Endangered Species Acts, or the species is in sufficient decline that special attention to its restoration needs is appropriate.

Species for which “r” goals are established generally meet the following criteria:

- management of the species can be addressed within CALFED’s mission;
- CALFED actions would affect only a limited portion of the species range and/or CALFED actions would only have limited effects on the species;
- CALFED could be reasonably expected to undertake actions to contribute to the recovery of the species, but not be expected to implement all actions that may be needed to fully recover the species; and
- the species are listed, proposed, or candidates for listing under the California and/or federal Endangered Species Acts, or the species is in sufficient decline that special attention to its restoration needs is appropriate.

Species for which “m” goals are established generally meet the following criteria:

- management of the species is not addressed within CALFED’s mission (species is primarily found outside the Delta or Suisun Marsh) and
- CALFED could not reasonably be expected to undertake recovery actions, but mitigation and other conservation actions may be necessary to ensure the species is not adversely affected by CALFED program actions

Species Goals Review Background

- Review Section II to familiarize yourself with the definitions and intent of species goals.
- You will be reviewing goals proposed only for Conservation Strategy species that are associated with riparian and upland habitats. These species and proposed goals are presented in Sections III and IV. (A complete list of Conservation Strategy species and proposed species goals are presented in Sections III and IV of Workshop Packet 4).
- A key determinant in establishing a species goal is the area of overlap between a species range and where CALFED actions will be implemented. Generally, with the exception of some proposed new surface storage facilities, most CALFED actions that would affect species will occur within the ERP focus study area (Section VI). Most actions proposed for the Sacramento River and San Joaquin River Regions (Section VI) will be implemented within the floodplains of the Sacramento River, the San Joaquin River, and their major tributaries.
- the legal status and scientific names of species is presented in Sections I and II of Workshop Packet 4.

Species Goal Recommendations

- We request that changes you recommend to proposed species goals be provided on the species goal recommendations forms provided in Section X or, if you wish, in an electronic form (Wordperfect or Word only).
- If you provide recommendations on hardcopy forms, **please** write legibly.
- To enable us to track development of the Conservation Strategy, please provide all of the information requested on the forms.
- Because the Conservation Strategy is a part of a legal process, please be sure to provide your rationale and any supporting documentation for your recommended changes to species goals.

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- Please fill out the Evaluation Species Checklist (Section X) on completion of your review. The checklist is to help us ensure that proposed goals for all riparian and upland Conservation Strategy species are reviewed. This checklist will document the species for which you reviewed proposed goals, but for which you recommend no changes.

- If you have questions about conducting your review after the workshop, please call:

Pete Rawlings or Paul Cylinder (Jones & Stokes Associates): 916/737-3000

Mike Fris (U.S. Fish and Wildlife Service): 916/979-2109

Jeff Single (Department of Fish and Game): 209/243-4014

Marti Kie (CALFED): 916/654-4558

Submittal of Review Forms

- We must have all of your recommendation forms and checklist returned by **February 3, 1999** to ensure that your recommendations will be considered in the Conservation Strategy.

- Please return your hardcopy recommendation forms and your species checklist by mail or fax to:

Pete Rawlings
Jones & Stokes Associates
2600 "V" St.
Sacramento, CA 95818-1914

fax: 916/737-3030

- If you wish to submit recommendation forms and a list of the species for which you reviewed goals electronically, please e-mail to:

peter@jsanet.com

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SECTION II:
SPECIES GOALS DEFINITIONS

Definitions of "R", "r", and "m" Goals

Recovery ("R"): For those species designated "R," the CALFED Program has established a goal to recover the species within the CALFED ERP Ecological Zones. A goal of "Recovery" was generally assigned to those species whose range is entirely or nearly entirely within the area affected by the CALFED Program and for which CALFED could reasonably be expected to undertake all or most of the actions necessary to recover the species. The term recover generally means the decline of a species is arrested or reversed, threats to the species are neutralized, and thus, the species' long-term survival in nature is assured. In the case of most species listed under the Federal ESA, recovery is equivalent, *at a minimum*, to the requirements of delisting. For certain species, such as anadromous fish, with threats outside the geographic scope or purview of the CALFED Program, CALFED may not be capable of completely recovering the species, but will implement all necessary recovery actions within the ERP Ecological Zones. For other species, CALFED may choose a goal that aims to achieve more than would be required for delisting (e.g., restoration of a species and/or its habitat to a level beyond delisting requirements). The effort required to achieve the goal of "Recovery" may be highly variable between species. In sum, a goal of "Recovery" implies that CALFED will undertake all actions within the ERP Ecological Zones and program scope necessary to recover the species.

Contribute to Recovery ("r"): For those species designated "r," the CALFED Program will make specific contributions toward the recovery of the species. The goal "Contribute to Recovery" was generally assigned to those species for which CALFED Program actions affect only a limited portion of the species range and/or CALFED Program actions have limited effects on the species. In the case of a species with a recovery plan, this may mean implementing some of the measures identified in the plan. For species without a recovery plan, this would mean implementing specific measures that would benefit the species. In sum, a goal of contributing to a species' recovery implies that CALFED will undertake *some* of the actions within its geographic and program scope necessary to recover the species.

Maintain ("m"): For those species designated "m," the CALFED Program will undertake actions to maintain the species (this category is less rigorous than Contribute to Recovery). The goal "Maintain" was generally assigned to species expected to be minimally affected by CALFED actions. For this category, CALFED will ensure that any adverse effects to the species are addressed commensurate with the level of effect on the species; thus, actions may not actually contribute to the recovery of the species, but would be expected, *at a minimum*, to not contribute to the need to list an unlisted species or degrade the status of an already listed species. CALFED will also maximize beneficial effects on these species to the extent practicable.

Table 1. CALFED Conservation Measures for Species with Different Goals in Different Locations

| CALFED Scope | Species Goal | | |
|--|---------------------------------------|--|---|
| | "R" | "r" | "m" |
| Problem Area (Delta and Suisun Marsh) | Implement all recovery plan measures. | Implement all recovery plan measures. | Avoid, minimize, compensate, and conserve as appropriate and commensurate with Program effects. |
| Solution Area (14 Ecological Management Zones) | Implement all recovery plan measures. | Implement some recovery plan measures. | Avoid, minimize, compensate, and conserve as appropriate and commensurate with Program effects. |

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SECTION III:

**RIPARIAN AND UPLAND SPECIES WITH
PROPOSED "R" AND "r" GOALS**

SECTION IV:
RIPARIAN AND UPLAND SPECIES WITH
PROPOSED “m” GOALS

Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-----------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Mammals | | | | | | | | | | | | | | | | | | |
| San Joaquin kit fox | | | X | | | | | | | | | | | | | | X | |
| Giant kangaroo rat | | | X | | | | | | | | | | | | | | | |
| Ringtail | X | X | | | X | X | X | | | | | | | | | | | |
| Nelson's antelope ground squirrel | | | X | | | | | | | | | | | | | | | |
| Greater western mastiff-bat | X | X | X | | X | X | X | | | | | | | | | | | |
| Birds | | | | | | | | | | | | | | | | | | |
| Northern spotted owl | | | | | | | X | | | | | | | | | | | |
| Bald eagle | X | X | | | | | X | X | X | X | | | | | | X | | |
| California condor | | | X | | X | X | | | | | | | | | | | | |
| White-tailed kite | X | | X | | | | | | | | | X | X | X | X | X | X | X |
| Golden eagle | X | | X | | X | X | | | | | | | | | | | | |
| Mountain plover | | | X | | | | | | | | | | | | | | X | |
| Grasshopper sparrow | | | X | | | | | | | | | | | | | | X | |
| Tricolored blackbird | | | X | | | | | | | | | | | X | X | X | X | X |

¹TPA = Tidal perennial aquatic
 VRA = Valley riverine aquatic
 MRA = Montane riverine aquatic
 L = Lacustrine
 SE = Saline emergent

TFE = Tidal freshwater emergent
 NFPE = Nontidal freshwater permanent emergent
 NSW = Natural seasonal wetlands
 MSW = Managed seasonal wetlands
 VFR = Valley/foothill riparian

MR = Montane riparian
 G = Grassland
 IDS = Inland dune scrub
 US = Upland scrub
 VFW = Valley/foothill woodland

MWF = Montane woodland and forest
 UC = Upland cropland
 SFA = Seasonally flooded agriculture

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-------------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Yellow-breasted chat | X | X | | | | | | | | | | | | | | | | |
| Long-eared owl | X | X | | | | X | | | | | | | | | | | | |
| Short-eared owl | | | X | | | | | | | | | X | X | X | X | X | | X |
| Western burrowing owl | | | X | | X | | | | | | | | | | | | X | |
| Long-billed curlew | | | X | | | | | X | | | | X | | X | X | X | X | X |
| Cooper's hawk | X | X | | | | X | X | | | | | | | | | | | |
| Northern harrier | | | X | | | | | | | | | X | X | X | X | X | X | X |
| Osprey | X | X | | | | X | X | X | X | X | X | | | | | | | |
| Double-crested cormorant (rookery) | X | X | | | | | | | | | | | | | | | | |
| Black-crowned night heron (rookery) | X | X | | | | | | | | | | | | X | | | | |
| Great blue heron (rookery) | X | X | | | | | | | | | | | | | | | | |
| Great egret (rookery) | X | X | | | | | | | | | | | | | | | | |
| Snowy egret (rookery) | X | X | | | | | | | | | | | | X | | | | |
| Reptiles | | | | | | | | | | | | | | | | | | |
| Alameda whipsnake | X | | X | | X | X | | | | | | | | | | | | |

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 US = Upland scrub
 VFW = Valley/foothill woodland

MWF = Montane woodland and forest
 UC = Upland cropland
 SFA = Seasonally flooded agriculture

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|--------------------------------|---------------------------------|--------|---|-----|----|-----|-----|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | IDS | US | VFW | MWF | TPA | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Blunt-nosed leopard lizard | | | X | | | | | | | | | | | | | | | |
| San Joaquin whipsnake | | | X | | X | X | | | | | | | | | | | | |
| Western pond turtle | X | | | | | | | | X | X | X | | | X | | | | |
| Amphibians | | | | | | | | | | | | | | | | | | |
| California red-legged frog | X | X | X | | | | | | X | X | X | | | X | X | X | | |
| Limestone salamander | | | | | X | X | | | | | | | | | | | | |
| California tiger salamander | | | X | | | | | | | | X | | | X | | | | |
| Foothill yellow-legged frog | X | X | | | | | | | X | X | | | | | | | | |
| Invertebrates | | | | | | | | | | | | | | | | | | |
| Callippe silverspot | | | X | | | | | | | | | | | | | | | |
| Lange's metalmark | | | | X | | | | | | | | | | | | | | |
| Monarch butterfly (roost) | | | | | | X | | | | | | | | | | | | |
| Plants | | | | | | | | | | | | | | | | | | |
| Antioch Dunes evening-primrose | | | | X | | | | | | | | | | | | | | |
| Calistoga popcornflower | | | X | | | | | | | | | | | X | X | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-----------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Clara Hunt's milkvetch | | | X | | | X | | | | | | | | | | | | |
| Contra Costa wallflower | | | | X | | | | | | | | | | | | | | |
| El Dorado bedstraw | | | | | X | X | | | | | | | | | | | | |
| Hartweg's golden sunburst | | | X | | | X | | | | | | | | | | | | |
| Hoover's eriastrum | | | X | | | | | | | | | | | | | | | |
| Large-flowered fiddleneck | | | X | | | X | | | | | | | | | | | | |
| Layne's ragwort | | | | | X | X | | | | | | | | | | | | |
| Marin western flax | | | X | | X | | | | | | | | | | | | | |
| Pallid manzanita | | | | | X | | | | | | | | | | | | | |
| Pine Hill ceanothus | | | | | X | X | | | | | | | | | | | | |
| Pine Hill flannelbush | | | | | X | X | | | | | | | | | | | | |
| San Benito evening-primrose | | | | | X | X | | | | | | | | | | | | |
| San Joaquin adobe sunburst | | | X | | | | | | | | | | | | | | | |
| San Joaquin woollythreads | | | X | | | | | | | | | | | X | | | | |
| Showy Indian clover | | | X | | | | | | | | | | | X | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|---------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Sonoma alopecurus | X | | | | | | | | | | | | | X | | | | |
| Sonoma spineflower | | | X | | | | | | | | | | | | | | | |
| Stebbins' morning-glory | | | | | X | X | | | | | | | | | | | | |
| Tiburon Indian paintbrush | | | X | | | | | | | | | | | | | | | |
| Tiburon jewelflower | | | X | | | | | | | | | | | | | | | |
| Tiburon Mariposa lily | | | X | | | | | | | | | | | | | | | |
| White-rayed pentachaeta | | | X | | | | | | | | | | | | | | | |
| Baker's larkspur | | | | | X | | | | | | | | | | | | | |
| Baker's manzanita | | | | | X | | | | | | | | | | | | | |
| California vervain | X | | | | | X | | | | | | | | | | | | |
| Indian Valley brodiaea | | | X | | X | | X | | | | | | | | | | | |
| Ione buckwheat | | | | | X | | | | | | | | | | | | | |
| Irish Hill buckwheat | | | | | X | | | | | | | | | | | | | |
| Marin checkerbloom | | | X | | X | | | | | | | | | | | | | |
| Mason's ceanothus | | | | | X | | | | | | | | | | | | | |
| Mt. Diablo bird's-beak | | | | | X | | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|----------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| North Coast semaphore grass | | | | | | | X | | | | | | | X | X | | | |
| Rock sanicle | | | X | | X | | X | | | | | | | | | | | |
| Santa Cruz tarplant | | | X | | | | | | | | | | | | | | | |
| Yellow larkspur | | | X | | X | | | | | | | | | | | | | |
| Ione manzanita | | | | | X | | | | | | | | | | | | | |
| Rawhide Hill onion | | | | | | X | | | | | | | | | | | | |
| Alkali milkvetch | | | X | | | | | | | | | | | | X | | | |
| Arburua Ranch jewelflower | | | X | | X | | | | | | | | | | | | | |
| Ben Lomond buckwheat | | | | | X | X | | | | | | | | | | | | |
| Big tarplant | | | X | | | | | | | | | | | | | | | |
| Brittlescale | | | X | | | | | | | | | | | | X | | | |
| California beaked-rush | | | | | | | X | | | | | | | X | | | | |
| Congdon's lomatium | | | | | X | X | | | | | | | | | | | | |
| Congdon's tarplant | | | X | | | | | | | | | | | | | | | |
| Contra Costa manzanita | | | | | X | | | | | | | | | | | | | |
| Diablo helianthella | | | X | | | | | | | | | | | | | | | |
| Diamond-petaled California poppy | | | X | | | | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------------|----|---|-----|----|-----|-----|------------------|----|-----|---|-----------------------------------|-----|------|-----|-----|----|-----|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VFR | MR | G | IDS | US | VFW | MWF | TPA | VR | MRA | L | SE | TFE | NFPE | NSW | MSW | UC | SFA |
| Ferris' milkvetch | | | X | | | | | | | | | | | | X | | | |
| Heartscale | | | X | | X | | | | | | | | | | | | | |
| Heckard's peppergrass | | | X | | | | | | | | | | | | | | | |
| Hospital Canyon larkspur | | | | | X | X | | | | | | | | | | | | |
| Lesser saltscale | | | X | | | | | | | | | | | | X | | | |
| Lost Hills crownscale | | | X | | | | | | | | | | | | X | | | |
| Mad-dog skullcap | | | | | | | X | | | | | | | X | X | | | |
| Mariposa clarkia | X | | | | | X | | | | | | | | | | | | |
| Marsh checkerbloom | X | | | | | | | | | | | | | X | | | | |
| Merced phacelia | | | X | | | | | | | | | | | | | | | |
| Mt. Diablo jewelflower | | | X | | X | | | | | | | | | | | | | |
| Mt. Diablo manzanita | | | | | X | | | | | | | | | | | | | |
| Mt. Hamilton coreopsis | | | | | | X | | | | | | | | | | | | |
| Mt. Hamilton jewelflower | | | | | X | X | | | | | | | | | | | | |
| Napa western flax | | | | | X | | | | | | | | | | | | | |
| Panoche peppergrass | | | X | | | | | | | | | | | | | | | |
| Red Hills ragwort | | | | | | X | | | | | | | | | | | | |

¹TPA = Tidal perennial aquatic
 VRA = Valley riverine aquatic
 MRA = Montane riverine aquatic
 L = Lacustrine
 SE = Saline emergent

TFE = Tidal freshwater emergent
 NFPE = Nontidal freshwater permanent emergent
 NSW = Natural seasonal wetlands
 MSW = Managed seasonal wetlands
 VFR = Valley/foothill riparian

MR = Montane riparian
 G = Grassland
 IDS = Inland dune scrub
 US = Upland scrub
 VFW = Valley/foothill woodland

MWF = Montane woodland and forest
 UC = Upland cropland
 SFA = Seasonally flooded agriculture

Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|------------------------------|---------------------------------|--------|---|-----|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | IDS | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Red-flowered lotus | | | X | | | X | | | | | | | | | | | | |
| San Joaquin spearscale | | | X | | | | | | | | | | | | X | | | |
| Saw-toothed lewisia | | X | | | | | X | | | | | | | | | | | |
| Shaggyhair lupine | | | | | X | X | | | | | | | | | | | | |
| Sharsmith's harebell | | | | | X | | | | | | | | | | | | | |
| Showy madia | | | X | | | X | | | | | | | | | | | | |
| Slough thistle | X | | | | | | | | | | | | X | X | X | | | |
| Spiny-sepaed button-celery | | | X | | | | | | | | | | | | X | | | |
| Henderson's bent grass | | | X | | | | | | | | | | | | X | | | |
| San Antonio Hills monardella | | | | | X | X | | | | | | | | | | | | |

¹TPA = Tidal perennial aquatic
 VRA = Valley riverine aquatic
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 SE = Saline emergent

TFE = Tidal freshwater emergent
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 G = Grassland
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 US = Upland scrub
 VFW = Valley/foothill woodland

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 UC = Upland cropland
 SFA = Seasonally flooded agriculture

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SECTION V:

**DESCRIPTION OF
NCCP HABITAT TYPES**

NCCP Habitat Type Descriptions

| NCCP Habitat Type | Habitat Description |
|--|--|
| Tidal perennial aquatic | Tidal perennial aquatic habitat is defined as deep water (greater than 3 meters in depth from mean low low tide) aquatic, shallow (less than or equal to 3 meters in depth from mean low low tide) aquatic, and unvegetated intertidal (i.e., tideflats) zones of estuarine bays, river channels, and sloughs. |
| Lacustrine | Lacustrine habitat is defined as permanent bodies of water that do not support emergent vegetation and are not subject to tidal exchange, including lakes, ponds, oxbows, gravel pits, and flooded islands. |
| Saline emergent | Saline emergent habitat is defined to include portions of San Francisco, San Pablo, and Suisun Bays and the Delta that support emergent wetland plant species that are tolerant of saline or brackish conditions within the intertidal zone or on lands that historically were subject to tidal exchange (i.e., diked wetlands). |
| Tidal freshwater emergent | Tidal freshwater emergent habitat is defined to include portions of the intertidal zones of the Delta that support emergent wetland plant species that are not tolerant of saline or brackish conditions. |
| Nontidal freshwater permanent emergent | Nontidal freshwater permanent emergent habitat is defined to include permanent (natural and managed) wetlands, including meadows, dominated by wetland plant species that are not tolerant of saline or brackish conditions. |

| | |
|--------------------------|---|
| Natural seasonal wetland | Natural seasonal wetland habitat is defined to include vernal pools and other non-managed seasonal wetlands with natural hydrology that are dominated by herbaceous vegetation and annually pond surface water or maintain saturated soils at the ground surface for a portion of the year of sufficient duration to support facultative or obligate wetland plant species. |
| Managed seasonal wetland | Managed seasonal wetland habitat is defined to include wetlands dominated by native or non-native herbaceous plants, excluding croplands farmed for profit (e.g., corn and rice), that are flooded and drained by land managers during specific periods to enhance habitat values for specific wildlife species. Ditches and drains associated with managed seasonal wetlands are included in this habitat type. |
| Valley riverine aquatic | Valley riverine aquatic habitat is defined to include the water column of flowing streams and rivers in low-gradient channel reaches below approximately 300 feet in elevation that are not tidally influenced, including associated shaded riverine aquatic, pool, riffle, run, and unvegetated channel substrate (including seasonally exposed channel bed) habitat features, and sloughs, backwaters, overflow channels, and flood bypasses hydrologically connected to stream and river channels. |

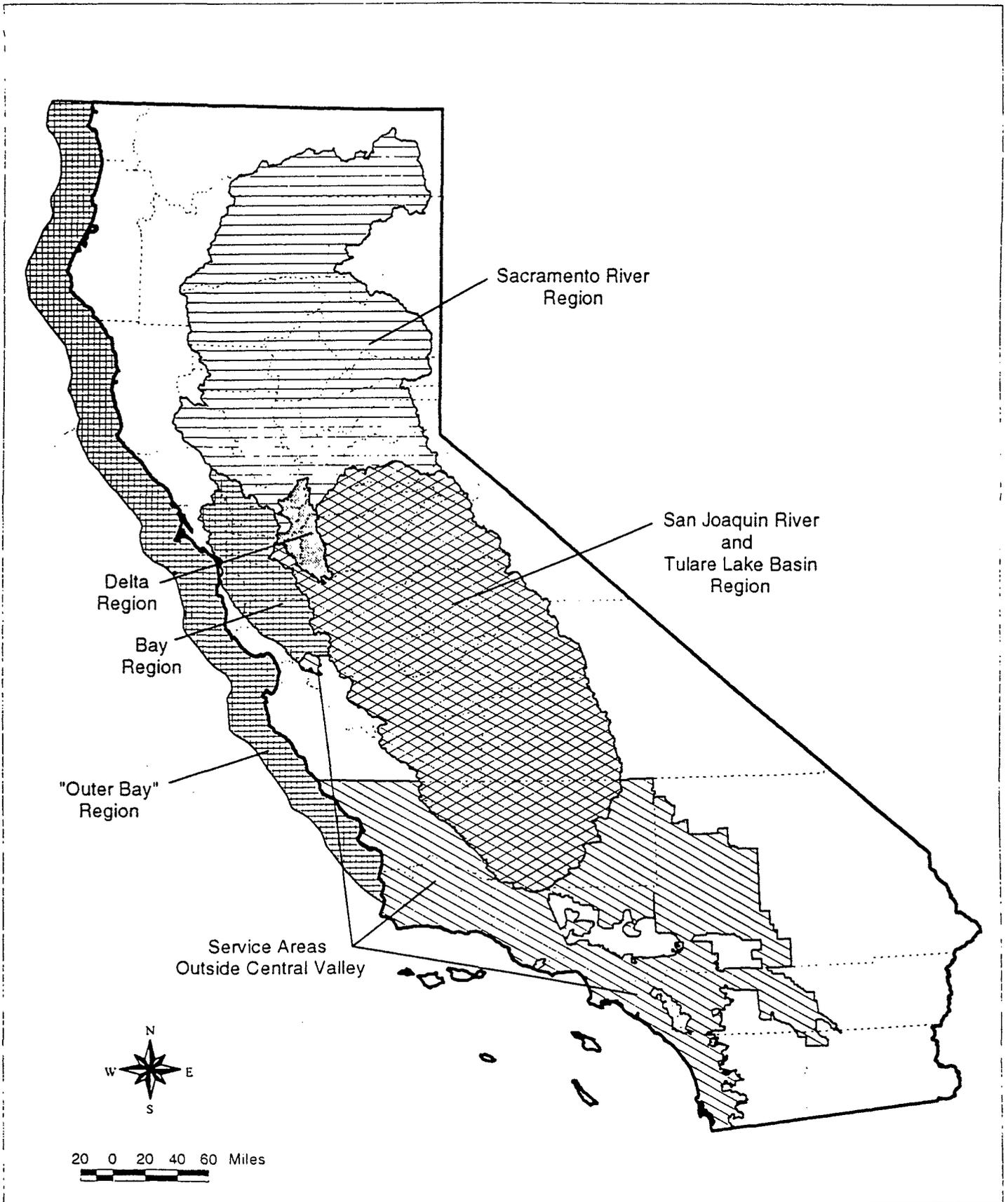
| | |
|--------------------------|--|
| Montane riverine aquatic | Montane riverine aquatic habitat is defined to include the water column of flowing streams and rivers above approximately 300 feet in elevation, including associated shaded riverine aquatic, pool, riffle, run, and unvegetated channel substrate (including seasonally exposed channel bed) habitat features, and sloughs, backwaters, and overflow channels hydrologically connected to stream and river channels. |
| Valley/foothill riparian | Valley/foothill riparian habitat is defined to include all successional stages of woody vegetation generally dominated by willow, Fremont cottonwood, valley oak, or sycamore within the active and historical floodplains of low-gradient reaches of streams and rivers generally below 300 feet in elevation. |
| Montane riparian | Montane riparian habitat is defined to include all successional stages of woody vegetation such as willow, black cottonwood, white alder, birch, and dogwood within the active floodplains of moderate to high gradient reaches of streams and rivers generally above 300 feet in elevation. |
| Grassland | Grassland habitat is defined to include upland vegetation communities dominated by introduced and native annual and perennial grasses, including unirrigated and irrigated pasture lands. |
| Inland dune scrub | Inland dune scrub habitat consists of vegetated stabilized sand dunes associated with river and estuarine systems. |
| Upland scrub | Upland scrub habitat is defined to include habitat areas that are dominated by shrubs characteristic of coastal scrub and chaparral communities. |

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| | |
|-------------------------------------|--|
| Valley/foothill woodland and forest | Valley/foothill woodland and forest habitat is defined to include non-riparian forest, woodland, and savanna below 300 feet in elevation. These vegetation communities are commonly dominated by valley oak, blue oak, interior live oak, coast live oak, and/or foothill pine. |
| Montane woodland and forest | Montane woodland and forest habitat is defined to include non-riparian forest and woodland above 300 feet in elevation. These vegetation communities are commonly dominated by pine, fir, cedar, and/or black oak. |
| Upland cropland | Upland cropland habitat is defined to include agricultural lands farmed for grain, field, truck, and other crops that are not seasonally flooded. |
| Seasonally flooded agriculture | Seasonally flooded agriculture habitat is defined to include agricultural lands farmed for grain, field, truck, rice, and other crops that require seasonal flooding for durations of a least 1 week as a management practice (e.g., pest control and irrigation) or are purposefully flooded seasonally to enhance habitat values for specific wildlife species (e.g., duck clubs). Agricultural ditches and drains associated with maintaining seasonally flooded agriculture are included in this habitat type. |

SECTION VI:

**CALFED REGIONS AND THE
ECOSYSTEM RESTORATION PROGRAM FOCUS
STUDY AREA**

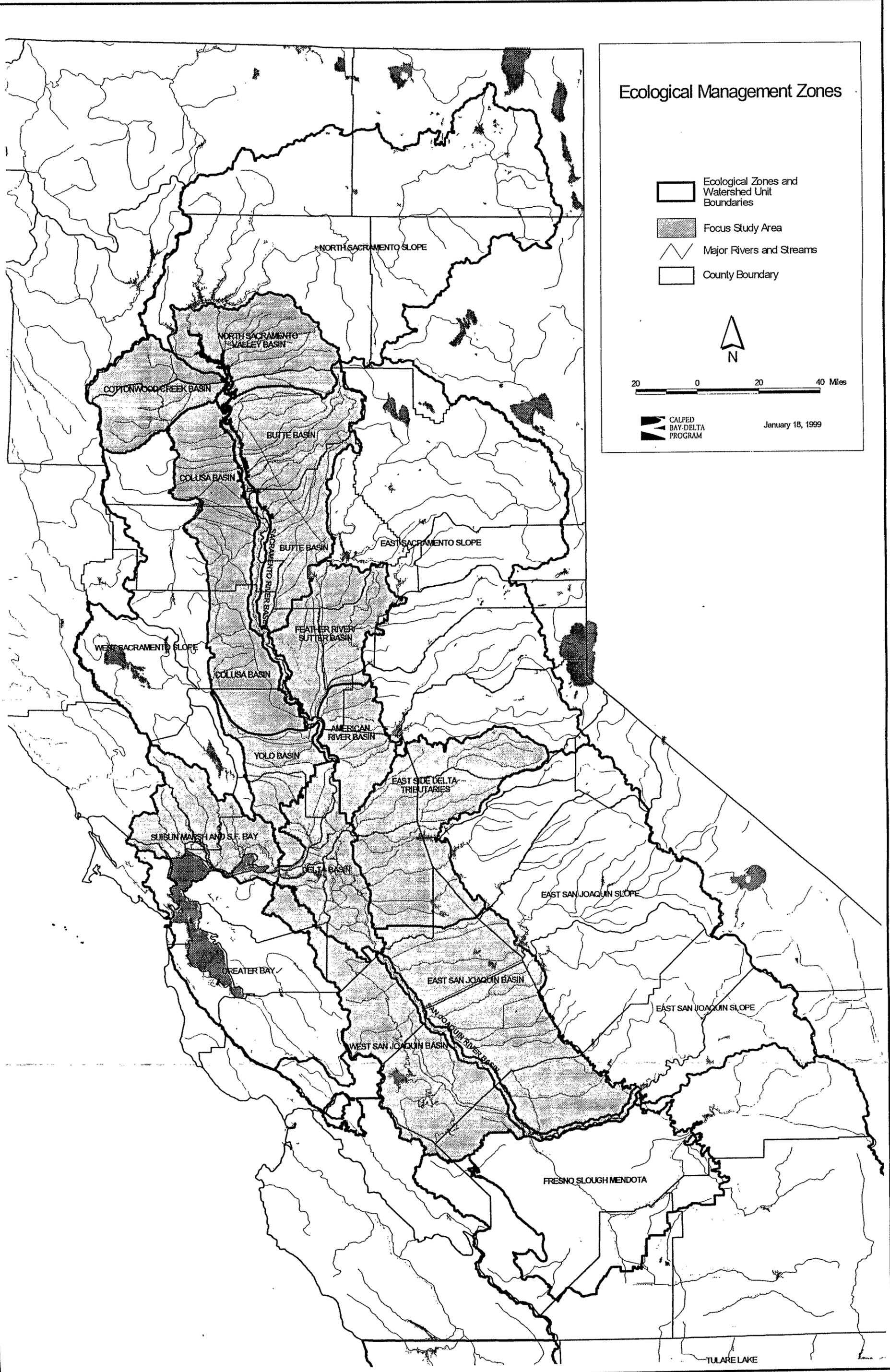


**CALFED
BAY-DELTA
PROGRAM**

CALFED Regions

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Ecological Management Zones

-  Ecological Zones and Watershed Unit Boundaries
-  Focus Study Area
-  Major Rivers and Streams
-  County Boundary



20 0 20 40 Miles



January 18, 1999

SECTION VII:
**SPECIES GOAL REVIEW CHECKLIST AND
RECOMMENDATION FORMS**

Evaluation Species Goals Checklist:
Please Check the Species for Which You have Reviewed Goals

| Check Here | Evaluation Species | Check Here | Evaluation Species |
|------------|-------------------------------------|------------|-----------------------------------|
| | Mammals | | Reptiles |
| | San Joaquin kit fox | | Alameda whipsnake |
| | Giant kangaroo rat | | Blunt-nosed leopard lizard |
| | Ringtail | | San Joaquin whipsnake |
| | Nelson's antelope ground squirrel | | Western pond turtle |
| | Riparian brush rabbit | | Amphibians |
| | San Joaquin Valley woodrat | | California red-legged frog |
| | Greater western mastiff-bat | | Limestone salamander |
| | Birds | | California tiger salamander |
| | Least Bell's vireo | | Foothill yellow-legged frog |
| | Northern spotted owl | | Invertebrates |
| | Bald eagle | | Callippe silverspot |
| | California condor | | Lange's metalmark |
| | Little willow flycatcher | | Valley elderberry longhorn beetle |
| | Bank swallow | | Monarch butterfly (roost) |
| | Western yellow-billed cuckoo | | Plants |
| | Greater sandhill crane | | Antioch Dunes evening-primrose |
| | White-tailed kite | | Calistoga popcornflower |
| | Golden eagle | | Clara Hunt's milkvetch |
| | Swainson's hawk | | Contra Costa wallflower |
| | Mountain plover | | El Dorado bedstraw |
| | California yellow warbler | | Hartweg's golden sunburst |
| | Grasshopper sparrow | | Large-flowered fiddleneck |
| | Tricolored blackbird | | Layne's ragwort |
| | Yellow-breasted chat | | Marin western flax |
| | Long-eared owl | | Pallid manzanita |
| | Short-eared owl | | Pine Hill ceanothus |
| | Western burrowing owl | | Pine Hill flannelbush |
| | Long-billed curlew | | San Benito evening-primrose |
| | Cooper's hawk | | San Joaquin adobe sunburst |
| | Northern harrier | | San Joaquin woolythreads |
| | Osprey | | Showy Indian clover |
| | Double-crested cormorant (rookery) | | Sonoma alopecurus |
| | Black-crowned night heron (rookery) | | Sonoma spineflower |
| | Great blue heron (rookery) | | Stebbins' morning-glory |
| | Great egret (rookery) | | Tiburon Indian paintbrush |

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| Check Here | Evaluation Species | Check Here | Evaluation Species |
|------------|----------------------------------|------------|---|
| | Snowy egret (rookery) | | Tiburon jewelflower |
| | Plants (cont.) | | Plants (cont.) |
| | Tiburon Mariposa lily | | Ferris' milkvetch |
| | White-rayed pentachaeta | | Heartscale |
| | Baker's larkspur | | Heckard's peppergrass |
| | Baker's manzanita | | Hospital Canyon larkspur |
| | California vervain | | Lesser saltscale |
| | Delta coyote-thistle | | Lost Hills crownscale |
| | Indian Valley brodiaea | | Mad-dog skullcap |
| | Ione buckwheat | | Mariposa clarkia |
| | Irish Hill buckwheat | | Marsh checkerbloom |
| | Marin checkerbloom | | Merced phacelia |
| | Mason's ceanothus | | Mt. Diablo jewelflower |
| | Mt. Diablo bird's-beak | | Mt. Diablo manzanita |
| | North Coast semaphore grass | | Mt. Hamilton coreopsis |
| | Rock sanicle | | Mt. Hamilton jewelflower |
| | Santa Cruz tarplant | | Napa western flax |
| | Yellow larkspur | | Northern California black walnut (native) |
| | Ione manzanita | | Panoche peppergrass |
| | Rawhide Hill onion | | Red Hills ragwort |
| | Alkali milkvetch | | Red-flowered lotus |
| | Arburua Ranch jewelflower | | San Joaquin spearscale |
| | Ben Lomond buckwheat | | Saw-toothed lewisia |
| | Big tarplant | | Shaggyhair lupine |
| | Brittlescale | | Sharsmith's harebell |
| | California beaked-rush | | Showy madia |
| | Congdon's lomatium | | Slough thistle |
| | Congdon's tarplant | | Spiny-sepaled button-celery |
| | Contra Costa manzanita | | Henderson's bent grass |
| | Diablo helianthella | | San Antonio Hills monardella |
| | Diamond-petaled California poppy | | |

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SPECIES GOAL RECOMMENDATIONS

Species Name: _____ Date: _____

Reviewer Name(s) and Affiliation: _____

Proposed CALFED Goal (circle one): R r m

| |
|---|
| Recommended Change to Proposed CALFED Species Goal (enter "R", "r", or "m"): |
| |
| Rationale and Documentation for Recommending a Change to the Proposed CALFED Species Goal: |
| |

SECTION VIII:

NOTE PAGES

CALFED CONSERVATION STRATEGY
SPECIES REVIEW WORKSHOP
January 27, 1999

#2

**WORKSHOP PACKET 2:
DEVELOPMENT OF SPECIES
PRESCRIPTIONS**

#2

SECTION I:
**GUIDELINES FOR DEVELOPMENT OF
SPECIES PRESCRIPTIONS**

Guidelines for Preparation of Conservation Strategy Species Prescriptions

This workshop packet presents information for use in recommending prescriptions for achieving Conservation Strategy species goals. This information is intended for use in today's workshop and for your use in preparing and submitting recommendations after the workshop. Subsequent sections of this packet present the following information:

- **Section II** presents the riparian and upland species with proposed "R" or "r" goals and the habitat types with which they are associated;
- **Section III** presents the riparian and upland species with proposed "m" goals and the habitat types with which they are associated;
- **Section IV** presents descriptions of habitat types addressed in the Conservation Strategy;
- **Section V** presents species targets (i.e., prescriptions) that are proposed in the Ecosystem Restoration Program (ERP);
- **Section VI** presents a summary of existing habitat acreages by CALFED Region and ERP ecological management unit and a summary of ERP proposed habitat restoration and enhancement actions;
- **Section VII** presents maps of CALFED regions and the Ecosystem Restoration Program (ERP) focus study area, including ecological management zones; and
- **Section VIII** presents forms for recommending species prescriptions for achieving species goals and a checklist for reporting species you have developed prescriptions for and for which you considered and determined additional prescriptions are not needed.
- **Section IX** provides blank pages for recording notes.

Definition

The Conservation Strategy uses the term "prescription" to mean a defined and measurable species target that, if met, would achieve a species goal. Species prescriptions, for example, could be stated that a minimum number of populations of a species or a minimum amount of a

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species habitat(s) must be maintained to meet the species goal.

Background

- You will be developing prescriptions only for Conservation Strategy species with “R” or “r” goals that are associated with riparian and upland habitats. These species and proposed Conservation Strategy goals are presented in Section II. Species with an “m” goal (Section III) are included in the packet for reference in the event, through the Conservation Strategy review process, some species goals are elevated from “m” to “R” or “r”. (A complete list of Conservation Strategy species and proposed species goals are presented in Sections III and IV of Workshop Packet 4).
- Population targets that have been proposed in ERP for riparian and upland species are presented in Section V. ERP targets are provided as background information. You may recommend alternate prescriptions for these species if you feel the proposed ERP targets are not sufficient to achieve species goals.
- A summary of existing habitat acreages and ERP habitat restoration and enhancement targets (Section VI) is provided to assist you in determining the possible need for additional habitat area to achieve a species goal. Ecological management zones referred to in the acreage tables are shown in Section VII.
- the legal status and scientific names of species is presented in Sections I and II of Workshop Packet 4.

Formulation of Species Prescriptions

The following are examples of how species prescriptions may be formulated. Prescription statements should describe a measurable species target and, where appropriate, the applicable geographic area.

Example 1

Increase the area of species “X” foraging habitat by 50% and nesting habitat by 20% throughout species “X” range in the CALFED solution area, and increase the area of

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rearing habitat by 10% throughout species "X" range in the CALFED solution area, with at least 50% of the increase in the Sacramento River Ecological Management Zone.

Example 2

Establish and maintain 5 additional self-sustaining populations of species "X" in the Delta Region.

Example 3

Increase the existing numbers of species "X" by 30% and sustain the increase for 5 consecutive years.

Example 4

Acquire and protect through purchase or conservation easement 75% of remaining habitat areas occupied by species "X" in the San Joaquin River Region.

Species Prescription Recommendations

- We request that your recommended species prescriptions be provided on the species prescription recommendations forms provided in Section VIII or, if you wish, in electronic form (WordPerfect or Word only).
- If you provide recommendations on hardcopy forms, please write legibly.
- To enable us to track development of the Conservation Strategy, please provide all of the information requested on the forms.
- Because the Conservation Strategy is a part of a legal process, please be sure to provide your rationale and any supporting documentation (e.g., existing recovery plan prescriptions or other literature) for your recommended prescriptions.
- Please fill out the Evaluation Species Prescription Checklist (Section VIII) on completion of your review. The checklist is to help us ensure that prescriptions have been considered for all riparian and upland Conservation Strategy species.

- If you have questions about conducting your review after the workshop, please call:

Pete Rawlings or Paul Cylinder (Jones & Stokes Associates): 916/737-3000

Mike Fris (U.S. Fish and Wildlife Service): 916/979-2109

Jeff Single (Department of Fish and Game): 209/243-4014

Marti Kie (CALFED): 916/654-4558

Submittal of Review Forms

- We must have all of your prescription recommendation forms and checklist returned by **February 3, 1999** to ensure that your recommendations will be considered in the Conservation Strategy.
- Please return your hardcopy recommendation forms and your species checklist by mail or fax to:

Pete Rawlings
Jones & Stokes Associates
2600 "V" St.
Sacramento, CA 95818-1914

fax: 916/737-3030

- If you wish to submit recommendation forms and a list of the species for which you reviewed goals electronically, please e-mail to:

peter@jsanet.com

SECTION II:
**RIPARIAN AND UPLAND SPECIES WITH
PROPOSED "R" AND "r" GOALS**

SECTION III:
RIPARIAN AND UPLAND SPECIES WITH
PROPOSED “m” GOALS

Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-----------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Mammals | | | | | | | | | | | | | | | | | | |
| San Joaquin kit fox | | | X | | | | | | | | | | | | | | X | |
| Giant kangaroo rat | | | X | | | | | | | | | | | | | | | |
| Ringtail | X | X | | | X | X | X | | | | | | | | | | | |
| Nelson's antelope ground squirrel | | | X | | | | | | | | | | | | | | | |
| Greater western mastiff-bat | X | X | X | | X | X | X | | | | | | | | | | | |
| Birds | | | | | | | | | | | | | | | | | | |
| Northern spotted owl | | | | | | | X | | | | | | | | | | | |
| Bald eagle | X | X | | | | | X | X | X | X | | | | | X | | | |
| California condor | | | X | | X | X | | | | | | | | | | | | |
| White-tailed kite | X | | X | | | | | | | | | X | X | X | X | X | X | X |
| Golden eagle | X | | X | | X | X | | | | | | | | | | | | |
| Mountain plover | | | X | | | | | | | | | | | | | | X | |
| Grasshopper sparrow | | | X | | | | | | | | | | | | | | X | |
| Tricolored blackbird | | | X | | | | | | | | | | | X | X | X | X | X |

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 VRA = Valley riverine aquatic
 MRA = Montane riverine aquatic
 L = Lacustrine
 SE = Saline emergent

TFE = Tidal freshwater emergent
 NFPE = Nontidal freshwater permanent emergent
 NSW = Natural seasonal wetlands
 MSW = Managed seasonal wetlands
 VFR = Valley/foothill riparian

MR = Montane riparian
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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-------------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Yellow-breasted chat | X | X | | | | | | | | | | | | | | | | |
| Long-eared owl | X | X | | | | X | | | | | | | | | | | | |
| Short-eared owl | | | X | | | | | | | | | X | X | X | X | X | | X |
| Western burrowing owl | | | X | | X | | | | | | | | | | | | X | |
| Long-billed curlew | | | X | | | | | X | | | | X | | X | X | X | X | X |
| Cooper's hawk | X | X | | | | X | X | | | | | | | | | | | |
| Northern harrier | | | X | | | | | | | | | X | X | X | X | X | X | X |
| Osprey | X | X | | | | X | X | X | X | X | X | | | | | | | |
| Double-crested cormorant (rookery) | X | X | | | | | | | | | | | | | | | | |
| Black-crowned night heron (rookery) | X | X | | | | | | | | | | | | X | | | | |
| Great blue heron (rookery) | X | X | | | | | | | | | | | | | | | | |
| Great egret (rookery) | X | X | | | | | | | | | | | | | | | | |
| Snowy egret (rookery) | X | X | | | | | | | | | | | | X | | | | |
| Reptiles | | | | | | | | | | | | | | | | | | |
| Alameda whipsnake | X | | X | | X | X | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|--------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Blunt-nosed leopard lizard | | | X | | | | | | | | | | | | | | | |
| San Joaquin whipsnake | | | X | | X | X | | | | | | | | | | | | |
| Western pond turtle | X | | | | | | | X | X | X | | | | X | | | | |
| Amphibians | | | | | | | | | | | | | | | | | | |
| California red-legged frog | X | X | X | | | | | X | X | X | | | X | X | X | | | |
| Limestone salamander | | | | | X | X | | | | | | | | | | | | |
| California tiger salamander | | | X | | | | | | | X | | | | X | | | | |
| Foothill yellow-legged frog | X | X | | | | | | X | X | | | | | | | | | |
| Invertebrates | | | | | | | | | | | | | | | | | | |
| Callippe silverspot | | | X | | | | | | | | | | | | | | | |
| Lange's metalmark | | | | X | | | | | | | | | | | | | | |
| Monarch butterfly (roost) | | | | | | X | | | | | | | | | | | | |
| Plants | | | | | | | | | | | | | | | | | | |
| Antioch Dunes evening-primrose | | | | X | | | | | | | | | | | | | | |
| Calistoga popcornflower | | | X | | | | | | | | | | | X | X | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-----------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Clara Hunt's milkvetch | | | X | | | X | | | | | | | | | | | | |
| Contra Costa wallflower | | | | X | | | | | | | | | | | | | | |
| El Dorado bedstraw | | | | | X | X | | | | | | | | | | | | |
| Hartweg's golden sunburst | | | X | | | X | | | | | | | | | | | | |
| Hoover's eriastrum | | | X | | | | | | | | | | | | | | | |
| Large-flowered fiddleneck | | | X | | | X | | | | | | | | | | | | |
| Layne's ragwort | | | | | X | X | | | | | | | | | | | | |
| Marin western flax | | | X | | X | | | | | | | | | | | | | |
| Pallid manzanita | | | | | X | | | | | | | | | | | | | |
| Pine Hill ceanothus | | | | | X | X | | | | | | | | | | | | |
| Pine Hill flannelbush | | | | | X | X | | | | | | | | | | | | |
| San Benito evening-primrose | | | | | X | X | | | | | | | | | | | | |
| San Joaquin adobe sunburst | | | X | | | | | | | | | | | | | | | |
| San Joaquin woollythreads | | | X | | | | | | | | | | | | X | | | |
| Showy Indian clover | | | X | | | | | | | | | | | | X | | | |

¹TPA = Tidal perennial aquatic
 VRA = Valley riverine aquatic
 MRA = Montane riverine aquatic
 L = Lacustrine
 SE = Saline emergent

TFE = Tidal freshwater emergent
 NFPE = Nontidal freshwater permanent emergent
 NSW = Natural seasonal wetlands
 MSW = Managed seasonal wetlands
 VFR = Valley/foothill riparian

MR = Montane riparian
 G = Grassland
 IDS = Inland dune scrub
 US = Upland scrub
 VFW = Valley/foothill woodland

MWF = Montane woodland and forest
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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|---------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Sonoma alopecurus | X | | | | | | | | | | | | | X | | | | |
| Sonoma spineflower | | | X | | | | | | | | | | | | | | | |
| Stebbins' morning-glory | | | | | X | X | | | | | | | | | | | | |
| Tiburon Indian paintbrush | | | X | | | | | | | | | | | | | | | |
| Tiburon jewelflower | | | X | | | | | | | | | | | | | | | |
| Tiburon Mariposa lily | | | X | | | | | | | | | | | | | | | |
| White-rayed pentachaeta | | | X | | | | | | | | | | | | | | | |
| Baker's larkspur | | | | | X | | | | | | | | | | | | | |
| Baker's manzanita | | | | | X | | | | | | | | | | | | | |
| California vervain | X | | | | | X | | | | | | | | | | | | |
| Indian Valley brodiaea | | | X | | X | | X | | | | | | | | | | | |
| Ione buckwheat | | | | | X | | | | | | | | | | | | | |
| Irish Hill buckwheat | | | | | X | | | | | | | | | | | | | |
| Marin checkerbloom | | | X | | X | | | | | | | | | | | | | |
| Mason's ceanothus | | | | | X | | | | | | | | | | | | | |
| Mt. Diablo bird's-beak | | | | | X | | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | | |
|----------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|--|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A | |
| North Coast semaphore grass | | | | | | | X | | | | | | | | X | X | | | |
| Rock sanicle | | | X | | X | | X | | | | | | | | | | | | |
| Santa Cruz tarplant | | | X | | | | | | | | | | | | | | | | |
| Yellow larkspur | | | X | | X | | | | | | | | | | | | | | |
| Ione manzanita | | | | | X | | | | | | | | | | | | | | |
| Rawhide Hill onion | | | | | | X | | | | | | | | | | | | | |
| Alkali milkvetch | | | X | | | | | | | | | | | | X | | | | |
| Arburua Ranch jewelflower | | | X | | X | | | | | | | | | | | | | | |
| Ben Lomond buckwheat | | | | | X | X | | | | | | | | | | | | | |
| Big tarplant | | | X | | | | | | | | | | | | | | | | |
| Brittlescale | | | X | | | | | | | | | | | | X | | | | |
| California beaked-rush | | | | | | | X | | | | | | | X | | | | | |
| Congdon's lomatium | | | | | X | X | | | | | | | | | | | | | |
| Congdon's tarplant | | | X | | | | | | | | | | | | | | | | |
| Contra Costa manzanita | | | | | X | | | | | | | | | | | | | | |
| Diablo helianthella | | | X | | | | | | | | | | | | | | | | |
| Diamond-petaled California poppy | | | X | | | | | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Ferris' milkvetch | | | X | | | | | | | | | | | | X | | | |
| Heartscale | | | X | | X | | | | | | | | | | | | | |
| Heckard's peppergrass | | | X | | | | | | | | | | | | | | | |
| Hospital Canyon larkspur | | | | | X | X | | | | | | | | | | | | |
| Lesser saltscale | | | X | | | | | | | | | | | | X | | | |
| Lost Hills crownscale | | | X | | | | | | | | | | | | X | | | |
| Mad-dog skullcap | | | | | | | X | | | | | | | X | X | | | |
| Mariposa clarkia | X | | | | | X | | | | | | | | | | | | |
| Marsh checkerbloom | X | | | | | | | | | | | | | X | | | | |
| Merced phacelia | | | X | | | | | | | | | | | | | | | |
| Mt. Diablo jewelflower | | | X | | X | | | | | | | | | | | | | |
| Mt. Diablo manzanita | | | | | X | | | | | | | | | | | | | |
| Mt. Hamilton coreopsis | | | | | | X | | | | | | | | | | | | |
| Mt. Hamilton jewelflower | | | | | X | X | | | | | | | | | | | | |
| Napa western flax | | | | | X | | | | | | | | | | | | | |
| Panoche peppergrass | | | X | | | | | | | | | | | | | | | |
| Red Hills ragwort | | | | | | X | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
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| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|------------------------------|---------------------------------|--------|---|-----|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | IDS | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Red-flowered lotus | | | X | | | X | | | | | | | | | | | | |
| San Joaquin spearscale | | | X | | | | | | | | | | | | X | | | |
| Saw-toothed lewisia | | X | | | | | X | | | | | | | | | | | |
| Shaggyhair lupine | | | | | X | X | | | | | | | | | | | | |
| Sharsmith's harebell | | | | | X | | | | | | | | | | | | | |
| Showy madia | | | X | | | X | | | | | | | | | | | | |
| Slough thistle | X | | | | | | | | | | | | X | X | X | | | |
| Spiny-sepaled button-celery | | | X | | | | | | | | | | | | X | | | |
| Henderson's bent grass | | | X | | | | | | | | | | | | X | | | |
| San Antonio Hills monardella | | | | | X | X | | | | | | | | | | | | |

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SECTION IV:

**DESCRIPTION OF
NCCP HABITAT TYPES**

NCCP Habitat Type Descriptions

| NCCP Habitat Type | Habitat Description |
|--|--|
| Tidal perennial aquatic | Tidal perennial aquatic habitat is defined as deep water (greater than 3 meters in depth from mean low low tide) aquatic, shallow (less than or equal to 3 meters in depth from mean low low tide) aquatic, and unvegetated intertidal (i.e., tideflats) zones of estuarine bays, river channels, and sloughs. |
| Lacustrine | Lacustrine habitat is defined as permanent bodies of water that do not support emergent vegetation and are not subject to tidal exchange, including lakes, ponds, oxbows, gravel pits, and flooded islands. |
| Saline emergent | Saline emergent habitat is defined to include portions of San Francisco, San Pablo, and Suisun Bays and the Delta that support emergent wetland plant species that are tolerant of saline or brackish conditions within the intertidal zone or on lands that historically were subject to tidal exchange (i.e., diked wetlands). |
| Tidal freshwater emergent | Tidal freshwater emergent habitat is defined to include portions of the intertidal zones of the Delta that support emergent wetland plant species that are not tolerant of saline or brackish conditions. |
| Nontidal freshwater permanent emergent | Nontidal freshwater permanent emergent habitat is defined to include permanent (natural and managed) wetlands, including meadows, dominated by wetland plant species that are not tolerant of saline or brackish conditions. |

| | |
|--------------------------|---|
| Natural seasonal wetland | Natural seasonal wetland habitat is defined to include vernal pools and other non-managed seasonal wetlands with natural hydrology that are dominated by herbaceous vegetation and annually pond surface water or maintain saturated soils at the ground surface for a portion of the year of sufficient duration to support facultative or obligate wetland plant species. |
| Managed seasonal wetland | Managed seasonal wetland habitat is defined to include wetlands dominated by native or non-native herbaceous plants, excluding croplands farmed for profit (e.g., corn and rice), that are flooded and drained by land managers during specific periods to enhance habitat values for specific wildlife species. Ditches and drains associated with managed seasonal wetlands are included in this habitat type. |
| Valley riverine aquatic | Valley riverine aquatic habitat is defined to include the water column of flowing streams and rivers in low-gradient channel reaches below approximately 300 feet in elevation that are not tidally influenced, including associated shaded riverine aquatic, pool, riffle, run, and unvegetated channel substrate (including seasonally exposed channel bed) habitat features, and sloughs, backwaters, overflow channels, and flood bypasses hydrologically connected to stream and river channels. |

| | |
|--------------------------|--|
| Montane riverine aquatic | Montane riverine aquatic habitat is defined to include the water column of flowing streams and rivers above approximately 300 feet in elevation, including associated shaded riverine aquatic, pool, riffle, run, and unvegetated channel substrate (including seasonally exposed channel bed) habitat features, and sloughs, backwaters, and overflow channels hydrologically connected to stream and river channels. |
| Valley/foothill riparian | Valley/foothill riparian habitat is defined to include all successional stages of woody vegetation generally dominated by willow, Fremont cottonwood, valley oak, or sycamore within the active and historical floodplains of low-gradient reaches of streams and rivers generally below 300 feet in elevation. |
| Montane riparian | Montane riparian habitat is defined to include all successional stages of woody vegetation such as willow, black cottonwood, white alder, birch, and dogwood within the active floodplains of moderate to high gradient reaches of streams and rivers generally above 300 feet in elevation. |
| Grassland | Grassland habitat is defined to include upland vegetation communities dominated by introduced and native annual and perennial grasses, including unirrigated and irrigated pasture lands. |
| Inland dune scrub | Inland dune scrub habitat consists of vegetated stabilized sand dunes associated with river and estuarine systems. |
| Upland scrub | Upland scrub habitat is defined to include habitat areas that are dominated by shrubs characteristic of coastal scrub and chaparral communities. |

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| | |
|-------------------------------------|--|
| Valley/foothill woodland and forest | Valley/foothill woodland and forest habitat is defined to include non-riparian forest, woodland, and savanna below 300 feet in elevation. These vegetation communities are commonly dominated by valley oak, blue oak, interior live oak, coast live oak, and/or foothill pine. |
| Montane woodland and forest | Montane woodland and forest habitat is defined to include non-riparian forest and woodland above 300 feet in elevation. These vegetation communities are commonly dominated by pine, fir, cedar, and/or black oak. |
| Upland cropland | Upland cropland habitat is defined to include agricultural lands farmed for grain, field, truck, and other crops that are not seasonally flooded. |
| Seasonally flooded agriculture | Seasonally flooded agriculture habitat is defined to include agricultural lands farmed for grain, field, truck, rice, and other crops that require seasonal flooding for durations of a least 1 week as a management practice (e.g., pest control and irrigation) or are purposefully flooded seasonally to enhance habitat values for specific wildlife species (e.g., duck clubs). Agricultural ditches and drains associated with maintaining seasonally flooded agriculture are included in this habitat type. |

SECTION V:
ECOSYSTEM RESTORATION PROGRAM
SPECIES TARGETS

**Ecosystem Restoration Program Targets for Evaluation Species
 Associated with Riparian and Upland Habitats**

| Evaluation Species | Proposed Goal | | | Ecosystem Restoration Program Prescription |
|------------------------------|---------------|-----|-----|--|
| | "R" | "r" | "m" | |
| Swainson's hawk | | X | | Restore nesting density to nine nesting pairs per 100 square miles; improve foraging habitat on Delta land; and increase riparian forest and oak woodlands. |
| Riparian brush rabbit | | X | | Increase the population of riparian brush rabbits by 200 percent over current estimates so that a census of the riparian brush rabbit population would be two times higher than the current estimate of 213 to 312 individuals. |
| Greater sandhill crane | | X | | Establish two new suitable roosting habitat areas in the Delta; enhance foraging habitat on agricultural lands; restore perennial grasslands in the East Delta Ecological Management Unit, and restore seasonally managed nontidal marshes in the East Delta Ecological Management Unit. |
| Western yellow-billed cuckoo | | X | | Improve riparian forest habitat in the Delta. |
| Bank swallow | | X | | Protect existing nesting colonies and the ecological processes that contribute to the formation and maintenance of vertical stream banks. |
| California red-legged frog | | | X | Create viable, self-sustaining populations of red-legged frog while enhancing existing and restored aquatic habitats for other native species. |

CALFED CONSERVATION STRATEGY
SPECIES REVIEW WORKSHOP
January 27, 1999

| | | | | |
|-----------------------------|--|--|---|---|
| California tiger salamander | | | X | Increase populations of amphibians particularly tiger salamanders and spadefoot toads by increasing natural flood plains, stream meander, seasonal pools, and perennial grasslands. |
|-----------------------------|--|--|---|---|

SECTION VI:

**EXISTING HABITAT ACREAGES AND ERP
HABITAT RESTORATION AND ENHANCEMENT
TARGETS**

Habitat Area for Ecological Management Zones and Units based on the California Central Valley Wetlands and Riparian GIS (Version 1.0)

Aquatic and Wetland Habitats

| Region | Management Zone | Management Unit | Aquatic | Saline emergent | Seasonal wetland | Freshwater permanent emergent wetland | Area Covered by Data (%) | |
|-----------------------------|-------------------------------|------------------------------|--------------------------|-----------------|------------------|---------------------------------------|--------------------------|----|
| Delta | Delta | CENTRAL AND WEST DELTA | 32,586 | 39 | 548 | 5,089 | 100 | |
| | | EAST DELTA | 3,457 | 0 | 642 | 1,140 | 100 | |
| | | SOUTH DELTA | 5,670 | 0 | 415 | 624 | 100 | |
| | | NORTH DELTA | 10,993 | 2 | 4,645 | 4,650 | 100 | |
| | | TOTAL | 52,706 | 41 | 6,250 | 11,503 | 100 | |
| Bay | Suisun Marsh/SF Bay | SUISUN BAY | 41,418 | 34,373 | 12,871 | 3,144 | 70 | |
| | | NAPA RIVER | 12,109 | 4,832 | 453 | 1,075 | 36 | |
| | | PETALUMA RIVER | 1,945 | 4,358 | 159 | 359 | 83 | |
| | | SAN PABLO BAY | 70,973 | 2,105 | 1 | 6 | 100 | |
| | | SONOMA CREEK | 853 | 1,532 | 315 | 205 | 39 | |
| | | TOTAL | 127,298 | 47,200 | 13,799 | 4,789 | 59 | |
| Sacramento River | Sacramento River | SACRAMENTO RIVER | 13,041 | 0 | 1,998 | 1,912 | 92 | |
| | | American River | 2,171 | 0 | 1,893 | 1,013 | 92 | |
| | | MORRISON CREEK WATERSHED | 755 | 0 | 446 | 131 | 100 | |
| | Butte Basin | ANTELOPE CREEK | | | | | 0 | |
| | | BUTTE CREEK | 6 | 0 | 2 | 6 | 4 | |
| | | BUTTE SINK | 2,673 | 0 | 12,122 | 6,756 | 84 | |
| | | DEER CREEK | | | | | 0 | |
| | | MILL CREEK | | | | | 0 | |
| | | PAYNES CREEK | | | | | 0 | |
| | | PINE/ROCK/BIG CHICO CREEKS | | | | | 0 | |
| | Colusa Basin | ELDER CREEK | 513 | 0 | 18 | 37 | 11 | |
| | | SOUTH COLUSA BASIN | 3,478 | 0 | 14,350 | 3,942 | 81 | |
| | | STONY CREEK | 1,069 | 0 | 293 | 100 | 68 | |
| | | THOMES CREEK | 1,063 | 0 | 47 | 70 | 41 | |
| | Cottonwood Creek Basin | LOWER COTTONWOOD CREEK | | | | | 0 | |
| | | UPPER COTTONWOOD CREEK | | | | | 0 | |
| | Feater River/Sutter Basin | BEAR RIVER | 645 | 0 | 976 | 594 | 100 | |
| | | FEATHER RIVER | 7,542 | 0 | 674 | 2,058 | 100 | |
| | | HONCUT CREEK | 372 | 0 | 789 | 312 | 52 | |
| | | SUTTER BASIN | 1,426 | 0 | 2,840 | 1,408 | 100 | |
| | | YUBA RIVER | 1,675 | 0 | 90 | 218 | 24 | |
| | North Sacramento Valley Basin | BEAR CREEK | | | | | 0 | |
| | | BATTLE CREEK | | | | | 0 | |
| | | CLEAR CREEK | | | | | 0 | |
| | | COW CREEK | | | | | 0 | |
| | | NORTH SACRAMENTO VALLEY | | | | | 0 | |
| | Yolo Basin | CACHE CREEK | 1,785 | 0 | 1,669 | 640 | 79 | |
| | | PUTAH CREEK | 165 | 0 | 90 | 188 | 91 | |
| | | YOLO BASIN | 534 | 0 | 907 | 141 | 94 | |
| | Total | | 38,911 | 0 | 39,206 | 19,525 | 48 | |
| | San Joaquin River | San Joaquin River | SAN JOAQUIN RIVER BASIN | 5,212 | 0 | 1,754 | 2,799 | 87 |
| | | | CHOWCHILLA/FRESNO RIVERS | 3,958 | 0 | 1,849 | 1,714 | 78 |
| East San Joaquin Basin | | EAST SAN JOAQUIN BASIN | | | | | 0 | |
| | | MERCED RIVER | 1,567 | 0 | 205 | 545 | 71 | |
| | | STANISLAUS RIVER | 983 | 0 | 324 | 492 | 77 | |
| | | TUOLUMNE RIVER | 7,796 | 0 | 451 | 566 | 80 | |
| | | CONSUMNES RIVER | 1,894 | 0 | 1,536 | 783 | 29 | |
| East Side Delta Tributaries | | EASTSIDE DELTA LOWLANDS FAN | 3,764 | 0 | 1,382 | 396 | 77 | |
| | | LOWER WEST SAN JOAQUIN BASIN | 13,746 | 0 | 31,870 | 9,893 | 83 | |
| | | UPPER WEST SAN JOAQUIN BASIN | 785 | 0 | 100 | 40 | 9 | |
| | | TOTAL | 34,494 | 0 | 37,719 | 14,427 | 57 | |

Notes:

Source: California Department of Fish and Game (1997)
 based on 1993 Landsat Thematic Mapper imagery
 blank cells indicate lack of data

Habitat Area for Ecological Management Zones and Units based on the California Central Valley Wetlands and Riparian GIS (Version 1.0)

Riparian and Upland Habitats

| Region | Management Zone | Management Unit | Valley/ foothill riparian | Upland woodland and scrub | Grassland | Area Covered by Data (%) |
|-----------------------------|-------------------------------|-------------------------------------|---------------------------------|---------------------------------|---------------|-----------------------------------|
| Delta | Delta | CENTRAL AND WEST DELTA | 1,032 | 246 | 33,658 | 100 |
| | | EAST DELTA | 639 | 2,232 | 10,963 | 100 |
| | | SOUTH DELTA | 870 | 261 | 40,274 | 100 |
| | | <u>NORTH DELTA</u> | <u>1,379</u> | <u>1,614</u> | <u>42,359</u> | <u>100</u> |
| | | TOTAL | 3,919 | 4,353 | 127,254 | 100 |
| Bay | Suisun Marsh/SF Bay | SUISUN BAY | 276 | 1,105 | 69,501 | 70 |
| | | NAPA RIVER | 931 | 5,498 | 27,933 | 36 |
| | | PETALUMA RIVER | 347 | 5,840 | 51,893 | 83 |
| | | SAN PABLO BAY | 2 | 57 | 46 | 100 |
| | | <u>SONOMA CREEK</u> | <u>359</u> | <u>1,390</u> | <u>20,863</u> | <u>39</u> |
| | | TOTAL | 1,916 | 13,890 | 170,237 | 59 |
| | | | | | | |
| Sacramento River | Sacramento River | SACRAMENTO RIVER | 15,314 | 362 | 20,406 | 92 |
| | | American River | 3,485 | 25,657 | 113,970 | 92 |
| | Butte Basin | MORRISON CREEK WATERSHED | 468 | 6,284 | 80,541 | 100 |
| | | ANTELOPE CREEK | | | | 0 |
| | | BUTTE CREEK | 16 | 270 | 5,553 | 4 |
| | | BUTTE SINK | 5,057 | 13,985 | 105,593 | 84 |
| | | DEER CREEK | | | | 0 |
| | | MILL CREEK | | | | 0 |
| | | PAYNES CREEK | | | | 0 |
| | | PINE/ROCK/BIG CHICO CREEKS | | | | 0 |
| | Colusa Basin | ELDER CREEK | 278 | 448 | 8,344 | 11 |
| | | SOUTH COLUSA BASIN | 638 | 1,968 | 127,767 | 81 |
| | | STONY CREEK | 160 | 222 | 8,205 | 68 |
| | | THOMES CREEK | 1,004 | 832 | 35,764 | 41 |
| | Cottonwood Creek Basin | LOWER COTTONWOOD CREEK | | | | 0 |
| | | UPPER COTTONWOOD CREEK | | | | 0 |
| | Feater River/Sutter Basin | BEAR RIVER | 1,217 | 1,527 | 45,351 | 100 |
| | | FEATHER RIVER | 6,798 | 332 | 21,102 | 100 |
| | | HONCUT CREEK | 786 | 9,627 | 38,043 | 52 |
| | | SUTTER BASIN | 573 | 8,306 | 31,994 | 100 |
| | | YUBA RIVER | 404 | 2,541 | 20,911 | 24 |
| | North Sacramento Valley Basin | BEAR CREEK | | | | 0 |
| | | BATTLE CREEK | | | | 0 |
| | | CLEAR CREEK | | | | 0 |
| | | COW CREEK | | | | 0 |
| | | NORTH SACRAMENTO VALLEY | | | | 0 |
| | | | | | | |
| | Yolo Basin | CACHE CREEK | 406 | 1,081 | 27,365 | 79 |
| | | PUTAH CREEK | 198 | 1,448 | 13,327 | 91 |
| | | <u>YOLO BASIN</u> | <u>535</u> | <u>1,051</u> | <u>74,427</u> | <u>94</u> |
| | Total | | 37,337 | 75,941 | 778,666 | 48 |
| | San Joaquin River | San Joaquin River | SAN JOAQUIN RIVER BASIN | 3,758 | 135 | 40,750 |
| CHOWCHILLA/FRESNO RIVERS | | | 611 | 1,453 | 223,637 | 78 |
| East San Joaquin Basin | | EAST SAN JOAQUIN BASIN | | | | 0 |
| | | MERCED RIVER | 1,851 | 294 | 68,945 | 71 |
| | | STANISLAUS RIVER | 2,235 | 440 | 27,944 | 77 |
| | | TUOLUMNE RIVER | 2,266 | 1,695 | 95,826 | 80 |
| | | CONSUMNES RIVER | 3,415 | 4,235 | 169,574 | 29 |
| East Side Delta Tributaries | | EASTSIDE DELTA LOWLANDS FAN | 2,662 | 3,861 | 204,161 | 77 |
| | | LOWER WEST SAN JOAQUIN BASIN | 594 | 587 | 156,688 | 83 |
| | | <u>UPPER WEST SAN JOAQUIN BASIN</u> | <u>8</u> | <u>71</u> | <u>49,952</u> | <u>9</u> |
| Total | | | 13,643 | 12,636 | 996,727 | 57 |

Notes:

Source: California Department of Fish and Game (1997)
 based on 1993 Landsat Thematic Mapper imagery
 blank cells indicate lack of data

Habitat Area for Ecological Management Zones and Units based on the California Central Valley Wetlands and Riparian GIS (Version 1.0)

Agricultural Habitats

| Region | Management Zone | Management Unit | Flooded agriculture | Upland cropland | Orchards and vineyards | Developed and disturbed | Area Covered by Data (%) | |
|-----------------------------|-------------------------------|-------------------------------------|--------------------------|-----------------|------------------------|-------------------------|--------------------------|----|
| Delta | Delta | CENTRAL AND WEST DELTA | 18,686 | 94,787 | 4,216 | 18,933 | 100 | |
| | | EAST DELTA | 6,312 | 58,633 | 3,232 | 11,972 | 100 | |
| | | SOUTH DELTA | 2,070 | 97,988 | 7,116 | 20,746 | 100 | |
| | | <u>NORTH DELTA</u> | <u>14,969</u> | <u>118,331</u> | <u>8,961</u> | <u>29,468</u> | <u>100</u> | |
| | | TOTAL | 42,038 | 369,739 | 23,525 | 81,118 | 100 | |
| Bay | Suisun Marsh/SF Bay | SUISUN BAY | 87 | 1,413 | 4,638 | 28,333 | 70 | |
| | | NAPA RIVER | 29 | 2,432 | 22,575 | 18,889 | 36 | |
| | | PETALUMA RIVER | 19 | 3,824 | 87 | 9,267 | 83 | |
| | | SAN PABLO BAY | 0 | 0 | 0 | 232 | 100 | |
| | | <u>SONOMA CREEK</u> | <u>146</u> | <u>4,915</u> | <u>5,250</u> | <u>6,023</u> | <u>39</u> | |
| | | TOTAL | 281 | 12,583 | 32,550 | 62,744 | 59 | |
| Sacramento River | Sacramento River | SACRAMENTO RIVER | 27,992 | 54,271 | 43,048 | 38,394 | 92 | |
| | | AMERICAN BASIN | 63,294 | 18,642 | 857 | 65,538 | 92 | |
| | Butte Basin | MORRISON CREEK WATERSHED | 175 | 12,059 | 807 | 36,534 | 100 | |
| | | ANTELOPE CREEK | | | | | 0 | |
| | | BUTTE CREEK | 0 | 0 | 2 | 231 | 4 | |
| | | BUTTE SINK | 139,411 | 58,263 | 47,397 | 32,948 | 84 | |
| | | DEER CREEK | | | | | 0 | |
| | | MILL CREEK | | | | | 0 | |
| | | PAYNES CREEK | | | | | 0 | |
| | | PINE/ROCK/BIG CHICO CREEKS | | | | | 0 | |
| | | ELDER CREEK | 84 | 6,610 | 3,124 | 4,934 | 11 | |
| | | SOUTH COLUSA BASIN | 188,440 | 169,672 | 14,960 | 125,155 | 81 | |
| | STONY CREEK | 1,340 | 20,350 | 7,465 | 9,411 | 68 | | |
| | THOMES CREEK | 280 | 14,550 | 13,866 | 9,166 | 41 | | |
| | Cottonwood Creek Basin | LOWER COTTONWOOD CREEK | | | | | 0 | |
| | | UPPER COTTONWOOD CREEK | | | | | 0 | |
| | Feater River/Sutter Basin | BEAR RIVER | 19,930 | 16,669 | 9,598 | 10,516 | 100 | |
| | | FEATHER RIVER | 6,175 | 18,850 | 17,947 | 12,688 | 100 | |
| | | HONCUT CREEK | 25,131 | 8,096 | 3,784 | 6,735 | 52 | |
| | | SUTTER BASIN | 91,193 | 50,108 | 16,398 | 25,859 | 100 | |
| | | YUBA RIVER | 972 | 3,126 | 3,390 | 6,125 | 24 | |
| | North Sacramento Valley Basin | BEAR CREEK | | | | | 0 | |
| | | BATTLE CREEK | | | | | 0 | |
| | | CLEAR CREEK | | | | | 0 | |
| | | COW CREEK | | | | | 0 | |
| | | NORTH SACRAMENTO VALLEY | | | | | 0 | |
| | Yolo Basin | CACHE CREEK | 26,487 | 56,049 | 3,893 | 43,501 | 79 | |
| | | PUTAH CREEK | 4,953 | 28,119 | 2,928 | 23,366 | 91 | |
| | | <u>YOLO BASIN</u> | <u>8,037</u> | <u>24,482</u> | <u>2,511</u> | <u>41,293</u> | <u>94</u> | |
| | Total | 603,895 | 559,916 | 191,974 | 492,394 | 48 | | |
| | San Joaquin River | San Joaquin River | SAN JOAQUIN RIVER BASIN | 3,483 | 47,742 | 17,635 | 16,886 | 87 |
| | | East San Joaquin Basin | CHOWCHILLA/FRESNO RIVERS | 17,291 | 132,002 | 151,010 | 127,911 | 78 |
| EAST SAN JOAQUIN BASIN | | | | | | | 0 | |
| MERCED RIVER | | | 702 | 43,371 | 72,034 | 38,926 | 71 | |
| STANISLAUS RIVER | | | 259 | 22,555 | 42,941 | 17,848 | 77 | |
| TUOLUMNE RIVER | | | 1,602 | 76,955 | 84,773 | 65,010 | 80 | |
| East Side Delta Tributaries | | CONSUMNES RIVER | 559 | 37,662 | 8,976 | 10,046 | 29 | |
| | | EASTSIDE DELTA LOWLANDS FAN | 6,133 | 116,893 | 94,308 | 51,829 | 77 | |
| West San Joaquin Basin | | LOWER WEST SAN JOAQUIN BASIN | 39,901 | 175,730 | 33,218 | 93,889 | 83 | |
| | | <u>UPPER WEST SAN JOAQUIN BASIN</u> | <u>21</u> | <u>4,818</u> | <u>2,609</u> | <u>10,308</u> | <u>9</u> | |
| Total | | 66,466 | 609,988 | 489,869 | 415,767 | 57 | | |

Notes:

Source: California Department of Fish and Game (1997)
 based on 1993 Landsat Thematic Mapper imagery
 blank cells indicate lack of data

CALFED CONSERVATION STRATEGY
SPECIES REVIEW WORKSHOP
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Summary of Ecosystem Restoration Program Habitat Restoration and Enhancement Targets

| Habitat Type or Feature | Habitat Subtype | Region | | | | | | | | | |
|-------------------------|---------------------------|----------|----------|----------------|----------|------------------|----------|-------------------|----------|----------|----------------|
| | | Delta | | Bay | | Sacramento River | | San Joaquin River | | Total | |
| | | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced |
| Tidal perennial aquatic | Shallow-water | 7,500 A | 0 | 1,500 A | 0 | 0 | | | | 9,000 A | |
| Saline emergent | | 0 | 0 | 7,500-12,000 A | 0 | 0 | 0 | 0 | 0 | 0 | 7,500-12,000 A |
| Tidal sloughs | Tidal perennial aquatic | 75-160 M | 0 | 15-30 M | 0 | 0 | 0 | 0 | 0 | 90-190 M | 0 |
| | Valley/foot hill riparian | | | | | | | | | | |
| | Tidal freshwater emergent | | | | | | | | | | |
| | Saline emergent | | | | | | | | | | |

Notes: A = acres M = Miles of channel.

* Values are estimated.

**Estimated to be 10% of seasonal wetland acres in the American River Basin Ecological Management Zone.

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CALFED CONSERVATION STRATEGY
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| Habitat | Type or Feature | Habitat | | Delta | | Bay | | Sacramento River | | San Joaquin River | | Total | |
|---------------------------|-------------------------------|-----------------|---------------------------|----------|----------|----------|----------|------------------|----------|-------------------|-----------|----------|---|
| | | Subtype | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | |
| Channel | Valley/foot hill riparian | 200 A | Tidal freshwater emergent | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Tidal | freshwater emergent | | | | | | | | | | | | |
| Tidal | freshwater emergent | 30,000-45,000 A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nontidal | freshwater permanent emergent | 17,000 A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lacustrine | Deep water | 1,600 A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Managed seasonal wetland | | 28,000 A | 4,000 A | 0 | 58,000 A | 0 | 46,890 A | 0 | 1,400 A | 28,000 A | 106,290 A | 0 | 0 |
| Natural seasonal wetlands | Vernal pools | 100 A* | 0 | 100 A | 0 | 0 | 0 | 0 | 0 | 200 A* | 0 | 0 | 0 |

Notes: A = acres M = Miles of channel.

* Values are estimated.

** Estimated to be 10% of seasonal wetland acres in the American River Basin Ecological Management Zone.

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CALFED CONSERVATION STRATEGY
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| Habitat Type or Feature | Habitat Subtype | Region | | | | | | | | | |
|-------------------------|--------------------------------|---------------|----------|----------|---------------|------------------|----------------|-------------------|---------------|----------------|-------------------|
| | | Delta | | Bay | | Sacramento River | | San Joaquin River | | Total | |
| | | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced |
| Riparian | Valley/foot hill | 43-75 M | 500 A | 40-60 M | 0 | 150 M | 8,000-14,000 A | 50 M | 2,740-3,240 A | 283-335 M | 11,240-17,740 A |
| | Montane | 500 A | | | | | | | | 500 A | |
| Grassland | Perennial | 4,000-6,000 A | 0 | 4,000 A | 0 500-1,000 A | 0 | 4,400 A** | 0 | 0 | 8,000-10,000 A | 4,900-5,400 A |
| | Annual | | | | | | | | | | |
| Inland dune scrub | | 0 | 50-100 A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50-100 A |
| Agricultural | Seasonally flooded agriculture | 0 | 40000 | 0 | 0 | 0 | 298,643 A | 0 | 3,000-4,000 A | 0 | 341,643-377,643 A |
| | Upland cropland | | | | | | | | | | |

Notes: A = acres M = Miles of channel.

* Values are estimated.

**Estimated to be 10% of seasonal wetland acres in the American River Basin Ecological Management Zone.

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Comparison of Existing Habitat Area and ERP Target Habitat Area for the Delta Ecological Management Zone

| Existing Habitat Area (acres) | Central and West Delta | East Delta | North Delta | South Delta | Total |
|---------------------------------------|------------------------|---------------|----------------|----------------|----------------|
| Aquatic | 32,586 | 3,457 | 10,993 | 5,670 | 52,706 |
| Saline emergent | 39 | 0 | 2 | 0 | 41 |
| Seasonal wetland | 548 | 642 | 4,645 | 415 | 6,250 |
| Freshwater permanent emergent wetland | 5,089 | 1,140 | 4,650 | 624 | 11,503 |
| Valley/foothill riparian | 1,032 | 639 | 1,379 | 870 | 3,919 |
| Upland woodland and scrub | 246 | 2,232 | 1,614 | 261 | 4,353 |
| Grassland | 33,658 | 10,963 | 42,359 | 40,274 | 127,254 |
| Upland cropland | 113,474 | 64,945 | 133,299 | 100,059 | 411,777 |
| Orchards and vineyards | 4,216 | 3,232 | 8,961 | 7,116 | 23,525 |
| Developed and disturbed | 18,933 | 11,972 | 29,468 | 20,746 | 81,118 |
| Total | 209,819 | 99,223 | 237,370 | 176,034 | 722,446 |

| Target Additional Area (acres) | Central and West Delta | East Delta | North Delta | South Delta | Total |
|---------------------------------------|------------------------|---------------|---------------|---------------|---------------------|
| Aquatic | 3,100 | 1,500 | 2,500 | 2,500 | 9,600 |
| Saline emergent | 12,401 | 7,097 | 14,567 | 10,935 | 45,000 * |
| Seasonal wetland | 8,000 | 6,000 | 4,000 | 12,000 | 30,000 |
| Freshwater permanent emergent wetland | 10,000 | 3,000 | 3,000 | 4,000 | 20,000 |
| Valley/foothill riparian | 0 | 200 | 700 | 400 | 1,300 **, **** |
| Upland woodland and scrub | | | | | |
| Grassland | | | | | *** |
| Upland cropland | | | | | |
| Orchards and vineyards | | | | | |
| Developed and disturbed | | | | | |
| Total | 33,501 | 17,797 | 24,767 | 29,835 | 105,900 **** |

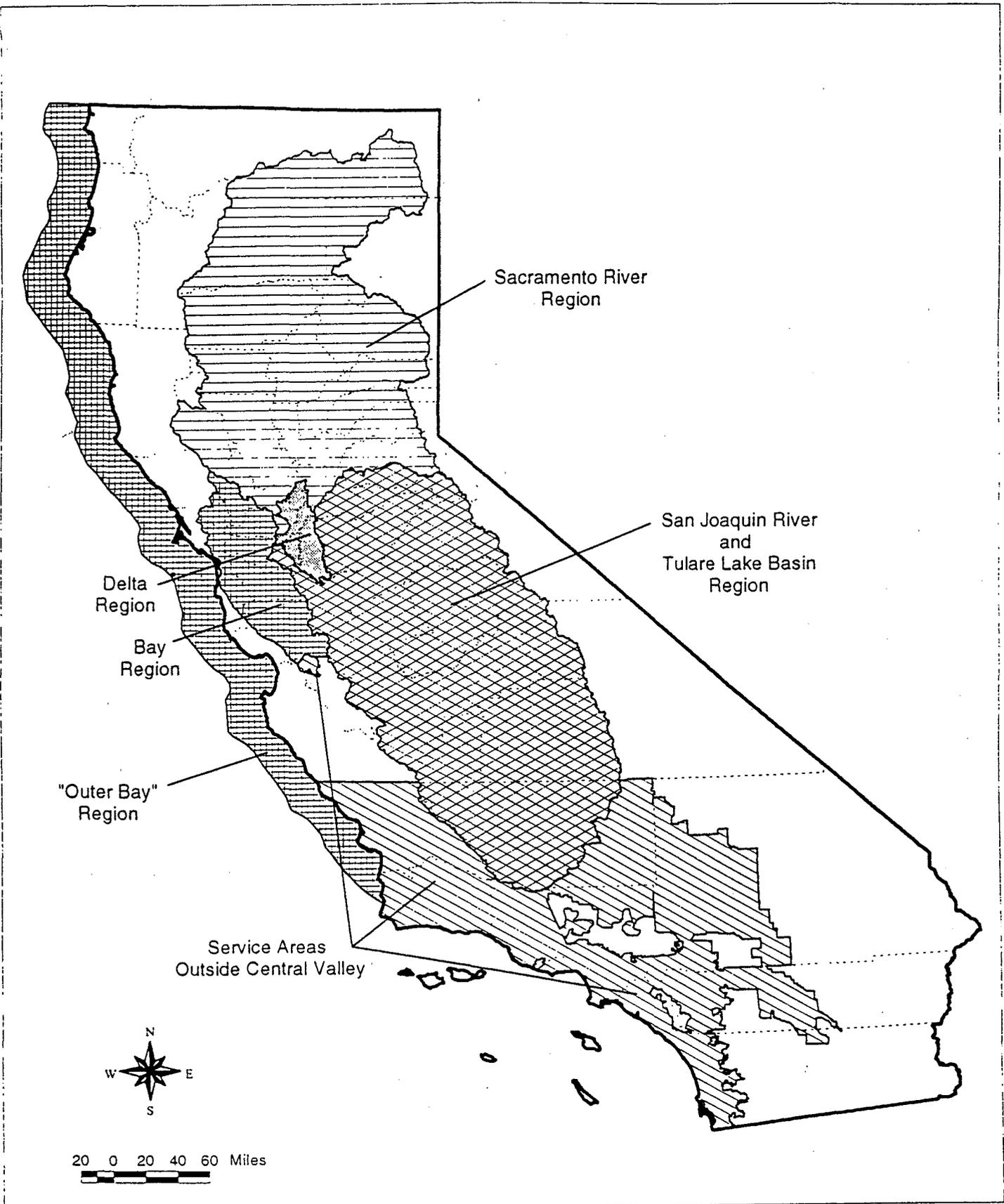
| Area after ERP (acres) | Central and West Delta | East Delta | North Delta | South Delta | Total |
|---------------------------------------|------------------------|---------------|----------------|----------------|----------------|
| Aquatic | 35,686 | 4,957 | 13,493 | 8,170 | 62,306 |
| Saline emergent | 12,440 | 7,097 | 14,569 | 10,935 | 45,041 |
| Seasonal wetland | 8,548 | 6,642 | 8,645 | 12,415 | 36,250 |
| Freshwater permanent emergent wetland | 15,089 | 4,140 | 7,650 | 4,624 | 31,503 |
| Valley/foothill riparian | 1,032 | 839 | 2,079 | 1,270 | 5,219 |
| Upland woodland and scrub | 246 | 2,232 | 1,614 | 261 | 4,353 |
| Grassland | 33,658 | 10,963 | 42,359 | 40,274 | 127,254 |
| Upland cropland | 79,973 | 47,148 | 108,532 | 70,224 | 305,877 |
| Orchards and vineyards | 4,216 | 3,232 | 8,961 | 7,116 | 23,525 |
| Developed and disturbed | 18,933 | 11,972 | 29,468 | 20,746 | 81,118 |
| Total | 209,819 | 99,223 | 237,370 | 176,034 | 722,446 |

Notes:

- * Tidal fresh emergent wetland assumed to be allocated proportional to size of Management Unit
- ** Based on conversion of linear target and assumed widths
- *** Perennial grassland is assumed to be restored from annual grassland
- **** Upper limit of acreage estimate

SECTION VII:

**CALFED REGIONS AND THE
ECOSYSTEM RESTORATION PROGRAM FOCUS
STUDY AREA**



CALFED Regions

Ecological Management Zones

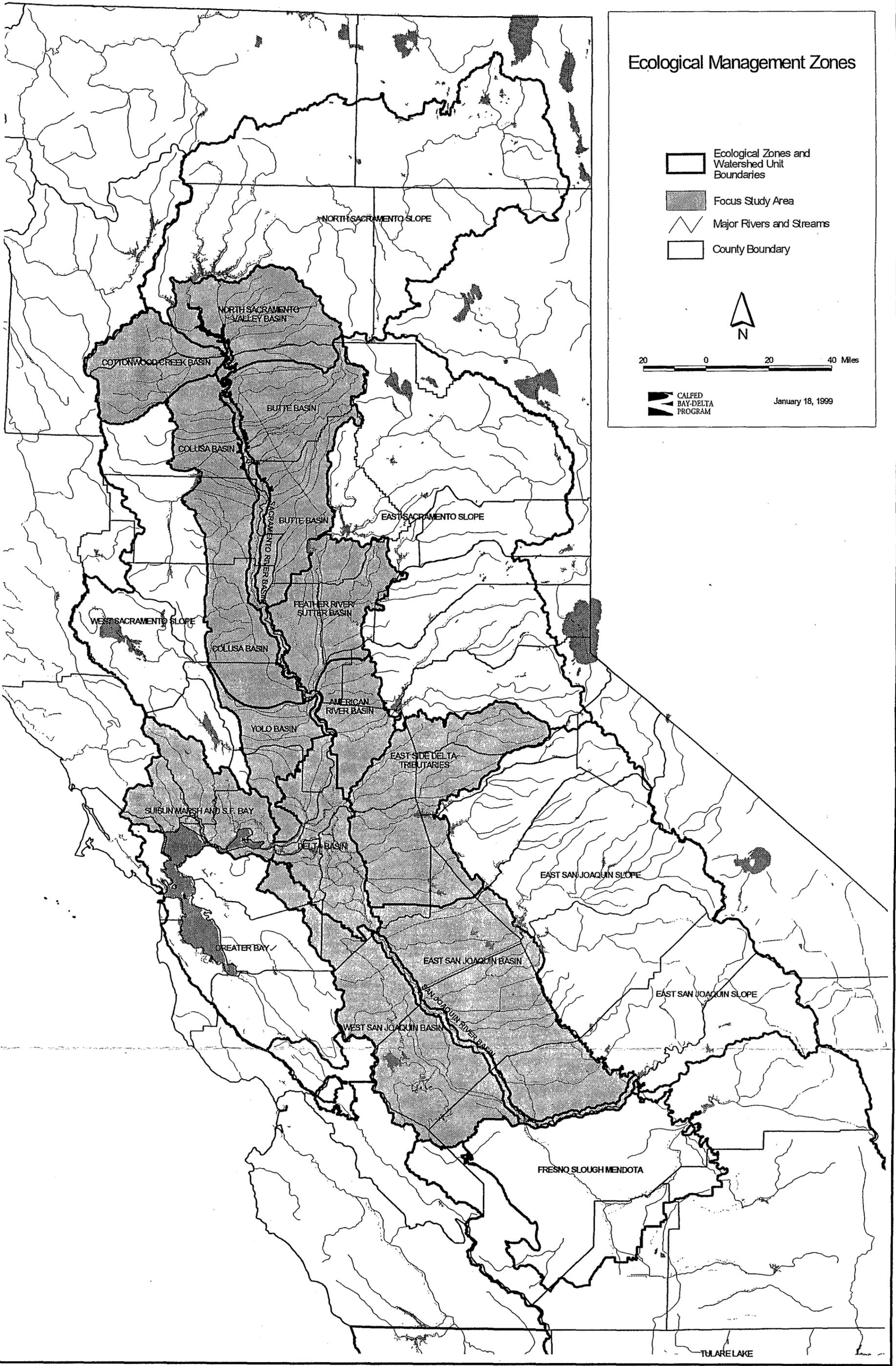
-  Ecological Zones and Watershed Unit Boundaries
-  Focus Study Area
-  Major Rivers and Streams
-  County Boundary



20 0 20 40 Miles



January 18, 1999



SECTION VIII:

**SPECIES PRESCRIPTION CHECKLIST AND
RECOMMENDATION FORMS**

Evaluation Species Prescription Checklist:
Please Check the Species for Which You have Developed Species Prescriptions

| Check Here | Evaluation Species | Check Here | Evaluation Species |
|------------|-------------------------------------|------------|-----------------------------------|
| | Mammals | | Reptiles |
| | San Joaquin kit fox | | Alameda whipsnake |
| | Giant kangaroo rat | | Blunt-nosed leopard lizard |
| | Ringtail | | San Joaquin whipsnake |
| | Nelson's antelope ground squirrel | | Western pond turtle |
| | Riparian brush rabbit | | Amphibians |
| | San Joaquin Valley woodrat | | California red-legged frog |
| | Greater western mastiff-bat | | Limestone salamander |
| | Birds | | California tiger salamander |
| | Least Bell's vireo | | Foothill yellow-legged frog |
| | Northern spotted owl | | Invertebrates |
| | Bald eagle | | Callippe silverspot |
| | California condor | | Lange's metalmark |
| | Little willow flycatcher | | Valley elderberry longhorn beetle |
| | Bank swallow | | Monarch butterfly (roost) |
| | Western yellow-billed cuckoo | | Plants |
| | Greater sandhill crane | | Antioch Dunes evening-primrose |
| | White-tailed kite | | Calistoga popcornflower |
| | Golden eagle | | Clara Hunt's milkvetch |
| | Swainson's hawk | | Contra Costa wallflower |
| | Mountain plover | | El Dorado bedstraw |
| | California yellow warbler | | Hartweg's golden sunburst |
| | Grasshopper sparrow | | Large-flowered fiddleneck |
| | Tricolored blackbird | | Layne's ragwort |
| | Yellow-breasted chat | | Marin western flax |
| | Long-eared owl | | Pallid manzanita |
| | Short-eared owl | | Pine Hill ceanothus |
| | Western burrowing owl | | Pine Hill flannelbush |
| | Long-billed curlew | | San Benito evening-primrose |
| | Cooper's hawk | | San Joaquin adobe sunburst |
| | Northern harrier | | San Joaquin woolythreads |
| | Osprey | | Showy Indian clover |
| | Double-crested cormorant (rookery) | | Sonoma alopecurus |
| | Black-crowned night heron (rookery) | | Sonoma spineflower |
| | Great blue heron (rookery) | | Stebbins' morning-glory |
| | Great egret (rookery) | | Tiburon Indian paintbrush |

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| Check Here | Evaluation Species | Check Here | Evaluation Species |
|------------|----------------------------------|------------|---|
| | Snowy egret (rookery) | | Tiburon jewelflower |
| | Plants (cont.) | | Plants (cont.) |
| | Tiburon Mariposa lily | | Ferris' milkvetch |
| | White-rayed pentachaeta | | Heartscale |
| | Baker's larkspur | | Heckard's peppergrass |
| | Baker's manzanita | | Hospital Canyon larkspur |
| | California vervain | | Lesser saltscale |
| | Delta coyote-thistle | | Lost Hills crownscale |
| | Indian Valley brodiaea | | Mad-dog skullcap |
| | Ione buckwheat | | Mariposa clarkia |
| | Irish Hill buckwheat | | Marsh checkerbloom |
| | Marin checkerbloom | | Merced phacelia |
| | Mason's ceanothus | | Mt. Diablo jewelflower |
| | Mt. Diablo bird's-beak | | Mt. Diablo manzanita |
| | North Coast semaphore grass | | Mt. Hamilton coreopsis |
| | Rock sanicle | | Mt. Hamilton jewelflower |
| | Santa Cruz tarplant | | Napa western flax |
| | Yellow larkspur | | Northern California black walnut (native) |
| | Ione manzanita | | Panoche peppergrass |
| | Rawhide Hill onion | | Red Hills ragwort |
| | Alkali milkvetch | | Red-flowered lotus |
| | Arburua Ranch jewelflower | | San Joaquin spearscale |
| | Ben Lomond buckwheat | | Saw-toothed lewisia |
| | Big tarplant | | Shaggyhair lupine |
| | Brittlescale | | Sharsmith's harebell |
| | California beaked-rush | | Showy madia |
| | Congdon's lomatium | | Slough thistle |
| | Congdon's tarplant | | Spiny-sepaled button-celery |
| | Contra Costa manzanita | | Henderson's bent grass |
| | Diablo helianthella | | San Antonio Hills monardella |
| | Diamond-petaled California poppy | | |

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SECTION IX:
NOTE PAGES

CALFED CONSERVATION STRATEGY
SPECIES REVIEW WORKSHOP
January 27, 1999

#3

WORKSHOP PACKET 3:
REVIEW AND DEVELOPMENT OF
SPECIES CONSERVATION MEASURES

#3

SECTION I:

**GUIDELINES FOR REVIEW AND
DEVELOPMENT OF
SPECIES CONSERVATION MEASURES**

Guidelines for Review and Development of Conservation Strategy Species Conservation Measures

This workshop packet presents information for use in reviewing species conservation measures currently proposed in the Conservation Strategy and for recommending additional conservation measures that may be required to achieve species prescriptions. This information is intended for use in today's workshop and for your use in reviewing, preparing, and submitting recommendations after the workshop. Subsequent sections of this packet present the following information:

- **Section II** presents the riparian and upland species with proposed "R" or "r" goals and the habitat types with which they are associated;
- **Section III** presents the riparian and upland species with proposed "m" goals and the habitat types with which they are associated;
- **Section IV** presents descriptions of habitat types addressed in the Conservation Strategy;
- **Section V** presents a summary of CALFED program targets and the CALFED regions where they would be implemented.
- **Section VI** summarizes the anticipated overall effects of proposed CALFED actions on covered habitats within the Ecosystem Restoration Program (ERP) focus study area.
- **Section VII** summarizes the types of impacts CALFED actions could have on each of the riparian and upland habitats and proposed conservation measures that, if implemented, would compensate those impacts.
- **Section VIII** presents a summary of existing habitat acreages by CALFED Region and ERP ecological management unit and a summary of ERP proposed habitat restoration and enhancement actions;
- **Section IX** presents maps of CALFED regions and the ERP focus study area, including ecological management zones;
- **Section X** describes locations of potential new surface storage and groundwater storage sites that may be could be proposed by CALFED;

- **Section XI** presents forms for recommending additional conservation measures for achieving species prescriptions and compensating for potential CALFED impacts, and a checklist for reporting species for which you have reviewed or developed conservation measures.
- **Section XII** provides blank pages for recording notes.

Background

- You will be reviewing and developing conservation measures for all Conservation Strategy species associated with riparian and upland habitats Sections II and III). (A complete list of Conservation Strategy species and proposed species goals are presented in Sections III and IV of Workshop Packet 4).
- Please review summaries of intended targets for each CALFED program (Section V). These summary targets (primarily ERP the habitat targets) should be reviewed and used as the platform from which conservation measures related to restoring/enhancing habitat are formulated (e.g., if ERP habitat targets would achieve species prescriptions, then there **would not** be a need to formulate conservation measures for restoring additional habitat).
- Please review the summary of anticipated overall CALFED effects on riparian and upland habitats (Section VI). This table should be used as the basis from which to determine if additional conservation measures may be needed to achieve species prescriptions.
- Currently proposed conservation measures to compensate for potential impacts on covered habitats and associated species are presented in Section VII. These measures should be reviewed to ensure proposed measures would compensate for the corresponding potential program impacts.
- A summary of existing habitat acreages ERP habitat restoration and enhancement targets (Section VIII) is provided to assist you in determining the possible need for additional habitat area to achieve a species prescription beyond that proposed in the ERP. Ecological management zones referred to in the acreage tables are shown in Section IX.
- Please review maps showing potential new surface and groundwater storage sites

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(Section X). This information may assist you in determining the need for conservation measures for species with limited distribution (e.g., if a plant species is within or near the footprint of a proposed facility, your conservation measures would likely be different than if the plant did not occur near a facility).

- the legal status and scientific names of species is presented in Sections I and II of Workshop Packet 4.

Formulation of Conservation Measures

The following are examples of how species conservation measures may be formulated. Conservation measures are actions designed to compensate for potential program impacts, to achieve species prescriptions, and to identify research or monitoring needs related to determining if recommended conservation measures are effective.

1. Ensure that 20% of saline emergent wetland habitat to be restored under the ERP is dominated by cordgrass to provide sufficient habitat area for the clapper rail.
2. Capture *species "X"* from occupied habitat areas near suitable restored habitat areas and relocate them to restored habitat areas to establish additional populations necessary to recover the species.
3. Purchase land or acquire easements sufficient to protect (*number of or locations of*) *populations of species "X"*.
4. Increase the available forage on agricultural lands in *ecological management zone "X"* to ensure sufficient forage is available to allow breeding populations of *species "X"* in *ecological management zone "X"* to naturally expand.

Other measures similar to item 5, as appropriate, that remove stressors thought to be limiting the natural expansion of populations.

5. Conduct surveys to better determine the present range, distribution, and status of *species "X"* if additional conservation measures may be necessary to achieve recovery.
6. Research the feasibility of successfully relocating populations of *plant species "X"* from the potential (*name*) reservoir site and reestablishing populations elsewhere in or near the site.

Conservation Measures Recommendations

- We request that your recommended additional conservation measures or changes to proposed conservation measures to **compensate for potential program impacts** be recorded for each habitat type in the space provided on the table of proposed conservation measures (Section VII). If you choose to submit your changes/recommendations electronically, please be sure to indicate which impact and habitat type (and conservation measure for changes) is being addressed (WordPerfect or Word only).
- We request that your recommended additional conservation measures for achieving species prescriptions or addressing research/monitoring needs be provided on the species conservation recommendations forms provided in Section XI or, if you wish, in electronic form (WordPerfect or Word only).
- If you provide recommendations on hardcopy forms, **please** write legibly.
- To enable us to track development of the Conservation Strategy, please provide all of the information requested on the forms.
- Because the Conservation Strategy is a part of a legal process, please be sure to provide your rationale and any supporting documentation (e.g., existing recovery plan prescriptions or other literature) for your recommended additional conservation measures.
- Please fill out the Evaluation Species Prescription Checklist (Section XI) on completion of your review. The checklist is to help us ensure that proposed conservation measures have been reviewed and the need for additional conservation measures to achieve species prescriptions have been considered for all riparian and upland Conservation Strategy species.
- If you have questions about conducting your review after the workshop, please call:

Pete Rawlings or Paul Cylinder (Jones & Stokes Associates): 916/737-3000
Mike Fris (U.S. Fish and Wildlife Service): 916/979-2109
Jeff Single (Department of Fish and Game): 209/243-4014
Marti Kie (CALFED): 916/654-4558

Submittal of Review Forms

- We must have all of your prescription recommendation forms and checklist returned by **February 3, 1999** to ensure that your recommendations will be considered in the Conservation Strategy.
- Please return your hardcopy recommendation forms and your species checklist by mail or fax to:

Pete Rawlings
Jones & Stokes Associates
2600 "V" St.
Sacramento, CA 95818-1914

fax: 916/737-3030

- If you wish to submit recommendation forms and a list of the species for which you reviewed goals electronically, please e-mail to:

peter@jsanet.com

SECTION II:
**RIPARIAN AND UPLAND SPECIES WITH
PROPOSED "R" AND "r" GOALS**

SECTION III:

**RIPARIAN AND UPLAND SPECIES WITH
PROPOSED “m” GOALS**

Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-----------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Mammals | | | | | | | | | | | | | | | | | | |
| San Joaquin kit fox | | | X | | | | | | | | | | | | | | X | |
| Giant kangaroo rat | | | X | | | | | | | | | | | | | | | |
| Ringtail | X | X | | | X | X | X | | | | | | | | | | | |
| Nelson's antelope ground squirrel | | | X | | | | | | | | | | | | | | | |
| Greater western mastiff-bat | X | X | X | | X | X | X | | | | | | | | | | | |
| Birds | | | | | | | | | | | | | | | | | | |
| Northern spotted owl | | | | | | | X | | | | | | | | | | | |
| Bald eagle | X | X | | | | | X | X | X | X | X | | | | | X | | |
| California condor | | | X | | X | X | | | | | | | | | | | | |
| White-tailed kite | X | | X | | | | | | | | | X | X | X | X | X | X | X |
| Golden eagle | X | | X | | X | X | | | | | | | | | | | | |
| Mountain plover | | | X | | | | | | | | | | | | | | X | |
| Grasshopper sparrow | | | X | | | | | | | | | | | | | | X | |
| Tricolored blackbird | | | X | | | | | | | | | | | X | X | X | X | X |

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 VRA = Valley riverine aquatic
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 L = Lacustrine
 SE = Saline emergent

TFE = Tidal freshwater emergent
 NFPE = Nontidal freshwater permanent emergent
 NSW = Natural seasonal wetlands
 MSW = Managed seasonal wetlands
 VFR = Valley/foothill riparian

MR = Montane riparian
 G = Grassland
 IDS = Inland dune scrub
 US = Upland scrub
 VFW = Valley/foothill woodland

MWF = Montane woodland and forest
 UC = Upland cropland
 SFA = Seasonally flooded agriculture

Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-------------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Yellow-breasted chat | X | X | | | | | | | | | | | | | | | | |
| Long-eared owl | X | X | | | | X | | | | | | | | | | | | |
| Short-eared owl | | | X | | | | | | | | | X | X | X | X | X | | X |
| Western burrowing owl | | | X | | X | | | | | | | | | | | | X | |
| Long-billed curlew | | | X | | | | | X | | | | X | | X | X | X | X | X |
| Cooper's hawk | X | X | | | | X | X | | | | | | | | | | | |
| Northern harrier | | | X | | | | | | | | | X | X | X | X | X | X | X |
| Osprey | X | X | | | | X | X | X | X | X | X | | | | | | | |
| Double-crested cormorant (rookery) | X | X | | | | | | | | | | | | | | | | |
| Black-crowned night heron (rookery) | X | X | | | | | | | | | | | | X | | | | |
| Great blue heron (rookery) | X | X | | | | | | | | | | | | | | | | |
| Great egret (rookery) | X | X | | | | | | | | | | | | | | | | |
| Snowy egret (rookery) | X | X | | | | | | | | | | | | X | | | | |
| Reptiles | | | | | | | | | | | | | | | | | | |
| Alameda whipsnake | X | | X | | X | X | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|--------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Blunt-nosed leopard lizard | | | X | | | | | | | | | | | | | | | |
| San Joaquin whipsnake | | | X | | X | X | | | | | | | | | | | | |
| Western pond turtle | X | | | | | | | | X | X | X | | | X | | | | |
| Amphibians | | | | | | | | | | | | | | | | | | |
| California red-legged frog | X | X | X | | | | | | X | X | X | | | X | X | X | | |
| Limestone salamander | | | | | X | X | | | | | | | | | | | | |
| California tiger salamander | | | X | | | | | | | | X | | | X | | | | |
| Foothill yellow-legged frog | X | X | | | | | | | X | X | | | | | | | | |
| Invertebrates | | | | | | | | | | | | | | | | | | |
| Callippe silverspot | | | X | | | | | | | | | | | | | | | |
| Lange's metalmark | | | | X | | | | | | | | | | | | | | |
| Monarch butterfly (roost) | | | | | | X | | | | | | | | | | | | |
| Plants | | | | | | | | | | | | | | | | | | |
| Antioch Dunes evening-primrose | | | | X | | | | | | | | | | | | | | |
| Calistoga popcornflower | | | X | | | | | | | | | | | X | X | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|-----------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Clara Hunt's milkvetch | | | X | | | X | | | | | | | | | | | | |
| Contra Costa wallflower | | | | X | | | | | | | | | | | | | | |
| El Dorado bedstraw | | | | | X | X | | | | | | | | | | | | |
| Hartweg's golden sunburst | | | X | | | X | | | | | | | | | | | | |
| Hoover's eriastrum | | | X | | | | | | | | | | | | | | | |
| Large-flowered fiddleneck | | | X | | | X | | | | | | | | | | | | |
| Layne's ragwort | | | | | X | X | | | | | | | | | | | | |
| Marin western flax | | | X | | X | | | | | | | | | | | | | |
| Pallid manzanita | | | | | X | | | | | | | | | | | | | |
| Pine Hill ceanothus | | | | | X | X | | | | | | | | | | | | |
| Pine Hill flannelbush | | | | | X | X | | | | | | | | | | | | |
| San Benito evening-primrose | | | | | X | X | | | | | | | | | | | | |
| San Joaquin adobe sunburst | | | X | | | | | | | | | | | | | | | |
| San Joaquin woollythreads | | | X | | | | | | | | | | | X | | | | |
| Showy Indian clover | | | X | | | | | | | | | | | X | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | | |
|---------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|--|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A | |
| Sonoma alopecurus | X | | | | | | | | | | | | | | | | | X | |
| Sonoma spineflower | | | X | | | | | | | | | | | | | | | | |
| Stebbins' morning-glory | | | | | X | X | | | | | | | | | | | | | |
| Tiburon Indian paintbrush | | | X | | | | | | | | | | | | | | | | |
| Tiburon jewelflower | | | X | | | | | | | | | | | | | | | | |
| Tiburon Mariposa lily | | | X | | | | | | | | | | | | | | | | |
| White-rayed pentachaeta | | | X | | | | | | | | | | | | | | | | |
| Baker's larkspur | | | | | X | | | | | | | | | | | | | | |
| Baker's manzanita | | | | | X | | | | | | | | | | | | | | |
| California vervain | X | | | | | X | | | | | | | | | | | | | |
| Indian Valley brodiaea | | | X | | X | | X | | | | | | | | | | | | |
| Ione buckwheat | | | | | X | | | | | | | | | | | | | | |
| Irish Hill buckwheat | | | | | X | | | | | | | | | | | | | | |
| Marin checkerbloom | | | X | | X | | | | | | | | | | | | | | |
| Mason's ceanothus | | | | | X | | | | | | | | | | | | | | |
| Mt. Diablo bird's-beak | | | | | X | | | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|----------------------------------|---------------------------------|--------|---|-----|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | IDS | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| North Coast semaphore grass | | | | | | | X | | | | | | | | | | | |
| Rock sanicle | | | X | | X | | X | | | | | | | | | | | |
| Santa Cruz tarplant | | | X | | | | | | | | | | | | | | | |
| Yellow larkspur | | | X | | X | | | | | | | | | | | | | |
| Ione manzanita | | | | | X | | | | | | | | | | | | | |
| Rawhide Hill onion | | | | | | X | | | | | | | | | | | | |
| Alkali milkvetch | | | X | | | | | | | | | | | | X | | | |
| Arburua Ranch jewelflower | | | X | | X | | | | | | | | | | | | | |
| Ben Lomond buckwheat | | | | | X | X | | | | | | | | | | | | |
| Big tarplant | | | X | | | | | | | | | | | | | | | |
| Brittlescale | | | X | | | | | | | | | | | | X | | | |
| California beaked-rush | | | | | | | X | | | | | | | X | | | | |
| Congdon's lomatium | | | | | X | X | | | | | | | | | | | | |
| Congdon's tarplant | | | X | | | | | | | | | | | | | | | |
| Contra Costa manzanita | | | | | X | | | | | | | | | | | | | |
| Diablo helianthella | | | X | | | | | | | | | | | | | | | |
| Diamond-petaled California poppy | | | X | | | | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Ferris' milkvetch | | | X | | | | | | | | | | | | X | | | |
| Heartscale | | | X | | X | | | | | | | | | | | | | |
| Heckard's peppergrass | | | X | | | | | | | | | | | | | | | |
| Hospital Canyon larkspur | | | | | X | X | | | | | | | | | | | | |
| Lesser saltscale | | | X | | | | | | | | | | | | X | | | |
| Lost Hills crownscale | | | X | | | | | | | | | | | | X | | | |
| Mad-dog skullcap | | | | | | | X | | | | | | | X | X | | | |
| Mariposa clarkia | X | | | | | X | | | | | | | | | | | | |
| Marsh checkerbloom | X | | | | | | | | | | | | | X | | | | |
| Merced phacelia | | | X | | | | | | | | | | | | | | | |
| Mt. Diablo jewelflower | | | X | | X | | | | | | | | | | | | | |
| Mt. Diablo manzanita | | | | | X | | | | | | | | | | | | | |
| Mt. Hamilton coreopsis | | | | | | X | | | | | | | | | | | | |
| Mt. Hamilton jewelflower | | | | | X | X | | | | | | | | | | | | |
| Napa western flax | | | | | X | | | | | | | | | | | | | |
| Panoche peppergrass | | | X | | | | | | | | | | | | | | | |
| Red Hills ragwort | | | | | | X | | | | | | | | | | | | |

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Evaluation Species Associated with Riparian and Upland NCCP Habitats
 with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types ¹ | | | | | | | | | | | | | | | | | |
|------------------------------|---------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|--------|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | U C | SF A |
| Red-flowered lotus | | | X | | | X | | | | | | | | | | | | |
| San Joaquin spearscale | | | X | | | | | | | | | | | | X | | | |
| Saw-toothed lewisia | | X | | | | | X | | | | | | | | | | | |
| Shaggyhair lupine | | | | | X | X | | | | | | | | | | | | |
| Sharsmith's harebell | | | | | X | | | | | | | | | | | | | |
| Sho'vy madia | | | X | | | X | | | | | | | | | | | | |
| Slough thistle | X | | | | | | | | | | | | X | X | X | | | |
| Spiny-sepaed button-celery | | | X | | | | | | | | | | | | X | | | |
| Henderson's bent grass | | | X | | | | | | | | | | | | X | | | |
| San Antonio Hills monardella | | | | | X | X | | | | | | | | | | | | |

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SECTION IV:

**DESCRIPTION OF
NCCP HABITAT TYPES**

NCCP Habitat Type Descriptions

| NCCP Habitat Type | Habitat Description |
|--|--|
| Tidal perennial aquatic | Tidal perennial aquatic habitat is defined as deep water (greater than 3 meters in depth from mean low low tide) aquatic, shallow (less than or equal to 3 meters in depth from mean low low tide) aquatic, and unvegetated intertidal (i.e., tideflats) zones of estuarine bays, river channels, and sloughs. |
| Lacustrine | Lacustrine habitat is defined as permanent bodies of water that do not support emergent vegetation and are not subject to tidal exchange, including lakes, ponds, oxbows, gravel pits, and flooded islands. |
| Saline emergent | Saline emergent habitat is defined to include portions of San Francisco, San Pablo, and Suisun Bays and the Delta that support emergent wetland plant species that are tolerant of saline or brackish conditions within the intertidal zone or on lands that historically were subject to tidal exchange (i.e., diked wetlands). |
| Tidal freshwater emergent | Tidal freshwater emergent habitat is defined to include portions of the intertidal zones of the Delta that support emergent wetland plant species that are not tolerant of saline or brackish conditions. |
| Nontidal freshwater permanent emergent | Nontidal freshwater permanent emergent habitat is defined to include permanent (natural and managed) wetlands, including meadows, dominated by wetland plant species that are not tolerant of saline or brackish conditions. |

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|--------------------------|---|
| Natural seasonal wetland | Natural seasonal wetland habitat is defined to include vernal pools and other non-managed seasonal wetlands with natural hydrology that are dominated by herbaceous vegetation and annually pond surface water or maintain saturated soils at the ground surface for a portion of the year of sufficient duration to support facultative or obligate wetland plant species. |
| Managed seasonal wetland | Managed seasonal wetland habitat is defined to include wetlands dominated by native or non-native herbaceous plants, excluding croplands farmed for profit (e.g., corn and rice), that are flooded and drained by land managers during specific periods to enhance habitat values for specific wildlife species. Ditches and drains associated with managed seasonal wetlands are included in this habitat type. |
| Valley riverine aquatic | Valley riverine aquatic habitat is defined to include the water column of flowing streams and rivers in low-gradient channel reaches below approximately 300 feet in elevation that are not tidally influenced, including associated shaded riverine aquatic, pool, riffle, run, and unvegetated channel substrate (including seasonally exposed channel bed) habitat features, and sloughs, backwaters, overflow channels, and flood bypasses hydrologically connected to stream and river channels. |

| | |
|--------------------------|--|
| Montane riverine aquatic | Montane riverine aquatic habitat is defined to include the water column of flowing streams and rivers above approximately 300 feet in elevation, including associated shaded riverine aquatic, pool, riffle, run, and unvegetated channel substrate (including seasonally exposed channel bed) habitat features, and sloughs, backwaters, and overflow channels hydrologically connected to stream and river channels. |
| Valley/foothill riparian | Valley/foothill riparian habitat is defined to include all successional stages of woody vegetation generally dominated by willow, Fremont cottonwood, valley oak, or sycamore within the active and historical floodplains of low-gradient reaches of streams and rivers generally below 300 feet in elevation. |
| Montane riparian | Montane riparian habitat is defined to include all successional stages of woody vegetation such as willow, black cottonwood, white alder, birch, and dogwood within the active floodplains of moderate to high gradient reaches of streams and rivers generally above 300 feet in elevation. |
| Grassland | Grassland habitat is defined to include upland vegetation communities dominated by introduced and native annual and perennial grasses, including unirrigated and irrigated pasture lands. |
| Inland dune scrub | Inland dune scrub habitat consists of vegetated stabilized sand dunes associated with river and estuarine systems. |
| Upland scrub | Upland scrub habitat is defined to include habitat areas that are dominated by shrubs characteristic of coastal scrub and chaparral communities. |

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| | |
|-------------------------------------|--|
| Valley/foothill woodland and forest | Valley/foothill woodland and forest habitat is defined to include non-riparian forest, woodland, and savanna below 300 feet in elevation. These vegetation communities are commonly dominated by valley oak, blue oak, interior live oak, coast live oak, and/or foothill pine. |
| Montane woodland and forest | Montane woodland and forest habitat is defined to include non-riparian forest and woodland above 300 feet in elevation. These vegetation communities are commonly dominated by pine, fir, cedar, and/or black oak. |
| Upland cropland | Upland cropland habitat is defined to include agricultural lands farmed for grain, field, truck, and other crops that are not seasonally flooded. |
| Seasonally flooded agriculture | Seasonally flooded agriculture habitat is defined to include agricultural lands farmed for grain, field, truck, rice, and other crops that require seasonal flooding for durations of a least 1 week as a management practice (e.g., pest control and irrigation) or are purposefully flooded seasonally to enhance habitat values for specific wildlife species (e.g., duck clubs). Agricultural ditches and drains associated with maintaining seasonally flooded agriculture are included in this habitat type. |

SECTION V:

**SUMMARY OF
CALFED PROGRAM TARGETS**

Summary of CALFED Program Targets by Region

| Program Targets | Applicable CALFED Regions | | | |
|---|---------------------------|-----|------------------|-------------------|
| | Delta | Bay | Sacramento River | San Joaquin River |
| Ecosystem Restoration Program | | | | |
| E1. Provide for more natural river flows and Bay-Delta freshwater inflow peaks in fall, winter, and spring of all but critical years. | X | X | X | X |
| E2. Improvement in the supply of sediment to rivers and streams necessary for providing spawning gravels and rehabilitation of related ecological processes (e.g., stream meander) and floodplain habitats (e.g., riparian habitats). | | | X | X |
| E3. Maintenance of stream temperatures necessary to maintain anadromous fishes through management of reservoir releases or structural solutions (i.e., does not include the effect of restoration of riparian vegetation on maintaining stream temperatures). | | | X | |
| E4. Provide more natural Delta hydraulic conditions (internal flow and velocity patterns) by altering channel configurations (e.g., setback levees) and physical barriers to channel flow. | X | | | |
| E5a. Restoration of up to 7,500 acres of tidal shallow-water habitat. | X | | | |
| E5b. Restoration of up to 1,500 acres of tidal shallow-water habitat. | | X | | |
| E6. Restoration and maintenance of riverine aquatic habitats. | | | X | X |
| E7. Restoration of 7,500–12,000 acres of tidal saline emergent wetland. | | X | | |
| E8. Restoration of 30,000 to 45,000 acres of tidal fresh emergent wetland. | X | | | |

| Program Targets | Applicable CALFED Regions | | | |
|--|---------------------------|-----|------------------|-------------------|
| | Delta | Bay | Sacramento River | San Joaquin River |
| E9. Maintenance of existing and restoration of up to 200 acres of channel islands and associated habitats. | X | | | |
| E10a. Restoration of 75-160 miles of tidal sloughs. | X | | | |
| E10b. Restoration of 15-30 miles of tidal sloughs. | | X | | |
| E11. Restoration of up to 17,000 acres of nontidal freshwater emergent wetland. | X | | | |
| E12. Restoration of up to 1,600 acres of nontidal deep open-water habitat adjacent to existing and restored wetlands. | | X | | |
| E13a. Enhancement of up to 4,000 acres of existing and restoration and management of up to 28,000 acres of seasonal wetlands for wildlife. | X | | | |
| E13b. Enhancement and management of up to 58,000 acres of existing seasonal wetlands for wildlife. | | X | | |
| E13c. Enhancement and management of up to 46,890 acres of existing seasonal wetlands for wildlife. | | | X | |
| E13d. Enhancement and management of existing seasonal wetlands in the Eastside Delta Tributaries Ecological Zone for wildlife. | | | | X |
| E14a. Protection, enhancement, and restoration of vernal pools for the delta green ground beetle. | X | | | |
| E14b. Protection and enhancement of up to 100 acres of vernal pools and 500-1,000 acres of surrounding lands. | | X | | |

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| Program Targets | Applicable CALFED Regions | | | |
|---|---------------------------|-----|------------------|-------------------|
| | Delta | Bay | Sacramento River | San Joaquin River |
| E15a. Restoration of 43–75 miles of riparian habitat along channels, restoration of riparian habitat in association with setback levees, restoration and management of 500 acres of riparian woodland, protection of 500 acres of existing riparian forest, and reduction of current invasive riparian plants by 50%. | X | | | |
| E15b. Restoration of 40–60 miles of riparian habitat along channels and reduction of populations of invasive non-native riparian plants by 50%. | | X | | |
| E15c. Protection and enhancement of 8,000–14,000 acres of riparian habitat in meander zones along the Sacramento River and its tributaries; restoration of up to 150 miles of riparian habitat along tributaries channels; protection, enhancement, and restoration of riparian habitat and shaded riverine aquatic (SRA) cover along other reaches of the Sacramento River and its tributaries; and reduction of populations of non-native invasive plants. | | | X | |
| E15d. Protection and enhancement of 2,740–3,240 acres of riparian habitat in meander zones along San Joaquin River tributaries; restoration of up to 50 miles of riparian habitat along the San Joaquin River; protection, enhancement, and restoration of riparian habitat and SRA cover along other reaches of the San Joaquin River and its tributaries; and reduction of populations of non-native invasive plants along the northern tributaries to the San Joaquin River. | | | | X |
| E16a. Restoration of 4,000–6,000 acres of perennial grassland. | X | | | |
| E16b. Restoration of up to 4,000 acres of perennial grassland. | | X | | |
| E16c. Restoration of perennial grassland associated with existing or restored wetlands in the American River basin. | | | X | |

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| Program Targets | Applicable CALFED Regions | | | |
|--|---------------------------|-----|------------------|-------------------|
| | Delta | Bay | Sacramento River | San Joaquin River |
| E17. Protection and enhancement of 50–100 acres of inland dune scrub. | X | | | |
| E18a. Cooperative management of 40,000–75,000 acres of agricultural lands to enhance habitat values for waterfowl and other associated species. | X | | | |
| E18b. Cooperative management of up to 298,643 acres of agricultural lands to enhance habitat values for waterfowl and other associated species. | | | X | |
| E18c. Protect and manage 3,000–4,000 acres of agricultural lands for wintering greater sandhill cranes. | | | | X |
| E19. Restoration of flood refuge habitat areas for wildlife along levees and other lands adjacent to existing and restored habitat areas. | X | | | |
| E20. Reduction in the adverse effects of dredging on estuarine aquatic habitats. | X | | | |
| E21. Reduction in the probability of introduction and establishment of non-native aquatic species into the Bay-Delta. | X | X | | |
| E22. Reduction in the adverse effects of diversions on fish. | X | X | X | X |
| E23. Improvement in passage of anadromous fish to and from spawning areas and reduction in levels of fish straying as a result of reducing the effects of structural impediments to fish movement. | | | X | X |
| E24. Reduction in levels of predation on juvenile anadromous fish. | X | X | X | X |
| E25. Reduction in the adverse effects of harvest on fish and wildlife populations. | X | X | X | X |

| Program Targets | Applicable CALFED Regions | | | |
|--|---------------------------|-----|------------------|-------------------|
| | Delta | Bay | Sacramento River | San Joaquin River |
| E26. Improved management of fish hatcheries to better maintain the genetic integrity of wild stocks of anadromous fishes. | | | X | X |
| E27a. Reduction in the concentrations and loadings of contaminants in the aquatic environment by 25%–50%. | X | | | |
| E27b. Reduction in the concentrations and loadings of contaminants in the aquatic environment. | | | X | X |
| E28. Reduction in the adverse effects of boat wakes on shoreline habitats and wildlife in sensitive habitat areas. | X | X | | |
| E29. Enhancement of habitat conditions for the riparian brush rabbit in occupied habitat areas at and near Caswell State Park on the Stanislaus River. | | | | X |
| E30. Enhancement of habitat conditions for the Suisun song sparrow in occupied habitat areas. | | X | | |
| Levee System Integrity Program | | | | |
| L1. Improvement and maintenance of Delta levees. | X | | | |
| L2. Reduction in the risk to levee stability from subsidence. | X | | | |
| L3. Improvement and maintenance of Suisun Marsh levees. | | X | | |
| Water Quality Program | | | | |
| Q1. Reduction of oxygen-depleting substances in the aquatic environment. | X | | X | X |

| Program Targets | Applicable CALFED Regions | | | |
|---|---------------------------|-----|------------------|-------------------|
| | Delta | Bay | Sacramento River | San Joaquin River |
| Q2. Maintain pathogen loadings or below mandated levels and reduce levels of total organic carbon, bromide, and total dissolved solids to increase the availability of water for beneficial uses. | X | X | X | X |
| Q3. Reduction of mercury loadings in water and sediment. | | | X | |
| Q4. Reduction of pesticide loadings in the aquatic environment. | X | X | X | X |
| Q5. Management of salinity levels in the aquatic environment to improve water quality. | | | | X |
| Q6. Reduction in selenium concentrations and loadings to the aquatic environment. | | | | X |
| Q7. Reduction of cadmium, copper, and zinc loadings to levels which do not adversely effect Bay-Delta species or beneficial uses of water. | X | X | X | X |
| Q8. Reduction of sediment loadings to levels which do not adversely effect beneficial uses of surface water. | | X | | X |
| Water Use Efficiency Program | | | | |
| W1. Support implementation of water management techniques that increase the effectiveness of water use management and efficiency for agricultural uses. | X | X | X | X |
| W2. Support implementation of measures that increase agricultural production per unit of water used, protect water quality, or increase environmental benefits while meeting agricultural needs. | X | X | X | X |

| Program Targets | Applicable CALFED Regions | | | |
|---|---------------------------|-----|------------------|-------------------|
| | Delta | Bay | Sacramento River | San Joaquin River |
| W3. Provide planning and technical assistance, financing assistance, and assurances for development and implementation of water management plans and best management practices to urban water agencies. | X | X | X | X |
| W4. Support development and implementation of water recycling projects. | X | X | X | X |
| Water Transfer Program | | | | |
| T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water transfer market. | X | X | X | X |
| Watershed Management Program | | | | |
| M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities. | X | X | X | X |
| Conveyance Facilities | | | | |
| C1. Construct and operate modifications to existing south Delta conveyance features. | X | | | |
| C2. Construct and operate modifications to existing north Delta conveyance features. | X | | | |
| C3. Construct and operate an isolated conveyance facility from the Sacramento River along the eastern side of the Delta to Clifton Court Forebay. | X | | | |
| Storage Facilities | | | | |
| S1. Construct and operate enlarged or new surface storage facilities. | X | | X | X |

| Program Targets | Applicable CALFED Regions | | | |
|--|---------------------------|-----|------------------|-------------------|
| | Delta | Bay | Sacramento River | San Joaquin River |
| S2. Construct and operate new groundwater storage facilities. | | | X | X |
| Conveyance and Storage Operations | | | | |
| 01. Implement operating criteria needed to improve water management for beneficial uses. | X | | X | X |
| 02. Implement an Environmental Water Account to provide operational flexibility to achieve environmental benefits. | X | | X | X |

SECTION VI:
SUMMARY OF OVERALL CALFED EFFECTS
ON NCCP HABITATS

**Summary of Overall Program Effects on NCCP Habitats within the
 Ecosystem Restoration Program Focus Area**

| Overall Program Effect on Habitat Types | Associated Evaluation Species |
|--|---|
| Valley/Foothill Riparian | |
| <p>Restoration of up to 335 miles of riparian habitat along river and stream channels throughout the Ecosystem Restoration Program (ERP) focus area, restoration and protection of up to 1,000 acres of riparian habitats in the Delta Region; protection and enhancement of up to 17,240 acres of riparian habitat in the Sacramento River and San Joaquin River Regions, and enhancement of existing riparian habitats throughout the CALFED solution area by reducing populations of invasive non-native plants. Long-term increase in riparian habitat area as a result of implementing conservation measures that would replace riparian habitat affected by CALFED at a ratio of 2-5 acres for every acre effected. An unknown quantity of riparian habitat would also be expected to naturally establish in association with restoration or enhancement of tidal sloughs and channel islands in the Delta and restoration or enhancement of wetlands throughout the ERP focus area.</p> | <p>Mammals: ringtail, riparian brush rabbit, San Joaquin Valley woodrat, greater western mastiff-bat Birds: least bell's vireo, bald eagle, little willow flycatcher, bank swallow, western yellow-billed cuckoo, white-tailed kite, golden eagle, Swainson's hawk, California yellow warbler, yellow-breasted chat, long-eared owl, short-eared owl, Cooper's hawk, osprey, double-crested cormorant (rookery), black-crowned night heron (rookery), great blue heron (rookery), great egret (rookery), and snowy egret (rookery) Reptiles and Amphibians: Alameda whipsnake, California red-legged frog, western pond turtle, foothill yellow-legged frog Invertebrates: valley elderberry longhorn beetle Plants: Sonoma alopecurus, delta coyote-thistle, marsh checkerbloom, Northern California black walnut (native stands), slough thistle</p> |
| Montane Riparian | |
| <p>Potential for increase in and greater connectivity among montane riparian habitat areas along tributaries to the Sacramento and San Joaquin Rivers and North Bay tributaries, long-term minor increase in and/or enhancement of habitat area as a result of implementing conservation measures to offset program impacts on habitat, and potential for permanent fragmentation of montane riparian corridors if new surface storage facilities are constructed in existing habitat areas.</p> | <p>Mammals: ringtail Birds: least bell's vireo, bald eagle, little willow flycatcher, greater western mastiff-bat, California yellow warbler, yellow-breasted chat, long-eared owl, Cooper's hawk, osprey, double-crested cormorant (rookery), black-crowned night heron (rookery), great blue heron (rookery), great egret (rookery), and snowy egret (rookery) Reptiles and Amphibians: California red-legged frog, foothill yellow-legged frog Invertebrates: valley elderberry longhorn beetle Plants: saw-toothed lewisia</p> |

| Grassland | |
|--|---|
| <p>Potential for an increase of up to 10,000 acres of perennial grassland in the Delta and Bay Regions, an increase in and/or enhancement of habitat area associated with restoration and enhancement of seasonal wetlands, and potential permanent loss of some annual grassland area associated with restoration of channels and riparian habitat and construction of conveyance and storage facilities.</p> | <p>Mammals: San Joaquin kit fox, giant kangaroo rat, Nelson's antelope ground squirrel, greater western mastiff-bat Birds: California condor, greater sandhill crane, white-tailed kite, golden eagle, Swainson's hawk, mountain plover, grasshopper sparrow, tricolored blackbird, short-eared owl, western burrowing owl, long-billed curlew, northern harrier Reptiles and Amphibians: Alameda whipsnake, blunt-nosed leopard lizard, California red-legged frog, California tiger salamander, San Joaquin whipsnake Invertebrates: calliope silverspot Plants: Calistoga popcornflower, Clara Hunt's milkvetch, Hartweg's golden sunburst, large-flowered fiddleneck, Layne's ragwort, Marin western flax, San Joaquin adobe sunburst, San Joaquin woollythreads, showy Indian clover, Sonoma spineflower, Tiburon Indian paintbrush, Tiburon jewelflower, Tiburon Mariposa lily, white-rayed pentachaeta, California vervain, Chinese camp brodiaea, Indian valley brodiaea, rock sanicle, Santa Cruz tarplant, yellow larkspur, big tarplant, brittle scale, Congdon's tarplant, diablo helianthella, diamond-petaled California poppy, Ferris' milkvetch, heartscale, Heckard's peppergrass, lesser salt scale, Lost Hills crown scale, Merced phacelia, Mt. Diablo jewelflower, Panoche peppergrass, red-flowered lotus, San Joaquin spearscale, showy madia, spiny-sealed button-celery, and Henderson's bent grass</p> |
| Inland Dune Scrub | |
| <p>Increase in inland dune scrub habitat area of 50-100 acres within and adjacent to the Antioch Dunes Ecological Reserve, enhancement and increased level of protection of existing habitat area within the Antioch Dunes Ecological Reserve, and potential increases in populations of evaluation species present at the Antioch Dunes Ecological Reserve.</p> | <p>Reptiles and Amphibians: San Joaquin whipsnake Invertebrates: Lange's metalmark Plants: Antioch Dunes evening primrose, Contra Costa wallflower</p> |

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| Upland Scrub | |
|---|---|
| <p>Potential for permanent loss of habitat area with construction of storage facilities and, although program actions have not been identified, potential for enhancement of wildlife values associated with upland scrub communities with implementation of watershed enhancement programs.</p> | <p>Mammals: ringtail, greater western mastiff-bat Birds: California condor, golden eagle, Swainson's hawk, western burrowing owl Reptiles and Amphibians: Alameda whipsnake, limestone salamander, San Joaquin whipsnake Plants: El Dorado bedstraw, Marin western flax, pallid manzanita, Pine Hill caenothus, Pine Hill flannelbush, San Benito evening-primrose, Stebbins' morning-glory, Baker's larkspur, Baker's manzanita, Indian Valley brodiaea, ione buckwheat, Irish Hill buckwheat, Marin checkerbloom, Mason's ceanothus, Mt. Diablo bird's beak, rock sanicle, yellow larkspur, ione manzanita, Arburau Ranch jewelflower, Ben Lomond buckwheat, Congdon's lomatium, Contra Costa manzanita, Mariposa clarkia, Mt. Diablo jewelflower, Mt. Diablo manzanita, Mt. Hamilton jewelflower, Napa western flax, shaggyhair lupine, Sharsmith's harebell, and San Antonio Hills monardella</p> |
| Valley/ Foothill Woodland and Forest | |
| <p>Protection of up to 500 acres of existing woodland in the Delta Region and potential for increase in habitat area near affected channels in the Sacramento River and San Joaquin River Regions as a result of restoring floodplains. Potential for short-term loss of habitat area with construction of storage facilities and long-term increase in and/or enhancement of habitat area with implementation of conservation measures to compensate for impacts of constructing storage facilities on valley/foothill woodland and forest habitats.</p> | <p>Mammals: ringtail, greater western mastiff-bat Birds: California condor, golden eagle, Swainson's hawk, long-eared owl, Cooper's hawk, osprey Reptiles and Amphibians: Alameda whipsnake, limestone salamander Invertebrates: monarch butterfly (roost) Plants: Clara Hunt's milkvetch, El Dorado bedstraw, Hartweg's golden sunburst, Layne's ragwort, pallid manzanita, Pine Hill ceanothus, Pine Hill flannelbush, San Benito evening-primrose, San Joaquin adobe sunburst, Stebbin's morning-glory, California vervain, ione manzanita, Rawhide Hill onion, Ben Lomond buckwheat, Congdon's lomatium, Hospital Canyon larkspur, Mariposa clarkia, Mt. Hamilton coreopsis, Mt. Hamilton jewelflower, Red Hills ragwort, red-flowered lotus, shaggyhair lupine, showy madia, and San Antonio Hills monardella</p> |
| Montane Woodland and Forest | |
| <p>Potential for short-term loss of habitat area with construction of storage facilities and long-term increase in and/or enhancement of habitat area with implementation of conservation measures to compensate for impacts of constructing storage facilities on montane woodland and forest habitats.</p> | <p>Mammals: ringtail, greater western mastiff-bat Birds: northern spotted owl, bald eagle, Cooper's hawk, osprey Plants: pallid manzanita, Indian Valley bodiaea, North Coast semaphore grass, rock sanicle, brittle-scale, and saw-toothed lewisia</p> |

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SECTION VII:

**SUMMARY OF
CALFED PROGRAM IMPACTS AND PROPOSED
CONSERVATION MEASURES**

**Summary of Potential Adverse Effects of CALFED and
 Proposed Conservation Measures for Valley/Foothill Riparian Communities**

| Types of Anticipated Impacts | Proposed Conservation Measures to Offset Anticipated Impacts | Comments |
|--|--|----------|
| Potential for permanent loss or degradation of existing habitat area on or near levees, channel islands, and along conveyance facility corridors if construction activities results in removal of riparian vegetation. | Avoid disturbance to existing habitat areas. | |
| | Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat near where impacts would occur before implementing actions that could result in the loss or degradation of habitat. | |
| | Include project design features that allow for onsite reestablishment and long-term maintenance of riparian vegetation following project construction. | |
| Permanent loss or degradation of existing habitat areas as a result of construction related activities. | Avoid disturbance to existing habitat areas. | |

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| | | |
|--|---|--|
| <p>Permanent loss or degradation of existing habitat areas as a result of construction related activities. (cont.)</p> | <p>Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat near where impacts would occur before implementing actions that could result in the loss or degradation of habitat.</p> | |
| <p>Potential for permanent loss or degradation of riparian habitat downstream of storage reservoirs if storage operations adversely effects current channel hydrology supporting existing riparian vegetation.</p> | <p>Provide sufficient outflow from storage reservoirs sufficient to support the long-term maintenance of riparian vegetation downstream of storage reservoirs.</p> | |
| | <p>Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat near where impacts would occur before implementing actions that could result in the loss or degradation of habitat.</p> | |
| <p>Fragmentation of riparian corridors and disruption of wildlife movement patterns if storage facilities inundate channels supporting riparian vegetation.</p> | <p>To the extent feasible, avoid disturbance to existing riparian habitat corridors.</p> | |
| <p>Potential for loss or degradation of existing riparian habitat areas if water is transferred from uses that currently support riparian vegetation.</p> | <p>Avoid implementing transfers of water from sources that support riparian vegetation.</p> | |

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|---|---|--|
| <p>Potential for loss or degradation of existing riparian habitat areas if water is transferred from uses that currently support riparian vegetation. (cont.)</p> | <p>Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat near where impacts would occur before implementing actions that could result in the loss or degradation of habitat.</p> | |
| <p>Improved agricultural water management could result in localized loss of relatively small habitat areas where riparian vegetation is supported primarily by seeps or runoff associated with existing inefficiencies in the use agricultural water.</p> | <p>Avoid disturbance to existing habitat areas.</p> | |
| | <p>Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat near where impacts would occur before implementing actions that could result in the loss or degradation of habitat.</p> | |
| <p>Potential for permanent loss or degradation of riparian habitat along Delta channels upstream of operable barriers if operation of barriers adversely effects the hydrology supporting existing riparian vegetation.</p> | <p>Operate barriers in a manner that will not adversely effect the hydrology supporting riparian vegetation upstream of barriers.</p> | |
| <p>Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species.</p> | <p>Avoid construction activities during the breeding period of evaluation species that are present in existing habitat areas that could be effected by the actions.</p> | |

| | | |
|---|--|--|
| <p>Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. (cont.)</p> | <p>Avoid direct disturbance to populations and individuals of evaluation plant species.</p> | |
| | <p>Establish and protect additional populations of evaluation plant species in suitable nearby habitat areas before construction activities that could affect existing populations or individuals are implemented.</p> | |
| | <p>Remove or exclude evaluation amphibian and reptile species from construction corridors before construction is initiated.</p> | |
| | <p>Trap and relocate special-status wildlife species that would be unlikely to escape from the inundation area of reservoirs to suitable nearby habitat areas.</p> | |
| <p>Potential for recreational associated disturbance to evaluation species associated with valley/foothill riparian habitats in the vicinity of new surface storage facilities.</p> | <p>Restrict recreational uses as appropriate to reduce or avoid the likelihood for recreation related impacts on sensitive plant populations and wildlife use areas.</p> | |

**Summary of Potential Adverse Effects of CALFED and
 Proposed Conservation Measures for Montane Riparian Communities**

| Types of Anticipated Impacts | Proposed Conservation Measures to Offset Anticipated Impacts | Comments |
|--|--|----------|
| Potential for loss or degradation of existing riparian habitat areas if water is transferred from uses that currently support riparian vegetation. | Avoid implementing transfers of water from sources that support riparian vegetation. | |
| | Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat near where impacts would occur before implementing actions that could result in the loss or degradation of s habitat. | |
| Permanent loss or degradation of existing habitat areas as a result of construction related activities. | Avoid disturbance to existing habitat areas. | |
| | Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat near where impacts would occur before implementing actions that could result in the loss or degradation of s habitat. | |

| | | |
|---|--|--|
| Potential for permanent loss or degradation of riparian habitat downstream of storage reservoirs if storage operations adversely effects current channel hydrology supporting existing riparian vegetation. | Provide sufficient outflow from storage reservoirs to support the long-term maintenance of riparian vegetation downstream of storage reservoirs. | |
| | Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat near where impacts would occur before implementing actions that could result in the loss or degradation of s habitat. | |
| Fragmentation of riparian corridors and disruption of wildlife movement patterns if storage facilities inundate channels supporting riparian vegetation. | To the extent feasible, avoid distrubance to existing riparian habitat corridors. | |
| Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. | Avoid construction activities during the breeding period of evaluation species that are present in existing habitat areas that could be effected by the actions. | |
| | Avoid direct disturbance to populations and individuals of evaluation plant species. | |

| | | |
|---|--|--|
| <p>Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. (cont.)</p> | <p>Establish and protect additional populations of evaluation plant species in suitable nearby habitat areas before construction activities that could affect existing populations or individuals are implemented.</p> | |
| | <p>Trap and relocate special-status wildlife species that would be unlikely to escape from the inundation area of reservoirs to suitable nearby habitat areas.</p> | |
| <p>Potential for recreational associated disturbance to evaluation species associated with montane riparian habitats in the vicinity of new surface storage facilities.</p> | <p>Restrict recreational uses as appropriate to reduce or avoid the likelihood for recreation related impacts on sensitive plant populations and wildlife use areas.</p> | |

**Summary of Potential Adverse Effects of CALFED and
 Proposed Conservation Measures for Grassland Communities**

| Types of Anticipated Impacts | Proposed Conservation Measures to Offset Anticipated Impacts | Comments |
|---|---|----------|
| Short-term loss or degradation of habitat if construction required for habitat restoration disturbs existing habitat areas. | None. | |
| Permanent loss or degradation of existing habitat area not occupied by evaluation species. | None. | |
| Permanent loss or degradation of existing habitat areas occupied by evaluation species. | Avoid disturbance to existing habitat areas occupied by evaluation species. | |
| | Restore or enhance 1 to 3 acres of additional in-kind habitat for every acre of existing habitat affected by the actions within the current range of affected species and near where impacts would occur before implementing actions that could result in the loss or degradation of s habitat. | |

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| Types of Anticipated Impacts | Proposed Conservation Measures to Offset Anticipated Impacts | Comments |
|--|--|----------|
| <p>Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species.</p> | <p>Avoid construction activities during the breeding period of evaluation species that are present in existing habitat areas that could be affected by the actions.</p> | |
| | <p>Avoid direct disturbance to populations and individuals of evaluation plant species.</p> | |
| | <p>Establish and protect additional populations of evaluation plant species in suitable nearby habitat areas before construction activities that could affect existing populations or individuals are implemented.</p> | |
| | <p>Trap and relocate special-status wildlife species that would be unlikely to escape from the inundation area of reservoirs to suitable nearby habitat areas.</p> | |
| <p>Potential for recreational associated disturbance to evaluation species associated with grassland habitats in the vicinity of new surface storage facilities.</p> | <p>Restrict recreational uses as appropriate to reduce or avoid the likelihood for recreation related impacts on sensitive plant populations and wildlife use areas.</p> | |

**Summary of Potential Adverse Effects of CALFED and
Proposed Conservation Measures for Inland Dune Scrub Communities**

| Types of Anticipated Impacts | Proposed Conservation Measures to Offset Anticipated Impacts | Comments |
|---|---|-----------------|
| Restoration and enhancement of habitat within and adjacent to the Antioch Dunes Ecological Reserve could result in the short-term loss or degradation of suitable habitat if construction required for habitat restoration disturbs existing habitat areas. | Avoid disturbance to existing habitat areas. | |
| Construction-related activities associated with implementing habitat restoration and enhancement actions could result in mortality, harm, or harassment of evaluation species present at the Antioch Dunes Ecological Reserve. | Avoid direct disturbance to populations and individuals of evaluation plant species and naked buckwheat, the host plant of the Lange's metalmark. | |

**Summary of Potential Adverse Effects of CALFED and
 Proposed Conservation Measures for Upland Scrub Communities**

| Types of Anticipated Impacts | Proposed Conservation Measures to Offset Anticipated Impacts | Comments |
|--|--|----------|
| Permanent loss or degradation of existing habitat area not occupied by evaluation species. | None. | |
| Potential for permanent loss or degradation of existing habitat areas occupied by evaluation species. | Avoid disturbance to existing habitat areas occupied by special-status species. | |
| | Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat occupied by evaluation species affected by the actions within the current range of affected species and near where impacts would occur before implementing actions that could result in the loss or degradation of s habitat. | |
| Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. | Avoid construction activities during the breeding period of evaluation species that are present in existing habitat areas that could be effected by the actions. | |

| | | |
|---|--|--|
| <p>Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. (cont.)</p> | <p>Avoid direct disturbance to populations and individuals of evaluation plant species.</p> | |
| | <p>Establish and protect additional populations of evaluation plant species in suitable nearby habitat areas before construction activities that could affect existing populations or individuals are implemented.</p> | |
| | <p>Trap and relocate special-status wildlife species that would be unlikely to escape from the inundation area of reservoirs to suitable nearby habitat areas.</p> | |
| <p>Potential for recreational associated disturbance to evaluation species associated with upland scrub habitats in the vicinity of new surface storage facilities.</p> | <p>Restrict recreational uses as appropriate to reduce or avoid the likelihood for recreation related impacts on sensitive plant populations and wildlife use areas.</p> | |

**Summary of Potential Adverse Effects of CALFED and
Proposed Conservation Measures for Valley/Foothill Woodland and Forest Communities**

| Types of Anticipated Impacts | Proposed Conservation Measures to Offset Anticipated Impacts | Comments |
|--|---|-----------------|
| Permanent loss or degradation of existing habitat areas. | Avoid disturbance to existing habitat areas. | |
| | Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat effected by the actions near where impacts would occur. | |
| Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. | Avoid construction activities during the breeding period of evaluation species that are present in existing habitat areas that could be effected by the actions. | |
| | Avoid direct disturbance to populations and individuals of evaluation plant species. | |
| | Establish and protect additional populations of evaluation plant species in suitable nearby habitat areas before construction activities that could affect existing populations or individuals are implemented. | |

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| | | |
|--|---|--|
| Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. (cont.) | Trap and relocate special-status wildlife species that would be unlikely to escape from the inundation area of reservoirs to suitable nearby habitat areas. | |
| | Restrict recreational uses as appropriate to reduce or avoid the likelihood for recreation related impacts on sensitive plant populations and wildlife use areas. | |

**Summary of Potential Adverse Effects of CALFED and
 Proposed Conservation Measures for Montane Woodland and Forest Communities**

| Types of Anticipated Impacts | Proposed Conservation Measures to Offset Anticipated Impacts | Comments |
|--|---|----------|
| Permanent loss or degradation of existing habitat areas. | Avoid disturbance to existing habitat areas. | |
| | Restore or enhance 2 to 5 acres of additional in-kind habitat for every acre of existing habitat effected by the actions near where impacts would occur. | |
| Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. | Avoid construction activities during the breeding period of evaluation species that are present in existing habitat areas that could be effected by the actions. | |
| | Avoid direct disturbance to populations and individuals of evaluation plant species. | |
| | Establish and protect additional populations of evaluation plant species in suitable nearby habitat areas before construction activities that could affect existing populations or individuals are implemented. | |

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| | | |
|--|---|--|
| Construction-related activities associated with implementing actions could result in mortality, harm, or harassment of evaluation species. (cont.) | Trap and relocate special-status wildlife species that would be unlikely to escape from the inundation area of reservoirs to suitable nearby habitat areas. | |
| Potential for recreational associated disturbance to evaluation species associated with montane woodland and forest habitats. | Restrict recreational uses as appropriate to reduce or avoid the likelihood for recreation related impacts on sensitive plant populations and wildlife use areas. | |

SECTION VIII:

**EXISTING HABITAT ACREAGES AND ERP
HABITAT RESTORATION AND ENHANCEMENT
TARGETS**

Habitat Area for Ecological Management Zones and Units based on the California Central Valley Wetlands and Riparian GIS (Version 1.0)

Aquatic and Wetland Habitats

| Region | Management Zone | Management Unit | Aquatic | Saline emergent | Seasonal wetland | Freshwater permanent emergent wetland | Area Covered by Data (%) | |
|-------------------------------|-----------------------------|------------------------------|-------------------------|------------------|------------------|---------------------------------------|--------------------------|-------|
| Delta | Delta | CENTRAL AND WEST DELTA | 32,586 | 39 | 548 | 5,089 | 100 | |
| | | EAST DELTA | 3,457 | 0 | 642 | 1,140 | 100 | |
| | | SOUTH DELTA | 5,670 | 0 | 415 | 624 | 100 | |
| | | NORTH DELTA | 10,993 | 2 | 4,645 | 4,650 | 100 | |
| | | TOTAL | 52,706 | 41 | 6,250 | 11,503 | 100 | |
| Bay | Suisun Marsh/SF Bay | SUISUN BAY | 41,418 | 34,373 | 12,871 | 3,144 | 70 | |
| | | NAPA RIVER | 12,109 | 4,832 | 453 | 1,075 | 36 | |
| | | PETALUMA RIVER | 1,945 | 4,358 | 159 | 359 | 83 | |
| | | SAN PABLO BAY | 70,973 | 2,105 | 1 | 6 | 100 | |
| | | SONOMA CREEK | 853 | 1,532 | 315 | 205 | 39 | |
| | | TOTAL | 127,298 | 47,200 | 13,799 | 4,789 | 59 | |
| | | Sacramento River | Sacramento River | SACRAMENTO RIVER | 13,041 | 0 | 1,998 | 1,912 |
| American River | 2,171 | | | 0 | 1,893 | 1,013 | 92 | |
| MORRISON CREEK WATERSHED | 755 | | | 0 | 446 | 131 | 100 | |
| Butte Basin | ANTELOPE CREEK | | | | | | 0 | |
| | BUTTE CREEK | | 6 | 0 | 2 | 6 | 4 | |
| | BUTTE SINK | | 2,673 | 0 | 12,122 | 6,756 | 84 | |
| | DEER CREEK | | | | | | 0 | |
| | MILL CREEK | | | | | | 0 | |
| | PAYNES CREEK | | | | | | 0 | |
| | PINE/ROCK/BIG CHICO CREEKS | | | | | | 0 | |
| Colusa Basin | ELDER CREEK | | 513 | 0 | 18 | 37 | 11 | |
| | SOUTH COLUSA BASIN | | 3,478 | 0 | 14,350 | 3,942 | 81 | |
| | STONY CREEK | | 1,069 | 0 | 293 | 100 | 68 | |
| | THOMES CREEK | | 1,063 | 0 | 47 | 70 | 41 | |
| Cottonwood Creek Basin | LOWER COTTONWOOD CREEK | | | | | | 0 | |
| | UPPER COTTONWOOD CREEK | | | | | | 0 | |
| Feater River/Sutter Basin | BEAR RIVER | | 645 | 0 | 976 | 594 | 100 | |
| | FEATHER RIVER | | 7,542 | 0 | 674 | 2,058 | 100 | |
| | HONCUT CREEK | | 372 | 0 | 789 | 312 | 52 | |
| | SUTTER BASIN | | 1,426 | 0 | 2,840 | 1,408 | 100 | |
| | YUBA RIVER | | 1,675 | 0 | 90 | 218 | 24 | |
| North Sacramento Valley Basin | BEAR CREEK | | | | | | 0 | |
| | BATTLE CREEK | | | | | | 0 | |
| | CLEAR CREEK | | | | | | 0 | |
| | COW CREEK | | | | | | 0 | |
| | NORTH SACRAMENTO VALLEY | | | | | | 0 | |
| Yolo Basin | CACHE CREEK | | 1,785 | 0 | 1,669 | 640 | 79 | |
| | PUTAH CREEK | | 165 | 0 | 90 | 188 | 91 | |
| | YOLO BASIN | | 534 | 0 | 907 | 141 | 94 | |
| | Total | | 38,911 | 0 | 39,206 | 19,525 | 48 | |
| San Joaquin River | San Joaquin River | | SAN JOAQUIN RIVER BASIN | 5,212 | 0 | 1,754 | 2,799 | 87 |
| | | | East San Joaquin Basin | 3,958 | 0 | 1,849 | 1,714 | 78 |
| | East Side Delta Tributaries | EAST SAN JOAQUIN BASIN | | | | | 0 | |
| | | MERCED RIVER | 1,567 | 0 | 205 | 545 | 71 | |
| | | STANISLAUS RIVER | 983 | 0 | 324 | 492 | 77 | |
| | | TUOLUMNE RIVER | 7,796 | 0 | 451 | 566 | 80 | |
| | | CONSUMNES RIVER | 1,894 | 0 | 1,536 | 783 | 29 | |
| | West San Joaquin Basin | EASTSIDE DELTA LOWLANDS FAN | 3,764 | 0 | 1,382 | 396 | 77 | |
| | | LOWER WEST SAN JOAQUIN BASIN | 13,746 | 0 | 31,870 | 9,893 | 83 | |
| | | UPPER WEST SAN JOAQUIN BASIN | 785 | 0 | 100 | 40 | 9 | |
| | | Total | 34,494 | 0 | 37,719 | 14,427 | 57 | |

Notes:

Source: California Department of Fish and Game (1997)
 based on 1993 Landsat Thematic Mapper imagery
 blank cells indicate lack of data

Habitat Area for Ecological Management Zones and Units based on the California Central Valley Wetlands and Riparian GIS (Version 1.0)

Riparian and Upland Habitats

| Region | Management Zone | Management Unit | Valley/ foothill riparian | Upland woodland and scrub | Grassland | Area Covered by Data (%) | |
|-----------------------------|-------------------------------|-------------------------------------|---------------------------------|---------------------------------|---------------|-----------------------------------|----|
| Delta | Delta | CENTRAL AND WEST DELTA | 1,032 | 246 | 33,658 | 100 | |
| | | EAST DELTA | 639 | 2,232 | 10,963 | 100 | |
| | | SOUTH DELTA | 870 | 261 | 40,274 | 100 | |
| | | <u>NORTH DELTA</u> | <u>1,379</u> | <u>1,614</u> | <u>42,359</u> | <u>100</u> | |
| | | TOTAL | 3,919 | 4,353 | 127,254 | 100 | |
| Bay | Suisun Marsh/SF Bay | SUISUN BAY | 276 | 1,105 | 69,501 | 70 | |
| | | NAPA RIVER | 931 | 5,498 | 27,933 | 36 | |
| | | PETALUMA RIVER | 347 | 5,840 | 51,893 | 83 | |
| | | SAN PABLO BAY | 2 | 57 | 46 | 100 | |
| | | <u>SONOMA CREEK</u> | <u>359</u> | <u>1,390</u> | <u>20,863</u> | <u>39</u> | |
| | | TOTAL | 1,916 | 13,890 | 170,237 | 59 | |
| Sacramento River | Sacramento River | SACRAMENTO RIVER | 15,314 | 362 | 20,406 | 92 | |
| | | American River | 3,485 | 25,657 | 113,970 | 92 | |
| | | MORRISON CREEK WATERSHED | 468 | 6,284 | 80,541 | 100 | |
| | Butte Basin | ANTELOPE CREEK | | | | 0 | |
| | | BUTTE CREEK | 16 | 270 | 5,553 | 4 | |
| | | BUTTE SINK | 5,057 | 13,985 | 105,593 | 84 | |
| | | DEER CREEK | | | | 0 | |
| | | MILL CREEK | | | | 0 | |
| | | PAYNES CREEK | | | | 0 | |
| | | PINE/ROCK/BIG CHICO CREEKS | | | | 0 | |
| | Colusa Basin | ELDER CREEK | 278 | 448 | 8,344 | 11 | |
| | | SOUTH COLUSA BASIN | 638 | 1,968 | 127,767 | 81 | |
| | | STONY CREEK | 160 | 222 | 8,205 | 68 | |
| | | THOMES CREEK | 1,004 | 832 | 35,764 | 41 | |
| | Cottonwood Creek Basin | LOWER COTTONWOOD CREEK | | | | 0 | |
| | | UPPER COTTONWOOD CREEK | | | | 0 | |
| | Feater River/Sutter Basin | BEAR RIVER | 1,217 | 1,527 | 45,351 | 100 | |
| | | FEATHER RIVER | 6,798 | 332 | 21,102 | 100 | |
| | | HONCUT CREEK | 786 | 9,627 | 38,043 | 52 | |
| | | SUTTER BASIN | 573 | 8,306 | 31,994 | 100 | |
| | | YUBA RIVER | 404 | 2,541 | 20,911 | 24 | |
| | North Sacramento Valley Basin | BEAR CREEK | | | | 0 | |
| | | BATTLE CREEK | | | | 0 | |
| | | CLEAR CREEK | | | | 0 | |
| | | COW CREEK | | | | 0 | |
| | | NORTH SACRAMENTO VALLEY | | | | 0 | |
| | Yolo Basin | CACHE CREEK | 406 | 1,081 | 27,365 | 79 | |
| | | PUTAH CREEK | 198 | 1,448 | 13,327 | 91 | |
| | | <u>YOLO BASIN</u> | <u>535</u> | <u>1,051</u> | <u>74,427</u> | <u>94</u> | |
| | Total | | 37,337 | 75,941 | 778,666 | 48 | |
| | San Joaquin River | San Joaquin River | SAN JOAQUIN RIVER BASIN | 3,758 | 135 | 40,750 | 87 |
| | | | CHOWCHILLA/FRESNO RIVERS | 611 | 1,453 | 223,637 | 78 |
| East San Joaquin Basin | | EAST SAN JOAQUIN BASIN | | | | 0 | |
| | | MERCED RIVER | 1,851 | 294 | 68,945 | 71 | |
| | | STANISLAUS RIVER | 2,235 | 440 | 27,944 | 77 | |
| | | TUOLUMNE RIVER | 2,266 | 1,695 | 95,826 | 80 | |
| | | CONSUMNES RIVER | 3,415 | 4,235 | 169,574 | 29 | |
| East Side Delta Tributaries | | EASTSIDE DELTA LOWLANDS FAN | 2,662 | 3,861 | 204,161 | 77 | |
| | | LOWER WEST SAN JOAQUIN BASIN | 594 | 587 | 156,688 | 83 | |
| West San Joaquin Basin | | <u>UPPER WEST SAN JOAQUIN BASIN</u> | <u>8</u> | <u>71</u> | <u>49,952</u> | <u>9</u> | |
| | | TOTAL | 13,643 | 12,636 | 996,727 | 57 | |

Notes:

Source: California Department of Fish and Game (1997)
 based on 1993 Landsat Thematic Mapper imagery
 blank cells indicate lack of data

Habitat Area for Ecological Management Zones and Units based on the California Central Valley Wetlands and Riparian GIS (Version 1.0)

Agricultural Habitats

| Region | Management Zone | Management Unit | Flooded agriculture | Upland cropland | Orchards and vineyards | Developed and disturbed | Area Covered by Data (%) | |
|-------------------------------|-----------------------------|------------------------------|--------------------------|------------------|------------------------|-------------------------|--------------------------|--------|
| Delta | Delta | CENTRAL AND WEST DELTA | 18,686 | 94,787 | 4,216 | 18,933 | 100 | |
| | | EAST DELTA | 6,312 | 58,633 | 3,232 | 11,972 | 100 | |
| | | SOUTH DELTA | 2,070 | 97,988 | 7,116 | 20,746 | 100 | |
| | | NORTH DELTA | 14,969 | 118,331 | 8,961 | 29,468 | 100 | |
| | | TOTAL | 42,038 | 369,739 | 23,525 | 81,118 | 100 | |
| Bay | Suisun Marsh/SF Bay | SUISUN BAY | 87 | 1,413 | 4,638 | 28,333 | 70 | |
| | | NAPA RIVER | 29 | 2,432 | 22,575 | 18,889 | 36 | |
| | | PETALUMA RIVER | 19 | 3,824 | 87 | 9,267 | 83 | |
| | | SAN PABLO BAY | 0 | 0 | 0 | 232 | 100 | |
| | | SONOMA CREEK | 146 | 4,915 | 5,250 | 6,023 | 39 | |
| | | TOTAL | 281 | 12,583 | 32,550 | 62,744 | 59 | |
| | | Sacramento River | Sacramento River | SACRAMENTO RIVER | 27,992 | 54,271 | 43,048 | 38,394 |
| American River | 63,294 | | | 18,642 | 857 | 65,538 | 92 | |
| MORRISON CREEK WATERSHED | 175 | | | 12,059 | 807 | 36,534 | 100 | |
| Butte Basin | ANTELOPE CREEK | | | | | | 0 | |
| | BUTTE CREEK | | 0 | 0 | 2 | 231 | 4 | |
| | BUTTE SINK | | 139,411 | 58,263 | 47,397 | 32,948 | 84 | |
| | DEER CREEK | | | | | | 0 | |
| | MILL CREEK | | | | | | 0 | |
| | PAYNES CREEK | | | | | | 0 | |
| | PINE/ROCK/BIG CHICO CREEKS | | | | | | 0 | |
| | Colusa Basin | | ELDER CREEK | 84 | 6,610 | 3,124 | 4,934 | 11 |
| SOUTH COLUSA BASIN | 188,440 | | 169,672 | 14,960 | 125,155 | 81 | | |
| STONY CREEK | 1,340 | | 20,350 | 7,465 | 9,411 | 68 | | |
| THOMES CREEK | 280 | | 14,550 | 13,866 | 9,166 | 41 | | |
| Cottonwood Creek Basin | LOWER COTTONWOOD CREEK | | | | | | 0 | |
| | UPPER COTTONWOOD CREEK | | | | | | 0 | |
| Feater River/Sutter Basin | BEAR RIVER | | 19,930 | 16,669 | 9,598 | 10,516 | 100 | |
| | FEATHER RIVER | | 6,175 | 18,850 | 17,947 | 12,688 | 100 | |
| | HONCUT CREEK | | 25,131 | 8,096 | 3,784 | 6,735 | 52 | |
| | SUTTER BASIN | | 91,193 | 50,108 | 16,398 | 25,859 | 100 | |
| | YUBA RIVER | | 972 | 3,126 | 3,390 | 6,125 | 24 | |
| North Sacramento Valley Basin | BEAR CREEK | | | | | | 0 | |
| | BATTLE CREEK | | | | | | 0 | |
| | CLEAR CREEK | | | | | | 0 | |
| | COW CREEK | | | | | | 0 | |
| | NORTH SACRAMENTO VALLEY | | | | | | 0 | |
| Yolo Basin | CACHE CREEK | | 26,487 | 56,049 | 3,893 | 43,501 | 79 | |
| | PUTAH CREEK | | 4,953 | 28,119 | 2,928 | 23,366 | 91 | |
| | YOLO BASIN | | 8,037 | 24,482 | 2,511 | 41,293 | 94 | |
| | TOTAL | | 603,895 | 559,916 | 191,974 | 492,394 | 48 | |
| San Joaquin River | San Joaquin River | | SAN JOAQUIN RIVER BASIN | 3,483 | 47,742 | 17,635 | 16,886 | 87 |
| | | | CHOWCHILLA/FRESNO RIVERS | 17,291 | 132,002 | 151,010 | 127,911 | 78 |
| | East San Joaquin Basin | EAST SAN JOAQUIN BASIN | | | | | 0 | |
| | | MERCED RIVER | 702 | 43,371 | 72,034 | 38,926 | 71 | |
| | | STANISLAUS RIVER | 259 | 22,555 | 42,941 | 17,848 | 77 | |
| | | TUOLUMNE RIVER | 1,602 | 76,955 | 84,773 | 65,010 | 80 | |
| | | CONSUMNES RIVER | 559 | 37,662 | 8,976 | 10,046 | 29 | |
| | East Side Delta Tributaries | EASTSIDE DELTA LOWLANDS FAN | 6,133 | 116,893 | 94,308 | 51,829 | 77 | |
| | | LOWER WEST SAN JOAQUIN BASIN | 39,901 | 175,730 | 33,218 | 93,889 | 83 | |
| | | UPPER WEST SAN JOAQUIN BASIN | 21 | 4,818 | 2,609 | 10,308 | 9 | |
| | | TOTAL | 66,466 | 609,988 | 489,869 | 415,767 | 57 | |

Notes:

Source: California Department of Fish and Game (1997)
 based on 1993 Landsat Thematic Mapper imagery
 blank cells indicate lack of data

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Summary of Ecosystem Restoration Program Habitat Restoration and Enhancement Targets

| Habitat Type or Feature | Habitat Subtype | Region | | | | | | | | | |
|-------------------------|---------------------------|----------|----------|----------------|----------|------------------|----------|-------------------|----------|----------|----------------|
| | | Delta | | Bay | | Sacramento River | | San Joaquin River | | Total | |
| | | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced |
| Tidal perennial aquatic | Shallow-water | 7,500 A | 0 | 1,500 A | 0 | 0 | | | | 9,000 A | |
| Saline emergent | | 0 | 0 | 7,500-12,000 A | 0 | 0 | 0 | 0 | 0 | 0 | 7,500-12,000 A |
| Tidal sloughs | Tidal perennial aquatic | 75-160 M | 0 | 15-30 M | 0 | 0 | 0 | 0 | 0 | 90-190 M | 0 |
| | Valley/foot hill riparian | | | | | | | | | | |
| | Tidal freshwater emergent | | | | | | | | | | |
| | Saline emergent | | | | | | | | | | |

Notes: A = acres M = Miles of channel.

* Values are estimated.

**Estimated to be 10% of seasonal wetland acres in the American River Basin Ecological Management Zone.

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| Habitat Type or Feature | Habitat Subtype | Delta | | Bay | | Sacramento River | | San Joaquin River | | Total | |
|------------------------------|---------------------------|---------------------------|----------|----------|----------|------------------|----------|-------------------|----------|----------|-----------------|
| | | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced |
| Channel Islands | Valley/foot hill riparian | 200 A | | 0 | 0 | 0 | 0 | 0 | 0 | 200 A | |
| | | Tidal freshwater emergent | | | | | | | | | |
| Tidal freshwater emergent | | 30,000-45,000 A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30,000-45,000 A |
| Nontidal freshwater emergent | | 0 | 17,000 A | 0 | 0 | 0 | 0 | 0 | 0 | 17,000 A | 0 |
| Lacustrine Deep water | | 1,600 A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,600 A | 0 |
| Managed seasonal wetland | | 28,000 A | 4,000 A | 0 | 58,000 A | 0 | 46,890 A | 0 | 1,400 A | 28,000 A | 106,290 A |
| Natural seasonal wetlands | Vernal pools | 100 A* | 0 | 100 A | 0 | 0 | 0 | 0 | 0 | 200 A* | 0 |

Notes: A = acres M = Miles of channel.

* Values are estimated.

**Estimated to be 10% of seasonal wetland acres in the American River Basin Ecological Management Zone.

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| Habitat Type or Feature | Habitat Subtype | Region | | | | | | | | | |
|-------------------------|--------------------------------|---------------|----------|----------|---------------|------------------|----------------|-------------------|---------------|----------------|-------------------|
| | | Delta | | Bay | | Sacramento River | | San Joaquin River | | Total | |
| | | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced | Restored | Enhanced |
| Riparian | Valley/foot hill | 43-75 M | 500 A | 40-60 M | 0 | 150 M | 8,000-14,000 A | 50 M | 2,740-3,240 A | 283-335 M | 11,240-17,740 A |
| | Montane | 500 A | | | | | | | | 500 A | |
| Grassland | Perennial | 4,000-6,000 A | 0 | 4,000 A | 0 500-1,000 A | 0 | 4,400 A** | 0 | 0 | 8,000-10,000 A | 4,900-5,400 A |
| | Annual | | | | | | | | | | |
| Inland dune scrub | | 0 | 50-100 A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50-100 A |
| Agricultural | Seasonally flooded agriculture | 0 | 40000 | 0 | 0 | 0 | 298,643 A | 0 | 3,000-4,000 A | 0 | 341,643-377,643 A |
| | Upland cropland | | | | | | | | | | |

Notes: A = acres M = Miles of channel.

* Values are estimated.

**Estimated to be 10% of seasonal wetland acres in the American River Basin Ecological Management Zone.

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Comparison of Existing Habitat Area and ERP Target Habitat Area for the Delta Ecological Management Zone

| Existing Habitat Area (acres) | Central and West Delta | East Delta | North Delta | South Delta | Total |
|---------------------------------------|------------------------|---------------|----------------|----------------|----------------|
| Aquatic | 32,586 | 3,457 | 10,993 | 5,670 | 52,706 |
| Saline emergent | 39 | 0 | 2 | 0 | 41 |
| Seasonal wetland | 548 | 642 | 4,645 | 415 | 6,250 |
| Freshwater permanent emergent wetland | 5,089 | 1,140 | 4,650 | 624 | 11,503 |
| Valley/foothill riparian | 1,032 | 639 | 1,379 | 870 | 3,919 |
| Upland woodland and scrub | 246 | 2,232 | 1,614 | 261 | 4,353 |
| Grassland | 33,658 | 10,963 | 42,359 | 40,274 | 127,254 |
| Upland cropland | 113,474 | 64,945 | 133,299 | 100,059 | 411,777 |
| Orchards and vineyards | 4,216 | 3,232 | 8,961 | 7,116 | 23,525 |
| Developed and disturbed | 18,933 | 11,972 | 29,468 | 20,746 | 81,118 |
| Total | 209,819 | 99,223 | 237,370 | 176,034 | 722,446 |

| Target Additional Area (acres) | Central and West Delta | East Delta | North Delta | South Delta | Total |
|---------------------------------------|------------------------|---------------|---------------|---------------|---------------------|
| Aquatic | 3,100 | 1,500 | 2,500 | 2,500 | 9,600 |
| Saline emergent | 12,401 | 7,097 | 14,567 | 10,935 | 45,000 * |
| Seasonal wetland | 8,000 | 6,000 | 4,000 | 12,000 | 30,000 |
| Freshwater permanent emergent wetland | 10,000 | 3,000 | 3,000 | 4,000 | 20,000 |
| Valley/foothill riparian | 0 | 200 | 700 | 400 | 1,300 **, **** |
| Upland woodland and scrub | | | | | |
| Grassland | | | | | *** |
| Upland cropland | | | | | |
| Orchards and vineyards | | | | | |
| Developed and disturbed | | | | | |
| Total | 33,501 | 17,797 | 24,767 | 29,835 | 105,900 **** |

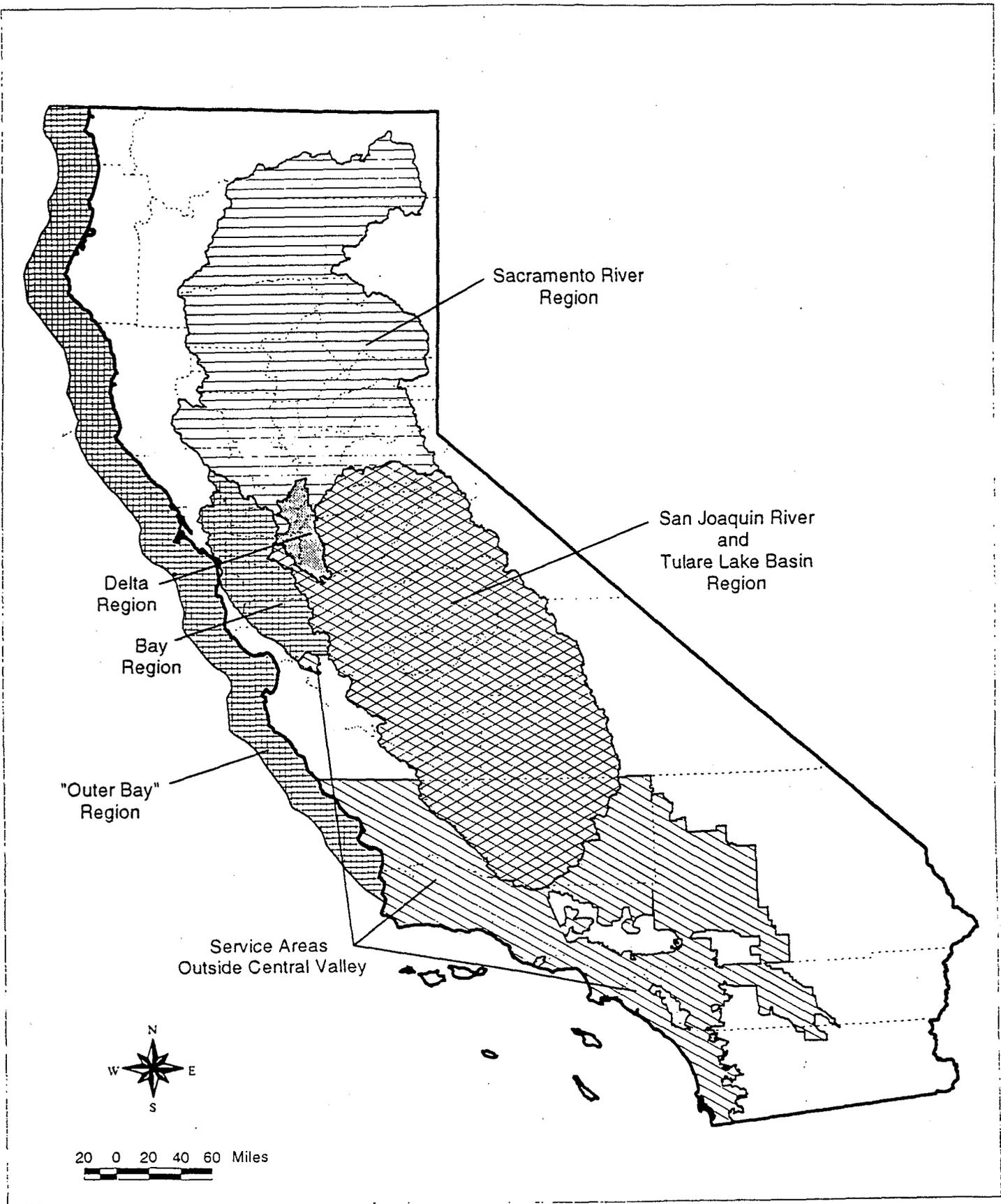
| Area after ERP (acres) | Central and West Delta | East Delta | North Delta | South Delta | Total |
|---------------------------------------|------------------------|---------------|----------------|----------------|----------------|
| Aquatic | 35,686 | 4,957 | 13,493 | 8,170 | 62,306 |
| Saline emergent | 12,440 | 7,097 | 14,569 | 10,935 | 45,041 |
| Seasonal wetland | 8,548 | 6,642 | 8,645 | 12,415 | 36,250 |
| Freshwater permanent emergent wetland | 15,089 | 4,140 | 7,650 | 4,624 | 31,503 |
| Valley/foothill riparian | 1,032 | 839 | 2,079 | 1,270 | 5,219 |
| Upland woodland and scrub | 246 | 2,232 | 1,614 | 261 | 4,353 |
| Grassland | 33,658 | 10,963 | 42,359 | 40,274 | 127,254 |
| Upland cropland | 79,973 | 47,148 | 108,532 | 70,224 | 305,877 |
| Orchards and vineyards | 4,216 | 3,232 | 8,961 | 7,116 | 23,525 |
| Developed and disturbed | 18,933 | 11,972 | 29,468 | 20,746 | 81,118 |
| Total | 209,819 | 99,223 | 237,370 | 176,034 | 722,446 |

Notes:

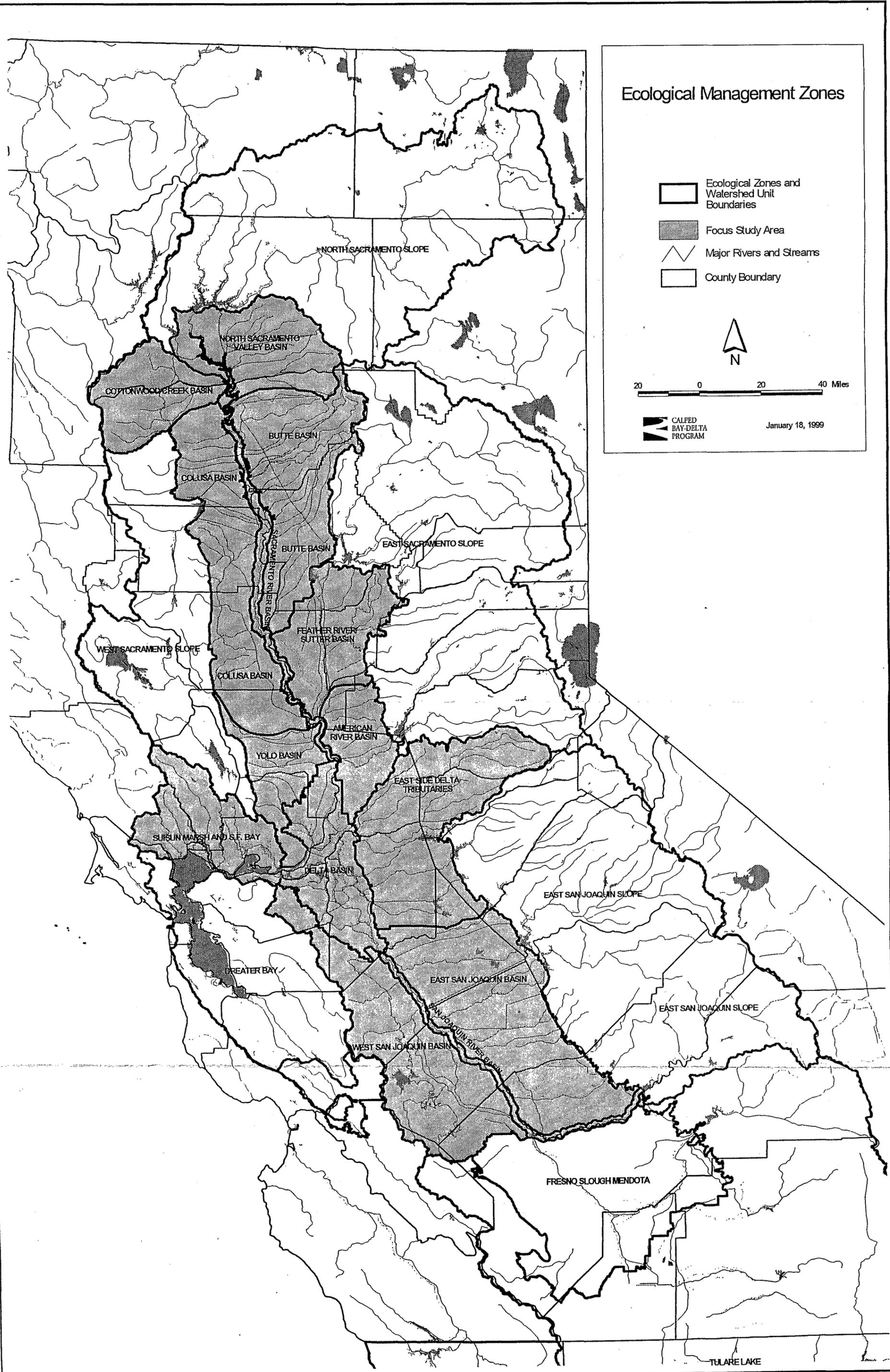
- * Tidal fresh emergent wetland assumed to be allocated proportional to size of Management Unit
- ** Based on conversion of linear target and assumed widths
- *** Perennial grassland is assumed to be restored from annual grassland
- **** Upper limit of acreage estimate

SECTION IX:

**CALFED REGIONS AND THE
ECOSYSTEM RESTORATION PROGRAM FOCUS
STUDY AREA**



CALFED Regions



Ecological Management Zones

-  Ecological Zones and Watershed Unit Boundaries
-  Focus Study Area
-  Major Rivers and Streams
-  County Boundary



20 0 20 40 Miles

 CALFED
BAY-DELTA
PROGRAM

January 18, 1999

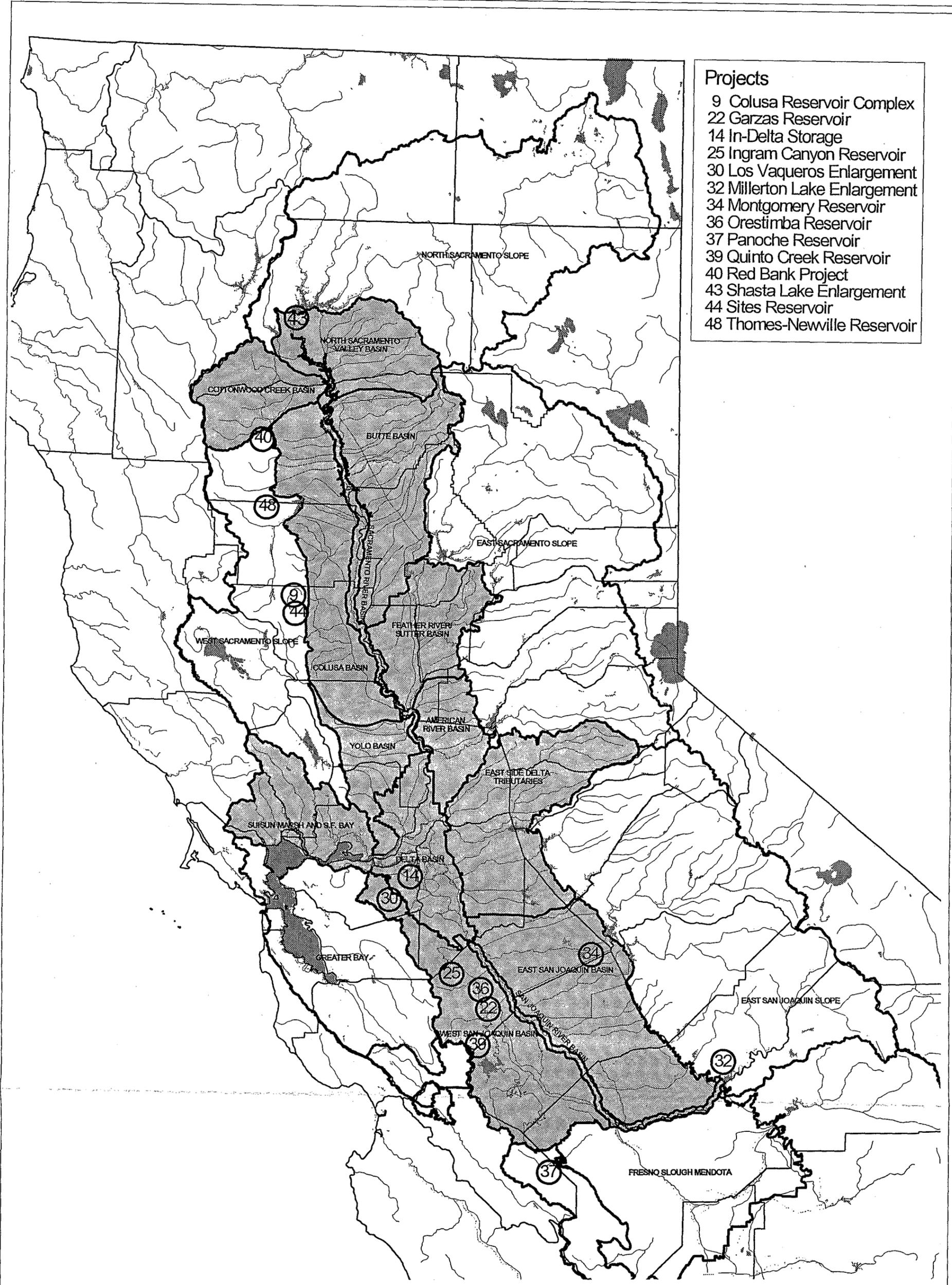
SECTION X:

**POTENTIAL CALFED SURFACE STORAGE AND
GROUNDWATER STORAGE SITES**

| Reservoir Sites Retained for Additional CALFED Consideration (Retained for Future Evaluation and Screening) | | | |
|--|---|---|-------------------------------|
| Project | Location | Type | Gross Storage Capacity |
| Colusa Reservoir Complex (Site 9) | Colusa/Glenn Counties Funks Creek | Off-Stream Storage | 3,300 TAF |
| Garzas Reservoir (Site 22) | Stanislaus County Garzas Creek | Off-Stream Storage | 139 to 1,754 TAF |
| In-Delta Storage (Site 14) | Sacramento/San Joaquin Delta | Island Storage in the Delta | 230 TAF |
| Ingram Canyon (Site 25) | Stanislaus County Ingram Creek | Off-Stream Storage | 333 to 1,201 TAF |
| Los Vaqueros Enlargement (Site 30) | Contra Costa County Kellogg Creek | Off-Stream Storage | Additional 965 TAF |
| Millerton Lake Enlargement (Site 32) | Fresno County San Joaquin River | On-Stream Storage | Additional 720 TAF |
| Montgomery Reservoir (Site 34) | Stanislaus County Dry Creek | Off-Stream Storage | 240 TAF |
| Orestimba Reservoir (Site 36) | Stanislaus County Orestimba Creek | Off-Stream Storage | 380 to 1,140 TAF |
| Panoche Reservoir (Site 37) | Fresno County Silver Creek | Off-Stream Storage | 160 to 3,100 TAF |
| Quinto Creek Reservoir (Site 39) | Merced/Stanislaus County Quinto Creek | Off-Stream Storage | 332 to 381 TAF |
| Red Bank Project (Dippingvat- Schoenfield Project) (Site 40) | Tehama County S.F. Cottonwood Creek | Off-Stream Storage - Schoenfield Reservoir | Schoenfield-250 TAF |
| Shasta Lake Enlargement (6.5- foot raise of existing dam) (Site 43) | Shasta County Sacramento River | On-Stream Storage | Additional 290 TAF |
| Sites Reservoir (Site 44) | Colusa and Glenn Counties Funks & Stone Corral Cks | Off-Stream Storage | 1,200 to 1,900 TAF |
| Thomes-Newville Reservoir (Site 48) | Glenn County Thomes & Stoney Creek | Off-Stream Storage | 1,840 - 3,080 TAF |

~~Of course, the relationship of water supply benefits to groundwater and surface storage volume is highly dependent on operating assumptions. Much more detailed information about specific locations of new storage, potential allocation of storage benefits, and operational goals and constraints would be necessary to determine an optimal volume of storage from a water supply perspective. In addition, long-term effective groundwater management throughout California will be essential to a range of CALFED Programs, including water transfers, groundwater~~

Reservoir Sites under Consideration by CALFED



- Projects**
- 9 Colusa Reservoir Complex
 - 22 Garzas Reservoir
 - 14 In-Delta Storage
 - 25 Ingram Canyon Reservoir
 - 30 Los Vaqueros Enlargement
 - 32 Millerton Lake Enlargement
 - 34 Montgomery Reservoir
 - 36 Orestimba Reservoir
 - 37 Panoche Reservoir
 - 39 Quinto Creek Reservoir
 - 40 Red Bank Project
 - 43 Shasta Lake Enlargement
 - 44 Sites Reservoir
 - 48 Thomes-Newville Reservoir

Ecological Management Zones

- Ecological Management Zones and Watershed Unit Boundaries
- Focus Study Area
- Major Rivers and Streams
- County Boundary

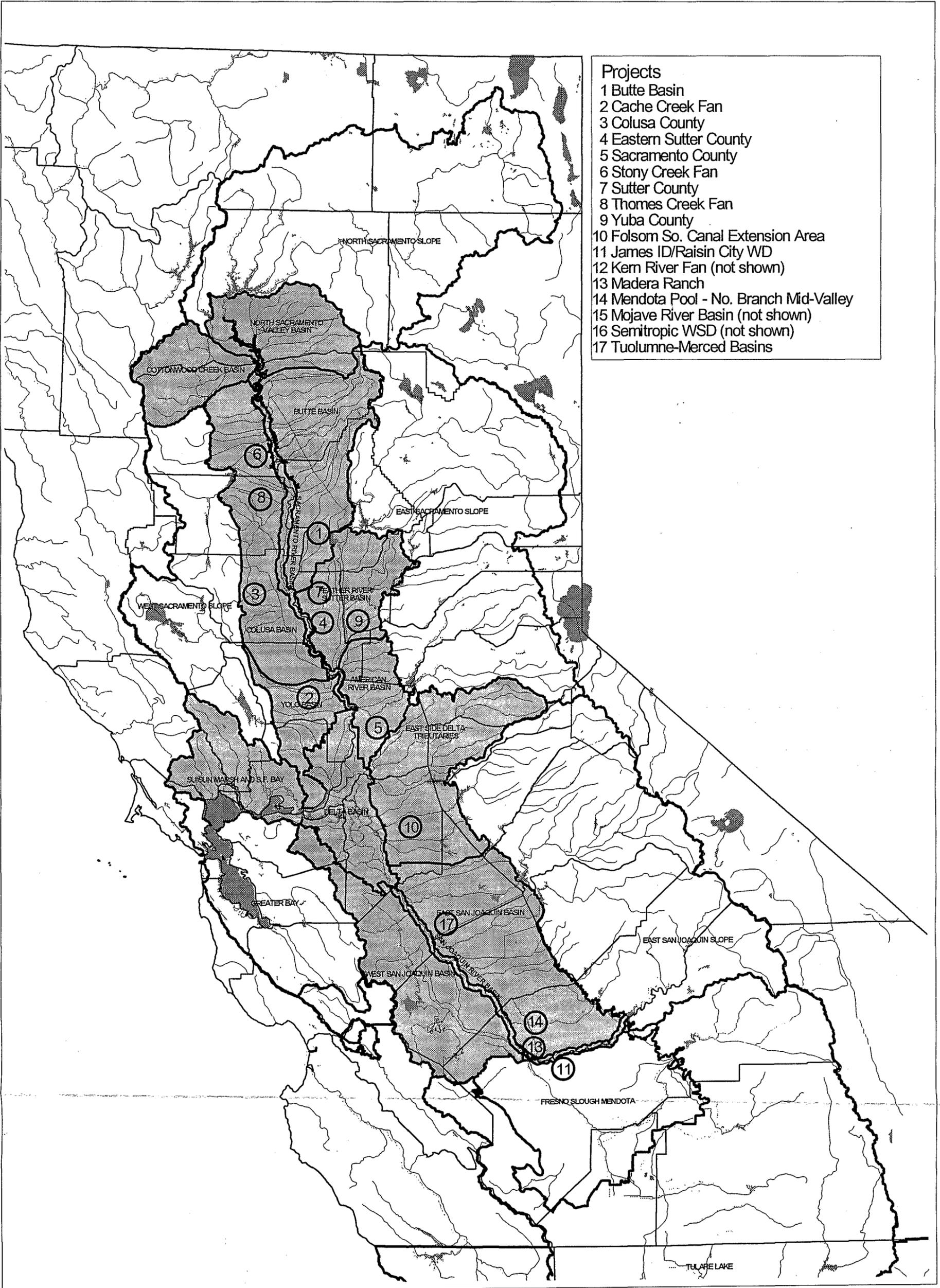


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January 21, 1999



Groundwater Storage Components under Consideration by CALFED



- Projects**
- 1 Butte Basin
 - 2 Cache Creek Fan
 - 3 Colusa County
 - 4 Eastern Sutter County
 - 5 Sacramento County
 - 6 Stony Creek Fan
 - 7 Sutter County
 - 8 Thomas Creek Fan
 - 9 Yuba County
 - 10 Folsom So. Canal Extension Area
 - 11 James ID/Raisin City WD
 - 12 Kern River Fan (not shown)
 - 13 Madera Ranch
 - 14 Mendota Pool - No. Branch Mid-Valley
 - 15 Mojave River Basin (not shown)
 - 16 Semitropic WSD (not shown)
 - 17 Tuolumne-Merced Basins

Ecological Management Zones

- Ecological Management Zones and Watershed Unit Boundaries
- Focus Study Area
- Major Rivers and Streams
- County Boundary



20 0 20 40 Miles

January 21, 1999



Groundwater Storage Preliminary Component Inventory

| Component | Location | Map Location |
|--|--|-----------------|
| Groundwater Storage North of Delta | | |
| Butte Basin | Butte County | 1 |
| Cache Creek Fan | Yolo County | 2 |
| Colusa County | Arbuckle area | 3 |
| Eastern Sutter County | Sutter County east of Feather River | 4 |
| Sacramento County | Sacramento County south of American River | 5 |
| Stony Creek Fan | Glenn County Stony Creek | 6 |
| Sutter County | South of Sutter Buttes | 7 |
| Thomes Creek Fan | Tehama County Thomes Creek | 8 |
| Yuba County | Yuba County - south of the Yuba River | 9 |
| Groundwater Storage South of Delta | | |
| Stockton East | San Joaquin County | 10 |
| James ID/Raisin City WD, Mid-Valley Canal Reaches 1-3 | Central Fresno County | 11 |
| Kern River Fan | Kern County | 12 |
| Madera Ranch | Madera County | 13 |
| Mendota Pool - No. Branch Mid-Valley | Madera County | 14 |
| Mojave River Basins | San Bernardino | 15 |
| Semitropic WSD | Kern County | 16 |

SECTION XI:

**SPECIES CONSERVATION MEASURES
CHECKLIST AND RECOMMENDATION FORMS**

Evaluation Species Conservation Measures Review Checklist:
Please Check the Species for Which You have Reviewed Conservation Measures

| Check Here | Evaluation Species | Check Here | Evaluation Species |
|------------|-------------------------------------|------------|-----------------------------------|
| | Mammals | | Reptiles |
| | San Joaquin kit fox | | Alameda whipsnake |
| | Giant kangaroo rat | | Blunt-nosed leopard lizard |
| | Ringtail | | San Joaquin whipsnake |
| | Nelson's antelope ground squirrel | | Western pond turtle |
| | Riparian brush rabbit | | Amphibians |
| | San Joaquin Valley woodrat | | California red-legged frog |
| | Greater western mastiff-bat | | Limestone salamander |
| | Birds | | California tiger salamander |
| | Least Bell's vireo | | Foothill yellow-legged frog |
| | Northern spotted owl | | Invertebrates |
| | Bald eagle | | Callippe silverspot |
| | California condor | | Lange's metalmark |
| | Little willow flycatcher | | Valley elderberry longhorn beetle |
| | Bank swallow | | Monarch butterfly (roost) |
| | Western yellow-billed cuckoo | | Plants |
| | Greater sandhill crane | | Antioch Dunes evening-primrose |
| | White-tailed kite | | Calistoga popcornflower |
| | Golden eagle | | Clara Hunt's milkvetch |
| | Swainson's hawk | | Contra Costa wallflower |
| | Mountain plover | | El Dorado bedstraw |
| | California yellow warbler | | Hartweg's golden sunburst |
| | Grasshopper sparrow | | Large-flowered fiddleneck |
| | Tricolored blackbird | | Layne's ragwort |
| | Yellow-breasted chat | | Marin western flax |
| | Long-eared owl | | Pallid manzanita |
| | Short-eared owl | | Pine Hill ceanothus |
| | Western burrowing owl | | Pine Hill flannelbush |
| | Long-billed curlew | | San Benito evening-primrose |
| | Cooper's hawk | | San Joaquin adobe sunburst |
| | Northern harrier | | San Joaquin woollythreads |
| | Osprey | | Showy Indian clover |
| | Double-crested cormorant (rookery) | | Sonoma alopecurus |
| | Black-crowned night heron (rookery) | | Sonoma spineflower |
| | Great blue heron (rookery) | | Stebbins' morning-glory |
| | Great egret (rookery) | | Tiburon Indian paintbrush |

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| Check Here | Evaluation Species | Check Here | Evaluation Species |
|------------|----------------------------------|------------|---|
| | Snowy egret (rookery) | | Tiburon jewelflower |
| | Plants (cont.) | | Plants (cont.) |
| | Tiburon Mariposa lily | | Ferris' milkvetch |
| | White-rayed pentachaeta | | Heartscale |
| | Baker's larkspur | | Heckard's peppergrass |
| | Baker's manzanita | | Hospital Canyon larkspur |
| | California vervain | | Lesser saltscale |
| | Delta coyote-thistle | | Lost Hills crownscale |
| | Indian Valley brodiaea | | Mad-dog skullcap |
| | Ione buckwheat | | Mariposa clarkia |
| | Irish Hill buckwheat | | Marsh checkerbloom |
| | Marin checkerbloom | | Merced phacelia |
| | Mason's ceanothus | | Mt. Diablo jewelflower |
| | Mt. Diablo bird's-beak | | Mt. Diablo manzanita |
| | North Coast semaphore grass | | Mt. Hamilton coreopsis |
| | Rock sanicle | | Mt. Hamilton jewelflower |
| | Santa Cruz tarplant | | Napa western flax |
| | Yellow larkspur | | Northern California black walnut (native) |
| | Ione manzanita | | Panoche peppergrass |
| | Rawhide Hill onion | | Red Hills ragwort |
| | Alkali milkvetch | | Red-flowered lotus |
| | Arburua Ranch jewelflower | | San Joaquin spearscale |
| | Ben Lomond buckwheat | | Saw-toothed lewisia |
| | Big tarplant | | Shaggyhair lupine |
| | Brittlescale | | Sharsmith's harebell |
| | California beaked-rush | | Showy madia |
| | Congdon's lomatium | | Slough thistle |
| | Congdon's tarplant | | Spiny-sepaed button-celery |
| | Contra Costa manzanita | | Henderson's bent grass |
| | Diablo helianthella | | San Antonio Hills monardella |
| | Diamond-petaled California poppy | | |

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**SPECIES CONSERVATION MEASURE RECOMMENDATIONS FOR
ACHIEVING SPECIES PRESCRIPTIONS**

Species Name: _____ Date: _____

Preparer Name and Affiliation: _____

Applicable NCCP Habitat Types: _____

| Recommended Additional Conservation Measure |
|---|
| |
| Rationale and Documentation |
| |

SECTION XII:

NOTE PAGES

CALFED CONSERVATION STRATEGY
SPECIES REVIEW WORKSHOP
January 27, 1999

#4

WORKSHOP PACKET 4:
SUPPORTING MATERIALS

#4

SECTION I:
**SPECIES TO BE INCLUDED IN THE CALFED
CONSERVATION STRATEGY**

**Draft List of Species to Be Included
in the CALFED Conservation Strategy
January 22, 1999**

Criteria for Inclusion on this List

This is a list of special-status species known to occur or with potential to occur in the Ecosystem Restoration Program's (ERP's) 14 Ecological Zones and that are proposed to be included in the Conservation Strategy. The list was developed using the criteria described below.

Special-Status Species

Special-status species are any species having some form of endangerment or concern status.

Special-status species are species that are:

- federally listed as threatened or endangered under the Endangered Species Act (ESA);
- California listed as threatened or endangered under the California Endangered Species Act (CESA);
- proposed for federal listing under the ESA;
- California candidates under the CESA;
- federal candidates under the ESA;
- California fully protected species or specified birds;
- California species of special concern (CSC);
- California Native Plant Society (CNPS) List 1A, List 1B, List 2, or List 3; or
- other species of concern to CALFED.

The determination that a species has the potential to occur in the ERP Ecological Zones was based on the species' known range and the presence of suitable habitat within ERP Ecological Zones.

Species Addressed by the Conservation Strategy

Criteria for selection of species to be covered in the Conservation Strategy were:

- the species is federally or California listed as rare, threatened, or endangered,
- the species is a California fully protected species, or
- the species could become federally or California listed as threatened or endangered during the term of CALFED implementation, and
- the species could be affected by CALFED actions.

Species considered to have the potential to become federally or California listed as threatened or endangered during the term of CALFED implementation are those that are:

- proposed for federal listing,
- California candidates,
- federal candidates,
- California species of special concern (each species considered individually for inclusion - see Decision Criteria), or
- specified birds (each species considered individually for inclusion - see Decision Criteria),
- CNPS List 1 and List 2 (each species considered individually for inclusion - see Decision Criteria), or
- Other species of concern (each species considered individually for inclusion - see Decision Criteria).

CSC, specified birds, CNPS Lists 1-3, and other species of concern are included if CALFED actions could affect a substantial portion of the species' range or important habitat or if the species is rare or its distribution is limited.

Notes:

| Type ¹ | Species Goals ² | Common Name | Scientific Name | Status ³ | | | Potential Effects of CALFED Actions on Species ⁴ | | | |
|---|----------------------------|---------------------------------------|--|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
| | | | | | | | | | | |
| Federally Listed as Endangered or Threatened | | | | | | | | | | |
| M | m | San Joaquin kit fox | <i>Vulpes macrotis mutica</i> | E | CT | - | X | | | L |
| M | m | Giant kangaroo rat | <i>Dipodomys ingens</i> | E | CE | - | | X2 | | L |
| M | r | Salt marsh harvest mouse | <i>Reithrodontomys raviventris</i> | E | CE/FP | - | X | | | L |
| B | r | Least Bell's vireo | <i>Vireo bellii pusillus</i> | E | E | - | X | | | L |
| B | m | Northern spotted owl | <i>Strix occidentalis caurina</i> | T | CSC | - | | X2 | | L |
| B | | Northern spotted owl critical habitat | <i>Strix occidentalis caurina critical habitat</i> | | | | | | | |

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| Type ¹ | Species Goals ² | Common Name | Scientific Name | Status ³ | | | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
|-------------------|----------------------------|--|---|---------------------|-------|-------|-----------------|---------------------------|---------------------------------------|--------------------------------|
| | | | | Federal | State | Other | | | | |
| B | m | California least tern | <i>Sterna antillarum browni</i> | E | CT/FP | - | X | | L | |
| B | m | Western snowy plover | <i>Charadrius alexandrinus nivosus</i> | T | - | - | X | | L | |
| B | r | California clapper rail | <i>Rallus longirostris obsoletus</i> | E | CE/FP | - | X | | L | |
| B | m | American peregrine falcon | <i>Falco peregrinus anatum</i> | E | CE/FP | - | X | | L | |
| B | | American peregrine falcon critical habitat | <i>Falco peregrinus anatum critical habitat</i> | | | | | | | |
| B | m | Bald eagle | <i>Haliaeetus leucocephalus</i> | T/PR | CE/FP | - | X | | L | |
| B | m | California condor | <i>Gymnogyps californianus</i> | E | CE/FP | - | | X1 | L | |
| B | m | Aleutian Canada goose | <i>Branta canadensis leucopareia</i> | T | - | - | X | | L | |
| B | m | California brown pelican | <i>Pelecanus occidentalis californicus</i> | E | CE/FP | - | | X1 | L | |
| R | m | Alameda whipsnake | <i>Masticophis lateralis euryxanthus</i> | T | CT | - | X | | L | |
| R | r | Giant garter snake | <i>Thamnophis gigas</i> | T | CT | - | X | | L | |
| R | m | Blunt-nosed leopard lizard | <i>Gambelia silus</i> | E | CE/FP | - | X | | L | |
| A | m | California red-legged frog | <i>Rana aurora draytonii</i> | T | CSC | - | X | | L | |
| A | m | Limestone salamander | <i>Hydromantes brunus</i> | T | - | - | | X2 | L | |
| F | R | Delta smelt | <i>Hypomesus transpacificus</i> | T | CT | - | X | | L | |
| F | | Delta smelt critical habitat | <i>Hypomesus transpacificus critical habitat</i> | | | | | | | |
| F | | Central Coast Steelhead Evolutionary Significant Unit (ESU) | <i>Oncorhynchus mykiss</i> | T | - | - | | | L | |
| F | R | Central Valley Steelhead Evolutionarily Significant Unit (ESU) | <i>Oncorhynchus mykiss (cv)</i> | T | - | - | X | | L | |
| F | R | Winter-run chinook salmon | <i>Oncorhynchus tshawytscha (wr)</i> | E | CE | - | X | | L | |
| F | | Winter-run chinook salmon critical habitat | <i>Oncorhynchus tshawytscha critical habitat</i> | | | | | | | |
| F | m | Tidewater goby | <i>Eucyclogobius newberryi</i> | E | CSC | - | | X | L | |
| I | m | Callippe silverspot | <i>Speyeria callippe callippe</i> | E | - | - | X | | L | |
| I | m | Lange's metalmark | <i>Apodemia mormo langei</i> | E | - | - | X | | L | |
| I | R | Valley elderberry longhorn beetle | <i>Desmocerus californicus dimorphus</i> | T | - | - | X | | L | |
| I | | Valley elderberry longhorn beetle critical habitat | <i>Desmocerus californicus dimorphus critical habitat</i> | | | | | | | |
| I | r | Delta green ground beetle | <i>Elaphrus viridis</i> | T | - | - | X | | L | |

| Type ¹ | Species Goals ² | Common Name | Scientific Name | Status ³ | | | Potential Effects of CALFED Actions on Species ⁴ | | | Decision Criteria ⁵ |
|-------------------|----------------------------|---|--|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| | | | | | | | | | | |
| I | | Delta green ground beetle critical habitat | <i>Elaphrus viridis critical habitat</i> | | | | | | | |
| I | m | California freshwater shrimp | <i>Syncaris pacifica</i> | E | - | - | X | | L | |
| I | m | Conservancy fairy shrimp | <i>Branchinecta conservatio</i> | E | - | - | X | | L | |
| I | m | Longhorn fairy shrimp | <i>Branchinecta longiantenna</i> | E | - | - | | X2 | L | |
| I | m | Vernal pool fairy shrimp | <i>Branchinecta lynchi</i> | T | - | - | X | | L | |
| I | m | Vernal pool tadpole shrimp | <i>Lepidurus packardii</i> | E | - | - | X | | L | |
| P | m | Antioch Dunes evening-primrose | <i>Oenothera deltoides ssp. howellii</i> | E | CE | 1B | X | | L | |
| P | | Antioch Dunes evening-primrose critical habitat | <i>Oenothera deltoides ssp. howellii critical habitat</i> | | | | | | | |
| P | m | Butte County meadowfoam | <i>Limnanthes floccosa ssp. californica</i> | E | CE | 1B | | X2 | L | |
| P | m | California seablite | <i>Suaeda californica</i> | E | - | 1B | X | | L | |
| P | m | California vervain | <i>Verbena californica</i> | T | CT | 1B | | X2 | L | |
| P | m | Calistoga popcornflower | <i>Plagiobothrys strictus</i> | E | CT | 1B | | X2 | L | |
| P | m | Chinese Camp brodiaea | <i>Brodiaea pallida</i> | T | CE | 1B | X | | L | |
| P | m | Clara Hunt's milkvetch | <i>Astragalus clarianus</i> | E | CT | 1B | | X2 | L | |
| P | m | Colusa grass | <i>Neostapfia colusana</i> | T | CE | 1B | X | | L | |
| P | m | Contra Costa goldfields | <i>Lasthenia conjugens</i> | E | - | 1B | X | | L | |
| P | m | Contra Costa wallflower | <i>Erysimum capitatum ssp. angustatum</i> | E | CE | 1B | X | | L | |
| P | | Contra Costa wallflower critical habitat | <i>Erysimum capitatum ssp. angustatum critical habitat</i> | | | | | | | |
| P | r | Crampton's tuctoria | <i>Tuctoria mucronata</i> | E | CE | 1B | X | | L | |
| P | m | El Dorado bedstraw | <i>Galium californicum ssp. sierrae</i> | E | R | 1B | | X2 | L | |
| P | m | Few-flowered navarretia | <i>Navarretia leucocephala ssp. pauciflora</i> | E | CT | 1B | | X2 | L | |
| P | m | Greene's tuctoria | <i>Tuctoria greenei</i> | E | R | 1B | X | | L | |
| P | m | Hairy oreutt grass | <i>Orcuttia pilosa</i> | E | CE | 1B | X | | L | |
| P | m | Hartweg's golden sunburst | <i>Pseudobahia bahifolia</i> | E | CE | 1B | X | | L | |
| P | m | Hoover's eriastrum | <i>Eriastrum hooveri</i> | T | - | - | X | | L | |
| P | m | Hoover's spurge | <i>Chamaesyce hooveri</i> | T | - | 1B | X | | L | |

| Type ¹ | Species Goals ² | Common Name | Scientific Name | Status ³ | | | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
|-------------------|----------------------------|--|---|---------------------|-------|-------|-----------------|---------------------------|---------------------------------------|--------------------------------|
| | | | | Federal | State | Other | | | | |
| P | m | Kenwood Marsh checkerbloom | <i>Sidalcea oregana ssp. valida</i> | E | CE | 1B | X | | L | |
| P | m | Large-flowered fiddleneck | <i>Amsinckia grandiflora</i> | E | CE | 1B | X | | L | |
| P | | Large-flowered fiddleneck critical habitat | <i>Amsinckia grandiflora critical habitat</i> | | | | | | | |
| P | m | Layne's ragwort | <i>Senecio layneae</i> | T | R | 1B | X | | L | |
| P | m | Loch Lomond button-celery | <i>Eryngium constancei</i> | E | CE | 1B | | X2 | L | |
| P | m | Many-flowered navarretia | <i>Navarretia leucocephala ssp. pliantha</i> | E | CT | 1B | | X2 | L | |
| P | m | Marin western flax | <i>Hesperolinon congestum</i> | T | CT | 1B | | X2 | L | |
| P | m | Napa blue grass | <i>Poa napensis</i> | E | CE | 1B | | X2 | L | |
| P | m | Pallid manzanita | <i>Arctostaphylos pallida</i> | T | CE | 1B | | X2 | L | |
| P | m | Palmate-bracted bird's-beak | <i>Cordylanthus palmatus</i> | E | CE | 1B | X | | L | |
| P | m | Pine Hill ceanothus | <i>Ceanothus roderickii</i> | E | R | 1B | | X2 | L | |
| P | m | Pine Hill flannelbush | <i>Fremontodendron decumbens</i> | E | R | 1B | | X2 | L | |
| P | m | Pitkin Marsh lily | <i>Lilium pardalinum ssp. pitkinense</i> | E | CE | 1B | X | | L | |
| P | m | Rawhide Hill onion | <i>Allium tuolumnense</i> | T | - | 1B | X | | P | |
| P | m | Sacramento orcutt grass | <i>Orcuttia viscida</i> | E | CE | 1B | X | | L | |
| P | m | San Benito evening-primrose | <i>Camissonia benitensis</i> | T | - | 1B | | X2 | L | |
| P | m | San Joaquin adobe sunburst | <i>Pseudobahia peirsonii</i> | T | CE | 1B | | X2 | L | |
| P | m | San Joaquin Valley orcutt grass | <i>Orcuttia inaequalis</i> | T | CE | 1B | X | | L | |
| P | m | San Joaquin woollythreads | <i>Lembertia congdonii</i> | E | - | 1B | X | | L | |
| P | m | Sebastopol meadowfoam | <i>Limnanthes vincularis</i> | E | CE | 1B | | X2 | L | |
| P | m | Showy Indian clover | <i>Trifolium amoenum</i> | E | - | 1B | X | | L | |
| P | m | Slender orcutt grass | <i>Orcuttia tenuis</i> | T | CE | 1B | X | | L | |
| P | R | Soft bird's-beak | <i>Cordylanthus mollis ssp. mollis</i> | E | R | 1B | X | | L | |
| P | m | Sonoma alopecurus | <i>Alopecurus aequalis var. sonomensis</i> | E | - | 1B | X | | L | |
| P | m | Sonoma spineflower | <i>Chorizanthe valida</i> | E | CE | 1B | | X2 | L | |
| P | m | Sonoma sunshine | <i>Blennosperma bakeri</i> | E | CE | 1B | | X2 | L | |
| P | m | Stebbins' morning-glory | <i>Calystegia stebbinsii</i> | E | CE | 1B | | X2 | L | |
| P | m | Succulent owl's-clover | <i>Castilleja campestris ssp. succulenta</i> | T | CE | 1B | X | | L | |

| Type ¹ | Species Goals ² | Common Name | Scientific Name | Status ³ | | | Potential Effects of CALFED Actions on Species ⁴ | | | Decision Criteria ⁵ |
|--|----------------------------|-----------------------------------|--|---------------------|--------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| P | R | Suisun thistle | <i>Cirsium hydrophilum</i> var. <i>hydrophilum</i> | E | - | 1B | X | | | L |
| P | m | Tiburon Indian paintbrush | <i>Castilleja affinis</i> ssp. <i>neglecta</i> | E | CT | 1B | | X2 | | L |
| P | m | Tiburon jewelflower | <i>Streptanthus niger</i> | E | CE | 1B | | X2 | | L |
| P | m | Tiburon Mariposa lily | <i>Calochortus tiburonensis</i> | T | CT | 1B | | X2 | | L |
| P | m | White sedge | <i>Carex albida</i> | E | CE | 1B | X | | | L |
| P | m | White-rayed pentachaeta | <i>Pentachaeta bellidiflora</i> | E | CE | 1B | | X2 | | L |
| California Listed as Endangered, Threatened, Rare, or Fully Protected | | | | | | | | | | |
| M | m | Ringtail | <i>Bassariscus astutus</i> | - | FP | - | X | | | L |
| M | m | Nelson's antelope ground squirrel | <i>Ammospermophilus nelsoni</i> | - | CT | SC | X | | | L |
| M | r | Riparian brush rabbit | <i>Sylvilagus bachmani riparius</i> | PE | CE | - | X | | | L |
| B | r | Little willow flycatcher | <i>Empidonax traillii brewsteri</i> | - | CE | SC | X | | | L |
| B | r | Bank swallow | <i>Riparia riparia</i> | - | CT | - | X | | | L |
| B | r | Western yellow-billed cuckoo | <i>Coccyzus americanus occidentalis</i> | - | CE | - | X | | | L |
| B | r | Greater sandhill crane | <i>Grus canadensis tabida</i> | - | CT/FP | - | X | | | L |
| B | r | California black rail | <i>Laterallus jamaicensis coturniculus</i> | - | CT/FP | SC | X | | | L |
| B | m | White-tailed kite | <i>Elanus leucurus</i> | - | FP | - | X | | | L |
| B | m | Golden eagle | <i>Aquila chrysaetos</i> | PR | CSC/FP | - | | X1 | | L |
| B | r | Swainson's hawk | <i>Buteo swainsoni</i> | - | CT | SC | X | | | L |
| P | m | Baker's larkspur | <i>Delphinium bakeri</i> | PE | R | 1B | | X2 | | L |
| P | m | Baker's manzanita | <i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i> | - | R | 1B/SC | | X2 | | L |
| P | m | Boggs Lake hedge-hyssop | <i>Gratiola heterosepala</i> | - | CE | 1B | X | | | L |
| P | r | Delta coyote-thistle | <i>Eryngium racemosum</i> | - | CE | 1B/SC | X | | | L |
| P | m | Indian Valley brodiaea | <i>Brodiaea coronaria</i> ssp. <i>rosea</i> | - | CE | 1B | | X2 | | L |
| P | m | Ione buckwheat | <i>Eriogonum apricum</i> var. <i>apricum</i> | PE | CE | 1B | | X2 | | P |
| P | m | Irish Hill buckwheat | <i>Eriogonum apricum</i> var. <i>prostratum</i> | PE | CE | 1B | | X2 | | L |
| P | m | Marin checkerbloom | <i>Sidalcea hickmanii</i> ssp. <i>viridis</i> | - | R | 1B/SC | | X2 | | L |
| P | m | Mason's ceanothus | <i>Ceanothus masonii</i> | - | R | 1B/SC | | X2 | | L |
| P | R | Mason's lilacopsis | <i>Lilaeopsis masonii</i> | - | R | 1B/SC | X | | | L |

| Type ¹ | Species Goals ² | Common Name | Scientific Name | Status ³ | | | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
|---|----------------------------|--|--------------------------------------|---------------------|-------|-------|-----------------|---------------------------|---------------------------------------|--------------------------------|
| | | | | Federal | State | Other | | | | |
| P | m | Mt. Diablo bird's-beak | <i>Cordylanthus nidularius</i> | - | R | 1B/SC | | X2 | L | |
| P | m | North Coast semaphore grass | <i>Pleurpogon hooverianus</i> | - | R | 1B/SC | | X2 | L | |
| P | m | Rock sanicle | <i>Sanicula saxatilis</i> | - | R | 1B/SC | X | | L | |
| P | m | Santa Cruz tarplant | <i>Holocarpha macradenia</i> | PT | CE | 1B | | X2 | L | |
| P | m | Yellow larkspur | <i>Delphinium luteum</i> | PE | R | 1B | | X2 | L | |
| Federally Proposed | | | | | | | | | | |
| M | r | San Joaquin Valley woodrat | <i>Neotoma fuscipes riparia</i> | PE | CSC | - | X | | P | |
| F | R | Sacramento splittail | <i>Pogonichthys macrolepidotus</i> | PT | CSC | - | X | | P | |
| F | R | Central Valley fall-run chinook salmon | <i>Oncorhynchus tshawytscha (fr)</i> | PT | CSC | - | X | | P | |
| F | R | Central Valley spring-run chinook salmon | <i>Oncorhynchus tshawytscha (sr)</i> | PE | CCT | - | X | | P | |
| P | m | Ione manzanita | <i>Arctostaphylos myrtifolia</i> | PT | - | 1B | | X2 | P | |
| Federal Candidate | | | | | | | | | | |
| B | m | Mountain plover | <i>Charadrius montanus</i> | C | CSC | - | X | | P | |
| A | m | California tiger salamander | <i>Ambystoma californiense</i> | C | CSC | - | X | | P | |
| California Species of Special Concern, or CNPS List 1 or 2 | | | | | | | | | | |
| M | m | Greater western mastiff-bat | <i>Eumops perotis californicus</i> | - | CSC | SC | X | | A | |
| M | R | Suisun ornate shrew | <i>Sorex ornatus sinuosus</i> | - | CSC | SC | X | | B | |
| B | r | Alameda song sparrow | <i>Melospiza melodia pusillula</i> | - | CSC | SC | X | | A | |
| B | r | California yellow warbler | <i>Dendroica petechia brewsteri</i> | - | CSC | - | X | | A | |
| B | m | Grasshopper sparrow | <i>Ammodramus savannarum</i> | - | CSC | - | X | | B | |
| B | r | Saltmarsh common yellowthroat | <i>Geothlypis trichas sinuosa</i> | - | CSC | SC | X | | A | |
| B | r | San Pablo song sparrow | <i>Melospiza melodia samuelis</i> | - | CSC | SC | X | | A | |
| B | R | Suisun song sparrow | <i>Melospiza melodia maxillaris</i> | - | CSC | SC | X | | A | |
| B | m | Tricolored blackbird | <i>Agelaius tricolor</i> | - | CSC | SC | X | | A | |
| B | m | Yellow-breasted chat | <i>Icteria virens</i> | - | CSC | - | X | | A | |
| B | m | Long-eared owl | <i>Asio otus</i> | - | CSC | - | X | | B | |
| B | m | Short-eared owl | <i>Asio flammeus</i> | - | CSC | - | X | | B | |

| Type ¹ | Species Goals ² | Common Name | Scientific Name | Status ³ | | | Potential Effects of CALFED Actions on Species ⁴ | | | |
|-------------------|----------------------------|------------------------------------|---|---------------------|------------------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
| B | m | Western burrowing owl | <i>Athene cunicularia hypugea</i> | - | CSC ¹ | SC | X | | | A |
| B | m | California gull | <i>Larus californicus</i> | - | CSC | - | X | | | B |
| B | m | Black tern | <i>Chlidonias niger</i> | - | CSC | SC | X | | | B |
| B | m | Long-billed curlew | <i>Numenius americanus</i> | - | CSC | - | X | | | A |
| B | m | Cooper's hawk | <i>Accipiter cooperii</i> | - | CSC | - | X | | | A |
| B | m | Northern harrier | <i>Circus cyaneus</i> | - | CSC | - | X | | | A |
| B | m | Osprey | <i>Pandion haliaetus</i> | - | CSC/SB | - | X | | | A |
| B | m | White-faced ibis | <i>Plegadis chihi</i> | - | CSC | SC | X | | | A |
| B | r | Western least bittern | <i>Ixobrychus axilis</i> | - | CSC | SC | X | | | A |
| B | m | Double-crested cormorant (rookery) | <i>Phalacrocorax auritus</i> | - | CSC | - | X | | | A |
| R | m | San Joaquin whipsnake | <i>Masticophis flagellum ruddocki</i> | - | CSC | SC | X | | | B |
| R | m | Western pond turtle | <i>Clemmys marmorata</i> | - | CSC | SC | X | | | A |
| A | m | Foothill yellow-legged frog | <i>Rana boylei</i> | - | CSC | SC | X | | | A |
| A | m | Western spadefoot | <i>Scaphiopus hammondi</i> | - | CSC | SC | X | | | A |
| F | r | Hardhead | <i>Mylopharodon conocephalus</i> | - | CSC | - | X | | | B |
| F | r | Sacramento perch | <i>Archoplites interruptus</i> | - | CSC | SC | X | | | B |
| F | R | Longfin smelt | <i>Spirinchus thaleichthys</i> | - | CSC | - | X | | | B |
| F | R | Green sturgeon | <i>Acipenser medirostris</i> | - | CSC | - | X | | | B |
| I | m | Monarch butterfly (roost) | <i>Danaus plexippus</i> | - | CSC | - | X | | | B |
| P | m | Ahart's dwarf rush | <i>Juncus leiospermus var. ahartii</i> | - | - | 1B/SC | X | | | B |
| P | r | Alkali milkvetch | <i>Astragalus tener var. tener</i> | - | - | 1B/SC | X | | | A |
| P | m | Arburua Ranch jewelflower | <i>Streptanthus insignis ssp. lyonii</i> | - | - | 1B/SC | X | | | B |
| P | m | Ben Lomond buckwheat | <i>Eriogonum nudum var. decurrens</i> | - | - | 1B | X | | | B |
| P | m | Big tarplant | <i>Blepharizonia plumosa ssp. plumosa</i> | - | - | 1B | X | | | B |
| P | r | Bristly sedge | <i>Carex comosa</i> | - | - | 2 | X | | | B |
| P | m | Brittlescale | <i>Atriplex depressa</i> | - | - | 1B/SC | X | | | A |

| Type ¹ | Species Goals ² | Common Name | Scientific Name | Status ³ | | | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision ⁴ Criteria ⁵ |
|-------------------|----------------------------|----------------------------------|--|---------------------|-------|-------|-----------------|---------------------------|---------------------------------------|---|
| | | | | Federal | State | Other | | | | |
| P | m | California beaked-rush | <i>Rhynchospora californica</i> | - | - | 1B/SC | X | | A | |
| P | m | Congdon's lomatium | <i>Lomatium congdonii</i> | - | - | 1B/SC | X | | B | |
| P | m | Congdon's tarplant | <i>Hemizonia parryi ssp. congdonii</i> | - | - | 1B/SC | X | | A | |
| P | m | Contra Costa manzanita | <i>Arctostaphylos manzanita ssp. laevigata</i> | - | - | 1B | X | | B | |
| P | r | Delta mudwort | <i>Limosella subulata</i> | - | - | 2 | X | | A | |
| P | r | Delta tule pea | <i>Lathyrus jepsonii var. jepsonii</i> | - | - | 1B/SC | X | | A | |
| P | m | Diablo helianthella | <i>Helianthella castanea</i> | - | - | 1B/SC | X | | B | |
| P | m | Diamond-petaled California poppy | <i>Eschscholzia rhombipetala</i> | - | - | 1B/SC | X | | B | |
| P | m | Eel-grass pondweed | <i>Potamogeton zosteriformis</i> | - | - | 2 | X | | A | |
| P | m | Ferris' milkvetch | <i>Astragalus tener var. ferrisiae</i> | - | - | 1B/SC | X | | A | |
| P | m | Four-angled spikerush | <i>Eleocharis quadrangulata</i> | - | - | 2 | X | | A | |
| P | m | Heartscale | <i>Atriplex cordulata</i> | - | - | 1B/SC | X | | A | |
| P | m | Heckard's peppergrass | <i>Lepidium latipes var. heckardii</i> | - | - | 1B | X | | B | |
| P | m | Hispid bird's-beak | <i>Cordylanthus mollis ssp. hispidus</i> | - | - | 1B/SC | X | | A | |
| P | m | Hospital Canyon larkspur | <i>Delphinium californicum ssp. interius</i> | - | - | 1B/SC | X | | B | |
| P | m | Legenere | <i>Legenere limosa</i> | - | - | 1B/SC | X | | B | |
| P | m | Lesser saltscale | <i>Atriplex minuscula</i> | - | - | 1B/SC | X | | A | |
| P | m | Lost Hills crownscale | <i>Atriplex vallicola</i> | - | - | 1B/SC | X | | A | |
| P | m | Mad-dog skullcap | <i>Scutellaria lateriflora</i> | - | - | 2 | X | | A | |
| P | m | Mariposa clarkia | <i>Clarkia biloba ssp. australis</i> | - | - | 1B | X | | B | |
| P | m | Marsh checkerbloom | <i>Sidalcea oregana ssp. hydrophila</i> | - | - | 1B/SC | X | | A | |
| P | m | Merced phacelia | <i>Phacelia ciliata var. opaca</i> | - | - | 1B/SC | X | | B | |
| P | m | Mt. Diablo jewelflower | <i>Streptanthus hispidus</i> | - | - | 1B/SC | X | | B | |
| P | m | Mt. Diablo manzanita | <i>Arctostaphylos auriculata</i> | - | - | 1B | X | | B | |
| P | m | Mt. Hamilton coreopsis | <i>Coreopsis hamiltonii</i> | - | - | 1B/SC | X | | B | |
| P | m | Mt. Hamilton jewelflower | <i>Streptanthus callistus</i> | - | - | 1B/SC | X | | B | |

| Type ¹ | Species Goals ² | Common Name | Scientific Name | Potential Effects of CALFED Actions on Species ⁴ | | | | | | |
|--|----------------------------|--|--|--|-------|-------|-----------------|---------------------------|---------------------------------------|--------------------------------|
| | | | | Status ³ | | | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
| | | | | Federal | State | Other | | | | |
| P | m | Napa western flax | <i>Hesperolinon serpentinum</i> | - | - | 1B | X | | B | |
| P | r | Northern California black walnut (native stands) | <i>Juglans californica</i> var. <i>hindsii</i> | - | - | 1B/SC | X | | A | |
| P | m | Panoche peppergrass | <i>Lepidium jaredii</i> ssp. <i>album</i> | - | - | 1B/SC | X | | A | |
| P | m | Pincushion navarretia | <i>Navarretia myersii</i> | - | - | 1B | X | | B | |
| P | m | Point Reyes bird's-beak | <i>Cordylanthus maritimus</i> ssp. <i>palustris</i> | - | - | 1B/SC | X | | A | |
| P | m | Red Hills ragwort | <i>Senecio clevelandii</i> var. <i>heterophyllus</i> | - | - | 1B | X | | B | |
| P | m | Red-flowered lotus | <i>Lotus rubriflorus</i> | - | - | 1B/SC | X | | B | |
| P | m | Rose-mallow | <i>Hibiscus lasiocarpus</i> | - | - | 2 | X | | A | |
| P | m | San Joaquin spearscale | <i>Atriplex joaquiniana</i> | - | - | 1B/SC | X | | A | |
| P | m | Sanford's arrowhead | <i>Sagittaria sanfordii</i> | - | - | 1B/SC | X | | A | |
| P | m | Saw-toothed lewisia | <i>Lewisia serrata</i> | - | - | 1B/SC | X | | B | |
| P | m | Shaggyhair lupine | <i>Lupinus spectabilis</i> | - | - | 1B/SC | X | | B | |
| P | m | Sharsmith's harebell | <i>Campanula sharsmithiae</i> | - | - | 1B/SC | X | | B | |
| P | m | Showy madia | <i>Madia radiata</i> | - | - | 1B | X | | B | |
| P | m | Slough thistle | <i>Cirsium crassicaule</i> | - | - | 1B/SC | X | | A | |
| P | m | Spiny-sepaled button-celery | <i>Eryngium spinosepalum</i> | - | - | 1B/SC | X | | A | |
| P | R | Suisun Marsh aster | <i>Aster lentus</i> | - | - | 1B/SC | X | | A | |
| Other Species of Concern or CNPS List 3 | | | | | | | | | | |
| M | r | San Pablo California vole | <i>Microtus californicus sanpabloensis</i> | - | - | SC | X | | B | |
| B | m | Black-crowned night heron (rookery) | <i>Nycticorax nycticorax</i> | - | - | SC | X | | A | |
| B | m | Great blue heron (rookery) | <i>Ardea herodias</i> | - | - | SC | X | | A | |
| B | m | Great egret (rookery) | <i>Casmerodius albus</i> | - | SB | SC | X | | A | |
| B | m | Snowy egret (rookery) | <i>Egretta thula</i> | - | SB | SC | X | | A | |
| P | m | Henderson's bent grass | <i>Agrostis hendersonii</i> | - | - | 3/SC | X | | A | |
| P | m | Marin knotweed | <i>Polygonum marinense</i> | - | - | 3/SC | X | | A | |
| P | m | San Antonio Hills monardella | <i>Monardella antonina</i> ssp. <i>antonina</i> | - | - | 3 | X | | A | |

²Species Goals:

- R = Recovery. Recover species' populations within the ERP Ecological Zones to levels that ensure the species' long-term survival in nature.
- r = Contribute to recovery. Implement a portion of the actions deemed necessary to recover species' populations within the ERP Ecological Zones.
- m = Maintain. Ensure that any adverse effects on the species that could be associated with implementation of CALFED actions will be fully offset through implementation of actions beneficial to the species.

³Status:

Federal

- E = Listed as endangered under ESA
- T = Listed as threatened under ESA
- PE = Proposed for listing as endangered under ESA
- PT = Proposed for listing as threatened under ESA
- C = Candidate for listing under ESA
- PR = Protected under the Bald and Golden Eagle Protection Act

State

- CE = Listed as endangered under CESA
- CT = Listed as threatened under CESA
- CCE = Candidate for listing as endangered under CESA
- CCT = Candidate for listing as threatened under CESA
- R = Listed as rare under California Native Plant Protection Act
- CSC = California species of special concern
- FP = Fully protected under California Fish and Game Code
- SB = Specified birds under California Fish and Game Code

Other

- 1A = California Native Plant Society List 1A
- 1B = California Native Plant Society List 1B
- 2 = California Native Plant Society List 2
- 3 = California Native Plant Society List 3
- SC = Other species of concern identified by CALFED

⁴Potential Effects of CALFED Actions on Species:

May be Affected:

X = CALFED actions may result in take of federally or state-protected species, species are associated with habitat types or occur at specific locations that may be adversely or beneficially affected by CALFED depending on where CALFED actions would be implemented, or species that are rare or transient in the ERP Ecological Zones and may be affected by CALFED depending on when or where CALFED actions would be implemented.

Not Likely to be Affected:

- X1 = CALFED actions do not affect the species because habitat is not limiting and the species is mobile.
- X2 = Species occurs in areas that would not be affected by CALFED actions.

Not Enough Information on the Species:

X = Not enough information on the species' biology or distribution to make a determination on effects.

⁵Decision Criteria:

- A = Included because CALFED actions could affect a substantial portion of the species' range or important habitat.
- B = Included because of limited distribution or rarity of the species.
- L = Included because species is federally or state listed as endangered, threatened, rare, or fully protected.
- P = Included because of the potential to become federally or state listed.

SECTION II:

**SPECIES TO BE INCLUDED IN THE CALFED
CONSERVATION STRATEGY BY
CALFED REGION**

**Preliminary Draft List of Delta Region Species Currently Proposed
to Be Included in the Conservation Strategy
January 22, 1999**

Preliminary Criteria for Inclusion on this List

This is a list of special-status species in the Ecosystem Restoration Program Ecological Zones that are within the Delta Region. The Delta Region includes the Delta Zone. The list was developed using the criteria described below. Species shaded in gray and coded "NI" in the "Decision Criteria" column are those special-status species that do not meet the preliminary criteria for inclusion and would most likely not be addressed in the Conservation Strategy.

Special-Status Species

Special-status species are any species having some form of endangerment or concern status.

Special-status species are species that are:

- federally listed as threatened or endangered under Endangered Species Act (ESA),
- California listed as threatened or endangered under California Endangered Species Act (CESA),
- proposed for federal listing under the ESA,
- California candidates under the CESA,
- federal candidates under the ESA,
- California fully protected species or specified birds,
- California species of special concern (CSC),
- California Native Plant Society (CNPS) List 1A, List 1B, List 2, or List 3, or
- other species of concern to CALFED.

The list includes all special-status species known to occur or with the potential to occur in the Delta Region. The determination that a species has the potential to occur was based on the species' known range and the presence of suitable habitat in the Delta Region.

Species Addressed by the Conservation Strategy

Criteria for selection of species to potentially be covered in the Conservation Strategy are:

- the species is federally or California listed as rare, threatened, or endangered,
- the species is a California fully protected species, or
- the species could become federally or California listed as threatened or endangered during the term of CALFED implementation, and
- the species could be affected by CALFED actions.

Species considered to have the potential to become federally or California listed as threatened or endangered during the term of CALFED implementation are those that are:

- proposed for federal listing,
- California candidates,
- federal candidates,
- California species of special concern (each species considered individually for inclusion - see decision criteria),
- specified birds (each species considered individually for inclusion - see decision criteria),
- CNPS List 1 and List 2 (each species considered individually for inclusion - see decision criteria), or
- Other species of concern (each species considered individually for inclusion - see decision criteria).

CSC, specified birds, CNPS Lists 1-3, and other species of concern are included if CALFED actions could affect a substantial portion of the species range or important habitat or if the species is rare or its distribution is limited.

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Delta Region ⁴ | | | |
|---|--------------------------------|---|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
| Federally Listed as Endangered or Threatened | | | | | | | | | |
| P | Antioch Dunes evening-primrose | <i>Oenothera deltoides ssp. howellii</i> | E | CE | 1B | X | | | L |
| P | Colusa grass | <i>Neostapsia colusana</i> | T | CE | 1B | X | | | L |
| P | Contra Costa goldfields | <i>Lasthenia conjugens</i> | E | - | 1B | X | | | L |
| P | Contra Costa wallflower | <i>Erysimum capitatum ssp. angustatum</i> | E | CE | 1B | X | | | L |

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| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Delta Region ⁴ | | | Decision Criteria ⁵ |
|-------------------|--|---|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| | | | | | | | | | |
| P | Contra Costa wallflower critical habitat | <i>Erysimum capitatum ssp. angustatum critical habita</i> | | | | X | | | L |
| P | Crampton's tuctoria | <i>Tuctoria mucronata</i> | E | CE | 1B | X | | | L |
| P | Greene's tuctoria | <i>Tuctoria greenei</i> | E | R | 1B | X | | | L |
| P | Large-flowered fiddleneck | <i>Amsinckia grandiflora</i> | E | CE | 1B | X | | | L |
| P | Palmate-bracted bird's-beak | <i>Cordylanthus palmatus</i> | E | CE | 1B | X | | | L |
| P | Sacramento orcutt grass | <i>Orcuttia viscida</i> | E | CE | 1B | X | | | L |
| P | Slender orcutt grass | <i>Orcuttia tenuis</i> | T | CE | 1B | X | | | L |
| P | Soft bird's-beak | <i>Cordylanthus mollis ssp. mollis</i> | E | R | 1B | X | | | L |
| P | Succulent owl's-clover | <i>Castilleja campestris ssp. succulenta</i> | T | CE | 1B | X | | | L |
| P | Suisun thistle | <i>Cirsium hydrophilum var. hydrophilum</i> | E | - | 1B | X | | | L |
| I | Conservancy fairy shrimp | <i>Branchinecta conservatio</i> | E | - | - | X | | | L |
| I | Vernal pool fairy shrimp | <i>Branchinecta lynchi</i> | T | - | - | X | | | L |
| I | Vernal pool tadpole shrimp | <i>Lepidurus packardi</i> | E | - | - | X | | | L |
| I | Delta green ground beetle | <i>Elaphrus viridis</i> | T | - | - | X | | | L |
| I | Valley elderberry longhorn beetle | <i>Desmocerus californicus dimorphus</i> | T | - | - | X | | | L |
| I | Lange's metalmark | <i>Apodemia mormo langei</i> | E | - | - | X | | | L |
| F | Central Valley Steelhead Evolutionarily Significant Unit (ESU) | <i>Oncorhynchus mykiss (cv)</i> | T | - | - | X | | | L |
| F | Winter-run chinook salmon | <i>Oncorhynchus tshawytscha (wr)</i> | E | CE | - | X | | | L |
| F | Delta smelt | <i>Hypomesus transpacificus</i> | T | CT | - | X | | | L |
| A | California red-legged frog | <i>Rana aurora draytonii</i> | T | CSC | - | X | | | L |
| R | Giant garter snake | <i>Thamnophis gigas</i> | T | CT | - | X | | | L |
| B | Aleutian Canada goose | <i>Branta canadensis leucopareia</i> | T | - | - | | X1 | | L |
| B | Bald eagle | <i>Haliaeetus leucocephalus</i> | T/PR | CE/FP | - | X | | | L |
| B | American peregrine falcon | <i>Falco peregrinus anatum</i> | E | CE/FP | - | X | | | L |
| B | California clapper rail | <i>Rallus longirostris obsoletus</i> | E | CE/FP | - | X | | | L |
| B | California least tern | <i>Sterna antillarum browni</i> | E | CT/FP | - | X | | | L |
| M | Salt marsh harvest mouse | <i>Reithrodontomys raviventris</i> | E | CE/FP | - | X | | | L |
| M | San Joaquin kit fox | <i>Vulpes macrotis mutica</i> | E | CT | - | X | | | L |

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| Type 1 | Common Name 2 | Scientific Name | Status 3 | | | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria 5 |
|--|--|--|----------|-----------------|-------|-----------------|---------------------------|---------------------------------------|---------------------|
| | | | Federal | State | Other | | | | |
| California Listed as Endangered, Threatened, Rare, or Fully Protected | | | | | | | | | |
| P | Boggs Lake hedge-hyssop | <i>Gratiola heterosepala</i> | - | CE ¹ | 1B | X | | | L |
| P | Delta coyote-thistle | <i>Eryngium racemosum</i> | - | CE | 1B/SC | X | | | L |
| P | Mason's lilacopsis | <i>Lilaeopsis masonii</i> | - | R | 1B/SC | X | | | L |
| B | Swainson's hawk | <i>Buteo swainsoni</i> | - | CT | SC | X | | | L |
| B | White-tailed kite | <i>Elanus leucurus</i> | - | FP | - | X | | | L |
| B | California black rail | <i>Laterallus jamaicensis coturniculus</i> | - | CT/FP | SC | X | | | L |
| B | Greater sandhill crane | <i>Grus canadensis tabida</i> | - | CT/FP | - | X | | | L |
| B | Western yellow-billed cuckoo | <i>Coccyzus americanus occidentalis</i> | - | CE | - | X | | | L |
| B | Little willow flycatcher | <i>Empidonax traillii brewsteri</i> | - | CE | SC | X | | | L |
| M | Riparian brush rabbit | <i>Sylvilagus bachmani riparius</i> | PE | CE | - | X | | | L |
| Federally Proposed | | | | | | | | | |
| F | Central Valley fall-run chinook salmon | <i>Oncorhynchus tshawytscha (fr)</i> | PT | CSC | - | X | | | P |
| F | Central Valley spring-run chinook salmon | <i>Oncorhynchus tshawytscha (sr)</i> | PE | CCT | - | X | | | P |
| F | Sacramento splittail | <i>Pogonichthys macrolepidotus</i> | PT | CSC | - | X | | | P |
| M | San Joaquin Valley woodrat | <i>Neotoma fuscipes riparia</i> | PE | CSC | - | X | | | P |
| Federal Candidate | | | | | | | | | |
| B | Mountain plover | <i>Charadrius montanus</i> | C | CSC | - | X | | | P |
| California Species of Special Concern, or CNPS List 1 or 2 | | | | | | | | | |
| P | Alkali milkvetch | <i>Astragalus tener var. tener</i> | - | - | 1B/SC | X | | | B |
| P | Bristly sedge | <i>Carex comosa</i> | - | - | 2 | X | | | B |
| P | Brittlescale | <i>Atriplex depressa</i> | - | - | 1B/SC | X | | | A |
| P | Delta mudwort | <i>Limosella subulata</i> | - | - | 2 | X | | | B |
| P | Delta tule pea | <i>Lathyrus jepsonii var. jepsonii</i> | - | - | 1B/SC | X | | | A |
| P | Eel-grass pondweed | <i>Potamogeton zosteriformis</i> | - | - | 2 | X | | | A |
| P | Heartscale | <i>Atriplex cordulata</i> | - | - | 1B/SC | X | | | A |
| P | Heckard's peppergrass | <i>Lepidium latipes var. heckardii</i> | - | - | 1B | X | | | B |
| P | Hispid bird's-beak | <i>Cordylanthus mollis ssp. hispidus</i> | - | - | 1B/SC | X | | | B |
| P | Hospital Canyon larkspur | <i>Delphinium californicum ssp. interius</i> | - | - | 1B/SC | X | | | B |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Delta Region ⁴ | | | Decision Criteria ⁵ |
|--|--|--|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| | | | | | | | | | |
| P | Mad-dog skullcap | <i>Scutellaria lateriflora</i> | - | - | 2 | X | | | B |
| P | Northern California black walnut (native stands) | <i>Juglans californica</i> var. <i>hindsii</i> | - | - | 1B/SC | X | | | B |
| P | Pincushion navarretia | <i>Navarretia myersii</i> | - | - | 1B | X | | | B |
| P | Rose-mallow | <i>Hibiscus lasiocarpus</i> | - | - | 2 | X | | | A |
| P | San Joaquin spearscale | <i>Atriplex joaquiniana</i> | - | - | 1B/SC | X | | | A |
| P | Sanford's arrowhead | <i>Sagittaria sanfordii</i> | - | - | 1B/SC | | | | A |
| P | Showy madia | <i>Madia radiata</i> | - | - | 1B | X | | | B |
| P | Slough thistle | <i>Cirsium crassicaule</i> | - | - | 1B/SC | X | | | B |
| P | Suisun Marsh aster | <i>Aster lentus</i> | - | - | 1B/SC | X | | | A |
| F | Green sturgeon | <i>Acipenser medirostris</i> | - | CSC | - | X | | | A |
| F | Longfin smelt | <i>Spirinchus thaleichthys</i> | - | CSC | - | X | | | A |
| F | Sacramento perch | <i>Archoplites interruptus</i> | - | CSC | SC | X | | | B |
| A | Western spadefoot | <i>Scaphiopus hammondi</i> | - | CSC | SC | X | | | A |
| R | Western pond turtle | <i>Clemmys marmorata</i> | - | CSC | SC | X | | | A |
| B | Double-crested cormorant (rookery) | <i>Phalacrocorax auritus</i> | - | CSC | - | X | | | A |
| B | Western least bittern | <i>Ixobrychus axilis</i> | - | CSC | SC | X | | | A |
| B | White-faced ibis | <i>Plegadis chihi</i> | - | CSC | SC | X | | | A |
| B | Northern harrier | <i>Circus cyaneus</i> | - | CSC | - | | | | A |
| B | Black tern | <i>Chlidonias niger</i> | - | CSC | SC | X | | | A |
| B | California gull | <i>Larus californicus</i> | - | CSC | - | X | | | A |
| B | Short-eared owl | <i>Asio flammeus</i> | - | CSC | - | X | | | A |
| B | Western burrowing owl | <i>Athene cunicularia hypugea</i> | - | CSC | SC | X | | | A |
| B | California yellow warbler | <i>Dendroica petechia brewsteri</i> | - | CSC | - | X | | | A |
| B | Saltmarsh common yellowthroat | <i>Geothlypis trichas sinuosa</i> | - | CSC | SC | X | | | A |
| B | Suisun song sparrow | <i>Melospiza melodia maxillaris</i> | - | CSC | SC | X | | | B |
| B | Tricolored blackbird | <i>Agelaius tricolor</i> | - | CSC | SC | X | | | A |
| M | Suisun ornate shrew | <i>Sorex ornatus sinuosus</i> | - | CSC | SC | X | | | B |
| Other Species of Concern or CNPS List 3 | | | | | | | | | |
| B | Black-crowned night heron (rookery) | <i>Nycticorax nycticorax</i> | - | - | SC | X | | | A |
| B | Great blue heron (rookery) | <i>Ardea herodias</i> | - | - | SC | X | | | A |

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| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Delta Region ⁴ | | | Decision Criteria ⁵ |
|-------------------|--------------------------|--------------------------|---------------------|-------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| B | Great egret (rookery) | <i>Casmerodius albus</i> | - | SB | SC | X | | | A |
| B | Snowy egret (rookery) | <i>Egretta thula</i> | - | SB | SC | X | | | A |

| Type ¹ | Common Name ² | Scientific Name | Potential Effects on Species in the Delta Region ⁴ | | | | Decision Criteria ⁵ | | |
|-------------------|--------------------------|-----------------|--|-------|-------|--------------------|-----------------------------------|---------------------------------|---|
| | | | Status ³ | | | May Be Affected | | Not Likely to be Affected | Not Enough Information on the Species |
| | | | Federal | State | Other | | | | |

Notes:

¹ Type: P = plant, I = invertebrate, F = fish, A = amphibian, R = reptile, B = bird, M = mammal

² Common Name: (R) = Species for which recovery is a CALFED objective.

³ Status:**Federal**

- E = Listed as endangered under ESA
- T = Listed as threatened under ESA
- PE = Proposed for listing as endangered under ESA
- PT = Proposed for listing as threatened under ESA
- C = Candidate for listing under ESA
- PR = Protected under the Bald and Golden Eagle Protection Act

State:

- CE = Listed as endangered under CESA
- CT = Listed as threatened under CESA
- CCE = Candidate for listing as endangered under CESA
- CCT = Candidate for listing as threatened under CESA
- R = Listed as rare under California Native Plant Protection Act
- CSC = California species of special concern
- FP = Fully protected under California Fish and Game Code
- SB = Specified birds under California Fish and Game Code

Other:

- 1A = California Native Plant Society List 1A
- 1B = California Native Plant Society List 1B
- 2 = California Native Plant Society List 2
- 3 = California Native Plant Society List 3
- SC = Other species of concern identified by CALFED

⁴ Potential Effects:**May be Affected:**

X = CALFED actions may result in take of federally or state protected species, species are associated with habitat types or occur at specific locations that may be adversely or beneficially affected by CALFED depending on where CALFED actions would be implemented, or species that are rare or transient in the Delta Region and may be affected by CALFED depending on when or where CALFED actions would be implemented.

Not Likely to be Affected:

- X1 = CALFED actions do not affect the species because habitat is not limiting and the species is mobile.
- X2 = Species occurs in areas that would not be affected by CALFED actions.

Not Enough Information on the Species:

X = Not enough information on the species' biology or distribution to make a determination on effects.

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Delta Region ⁴ | | | Decision Criteria ⁵ |
|-------------------|--------------------------|-----------------|---------------------|-------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| | | | | | | | | | |

⁵ Decision Criteria:

- A = Included because CALFED actions could affect a substantial portion of the species' range or important habitat.
- B = Included because of limited distribution or rarity of the species.
- L = Included because species is federally or state listed as endangered, threatened, rare, or fully protected.
- P = Included because of the potential to become federally or state listed.

**Preliminary Draft List of Bay Region Species Currently Proposed
to Be Included in the Conservation Strategy**
January 22, 1999

D-053636

Preliminary Criteria for Inclusion on this List

This is a list of special-status species in the Ecosystem Restoration Program Ecological Zones that are within the Bay Region. The Bay Region includes the Suisun Marsh/North San Francisco Bay Ecological Zone. The list was developed using the criteria described below. Species shaded in gray and coded "NP" in the "Decision Criteria" column are those special-status species that do not meet the preliminary criteria for inclusion and would most likely not be addressed in the Conservation Strategy.

- the species is federally or California listed as rare, threatened, or endangered,
- the species is a California fully protected species, or
- the species could become federally or California listed as threatened or endangered during the term of CALFED implementation, and
- the species could be affected by CALFED actions.

Special-Status Species

Special-status species are any species having some form of endangerment or concern status.

Special-status species are species that are:

- federally listed as threatened or endangered under Endangered Species Act (ESA),
- California listed as threatened or endangered under California Endangered Species Act (CESA),
- proposed for federal listing under the ESA,
- California candidates under the CESA,
- federal candidates under the ESA,
- California fully protected species or specified birds,
- California species of special concern (CSC),
- California Native Plant Society (CNPS) List 1A, List 1B, List 2, or List 3, or
- other species of concern to CALFED.

Species considered to have the potential to become federally or California listed as threatened or endangered during the term of CALFED implementation are those that are:

- proposed for federal listing,
- California candidates,
- federal candidates,
- California species of special concern (each species considered individually for inclusion - see decision criteria),
- specified birds (each species considered individually for inclusion - see decision criteria),
- CNPS List 1 and List 2 (each species considered individually for inclusion - see decision criteria), or
- Other species of concern (each species considered individually for inclusion - see decision criteria).

CSC, specified birds, CNPS Lists 1-3, and other species of concern are included if CALFED actions could affect a substantial portion of the species range or important habitat or if the species is rare or its distribution is limited.

The list includes all special-status species known to occur or with the potential to occur in the Bay Region. The determination that a species has the potential to occur was based on the species' known range and the presence of suitable habitat in the Bay Region.

Species Addressed by the Conservation Strategy

Criteria for selection of species to potentially be covered in the Conservation Strategy are:

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| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Bay Region ⁴ | | | Decision Criteria ⁵ |
|---|--------------------------------|---|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| Federally Listed as Endangered or Threatened | | | | | | | | | |
| P | Antioch Dunes evening-primrose | <i>Oenothera deltooides ssp. howellii</i> | E | CE | 1B | X | | | L |
| P | California seablite | <i>Suaeda californica</i> | E | - | 1B | X | | | L |
| P | Calistoga popcornflower | <i>Plagiobothrys strictus</i> | E | CT | 1B | | X2 | | L |
| P | Clara Hunt's milkvetch | <i>Astragalus clarianus</i> | E | CT | 1B | | X2 | | L |

| Type ¹ | Common Name ² | Scientific Name | Potential Effects on Species in the Bay Region ⁴ | | | | | | |
|-------------------|------------------------------|--|--|-------|-------|--------------------|---------------------------------|---|-----------------------------------|
| | | | Status ³ | | | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
| | | | Federal | Staté | Other | | | | |
| P | Colusa grass | <i>Neostapfia colusana</i> | T | CE | 1B | X | | L | |
| P | Contra Costa goldfields | <i>Lasthenia conjugens</i> | E | - | 1B | X | | L | |
| P | Contra Costa wallflower | <i>Erysimum capitatum ssp. angustatum</i> | E | CE | 1B | X | | L | |
| P | Crampton's tuctoria | <i>Tuctoria mucronata</i> | E | CE | 1B | | X2 | L | |
| P | Few-flowered navarretia | <i>Navarretia leucocephala ssp. pauciflora</i> | E | CT | 1B | | X2 | L | |
| P | Kenwood Marsh checkerbloom | <i>Sidalcea oregana ssp. valida</i> | E | CE | 1B | X | | L | |
| P | Large-flowered fiddleneck | <i>Amsinckia grandiflora</i> | E | CE | 1B | | X2 | L | |
| P | Loch Lomond button-celery | <i>Eryngium constancei</i> | E | CE | 1B | | X2 | L | |
| P | Many-flowered navarretia | <i>Navarretia leucocephala ssp. pliantha</i> | E | CT | 1B | | X2 | L | |
| P | Marin western flax | <i>Hesperolinon congestum</i> | T | CT | 1B | | X2 | L | |
| P | Napa blue grass | <i>Poa napensis</i> | E | CE | 1B | | X2 | L | |
| P | Pallid manzanita | <i>Arctostaphylos pallida</i> | T | CE | 1B | | X2 | L | |
| P | Pitkin Marsh lily | <i>Lilium pardalinum ssp. pitkinense</i> | E | CE | 1B | X | | L | |
| P | Sebastopol meadowfoam | <i>Limnanthes vinculans</i> | E | CE | 1B | | X2 | L | |
| P | Showy Indian clover | <i>Trifolium amoenum</i> | E | - | 1B | | X2 | L | |
| P | Soft bird's-beak | <i>Cordylanthus mollis ssp. mollis</i> | E | R | 1B | X | | L | |
| P | Sonoma alopecurus | <i>Alopecurus aequalis var. sonomensis</i> | E | - | 1B | X | | L | |
| P | Sonoma spineflower | <i>Chorizanthe valida</i> | E | CE | 1B | | X2 | L | |
| P | Sonoma sunshine | <i>Blennosperma bakeri</i> | E | CE | 1B | | X2 | L | |
| P | Suisun thistle | <i>Cirsium hydrophilum var. hydrophilum</i> | E | - | 1B | X | | L | |
| P | Tiburon Indian paintbrush | <i>Castilleja affinis ssp. neglecta</i> | E | CT | 1B | | X2 | L | |
| P | Tiburon jewelflower | <i>Streptanthus niger</i> | E | CE | 1B | | X2 | L | |
| P | Tiburon Mariposa lily | <i>Calochortus tiburonensis</i> | T | CT | 1B | | X2 | L | |
| P | White sedge | <i>Carex albida</i> | E | CE | 1B | X | | L | |
| P | White-rayed pentachaeta | <i>Pentachaeta bellidiflora</i> | E | CE | 1B | | X2 | L | |
| I | Conservancy fairy shrimp | <i>Branchinecta conservatio</i> | E | - | - | X | | L | |
| I | Vernal pool fairy shrimp | <i>Branchinecta lynchi</i> | T | - | - | X | | L | |
| I | Vernal pool tadpole shrimp | <i>Lepidurus packardi</i> | E | - | - | X | | L | |
| I | California freshwater shrimp | <i>Syncaris pacifica</i> | E | - | - | X | | L | |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Bay Region ⁴ | | | Decision Criteria ⁵ |
|-------------------|--|--|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| | | | | | | | | | |
| I | Delta green ground beetle | <i>Elaphrus viridis</i> | T | - | - | X | | | L |
| I | Valley elderberry longhorn beetle | <i>Desmocerus californicus dimorphus</i> | T | - | - | X | | | L |
| I | Callippe silverspot | <i>Speyeria callippe callippe</i> | E | - | - | X | | | L |
| I | Lange's metalmark | <i>Apodemia mormo langei</i> | E | - | - | X | | | L |
| F | Tidewater goby | <i>Eucyclogobius newberryi</i> | E | CSC | - | | | X | L |
| F | Central Coast Steelhead Evolutionary Significant Unit (ESU) | <i>Oncorhynchus mykiss</i> | T | - | - | X | | | L |
| F | Central Valley Steelhead Evolutionarily Significant Unit (ESU) | <i>Oncorhynchus mykiss (cv)</i> | T | - | - | | X2 | | L |
| F | Winter-run chinook salmon | <i>Oncorhynchus tshawytscha (wr)</i> | E | CE | - | | X | | L |
| F | Delta smelt | <i>Hypomesus transpacificus</i> | T | CT | - | X | | | L |
| A | California red-legged frog | <i>Rana aurora draytonii</i> | T | CSC | - | X | | | L |
| R | Giant garter snake | <i>Thamnophis gigas</i> | T | CT | - | X | | | L |
| B | California brown pelican | <i>Pelecanus occidentalis californicus</i> | E | CE/FP | - | | X1 | | L |
| B | Aleutian Canada goose | <i>Branta canadensis leucopareia</i> | T | - | - | | X1 | | L |
| B | Bald eagle | <i>Haliaeetus leucocephalus</i> | T/PR | CE/FP | - | X | | | L |
| B | American peregrine falcon | <i>Falco peregrinus anatum</i> | E | CE/FP | - | X | | | L |
| B | California clapper rail | <i>Rallus longirostris obsoletus</i> | E | CE/FP | - | X | | | L |
| B | California least tern | <i>Sterna antillarum browni</i> | E | CT/FP | - | X | | | L |
| B | Western snowy plover | <i>Charadrius alexandrinus nivosus</i> | T | - | - | X | | | L |
| M | Salt marsh harvest mouse | <i>Reithrodontomys raviventris</i> | E | CE/FP | - | X | | | L |

California Listed as Endangered, Threatened, Rare, or Fully Protected

| | | | | | | | | |
|---|-----------------------------|--|---|----|----|-------|---|----|
| P | Baker's larkspur | <i>Delphinium bakeri</i> | L | PE | R | 1B | | X2 |
| P | Baker's manzanita | <i>Arctostaphylos bakeri ssp. bakeri</i> | L | - | R | 1B/SC | | X2 |
| P | Boggs Lake hedge-hyssop | <i>Gratiola heterosepala</i> | L | - | CE | 1B | X | |
| P | Marin checkerbloom | <i>Sidalcea hickmanii ssp. viridis</i> | L | - | R | 1B/SC | | X2 |
| P | Mason's ceanothus | <i>Ceanothus masonii</i> | L | - | R | 1B/SC | | X2 |
| P | Mason's lilaeopsis | <i>Lilaeopsis masonii</i> | L | - | R | 1B/SC | X | |
| P | Mt. Diablo bird's-beak | <i>Cordylanthus nidularius</i> | L | - | R | 1B/SC | | X2 |
| P | North Coast semaphore grass | <i>Pleuropogon hooverianus</i> | L | - | R | 1B/SC | | X2 |

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| Type ¹ | Common Name ² | Scientific Name | | Status ³ | | | Potential Effects on Species in the Bay Region ⁴ | | | Decision Criteria ⁵ |
|---|--|--|---|---------------------|--------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| | | | | | | | | | | |
| P | Rock sanicle | <i>Sanicula saxatilis</i> | L | - | R | 1B/SC | | X2 | | |
| P | Santa Cruz tarplant | <i>Holocarpha macradenia</i> | L | PT | CE | 1B | | X2 | | |
| P | Yellow larkspur | <i>Delphinium luteum</i> | L | PE | R | 1B | | X2 | | |
| B | Golden eagle | <i>Aquila chrysaetos</i> | L | PR | CSC/FP | - | | X1 | | |
| B | Swainson's hawk | <i>Buteo swainsoni</i> | L | - | CT | SC | X | | | |
| B | White-tailed kite | <i>Elanus leucurus</i> | L | - | FP | - | X | | | |
| B | California black rail | <i>Laterallus jamaicensis coturniculus</i> | L | - | CT/FP | SC | X | | | |
| B | Little willow flycatcher | <i>Empidonax traillii brewsteri</i> | L | - | CE | SC | | X1 | | |
| M | Ringtail | <i>Bassariscus astutus</i> | L | - | FP | - | X | | | |
| Federally Proposed | | | | | | | | | | |
| F | Central Valley spring-run chinook salmon | <i>Oncorhynchus tshawytscha (sr)</i> | | PE | CCT | - | X | | | P |
| F | Sacramento splittail | <i>Pogonichthys macrolepidotus</i> | | PT | CSC | - | X | | | P |
| Federal Candidate | | | | | | | | | | |
| A | California tiger salamander | <i>Ambystoma californiense</i> | P | C | CSC | - | X | | | |
| B | Mountain plover | <i>Charadrius montanus</i> | P | C | CSC | - | | X1 | | |
| California Species of Special Concern, or CNPS List 1 or 2 | | | | | | | | | | |
| P | Delta mudwort | <i>Limosella subulata</i> | | - | - | 2 | X | | | A |
| P | Delta tule pea | <i>Lathyrus jepsonii var. jepsonii</i> | | - | - | 1B/SC | X | | | A |
| P | Marsh checkerbloom | <i>Sidalcea oregana ssp. hydrophila</i> | | - | - | 1B/SC | X | | | A |
| P | Northern California black walnut (native stands) | <i>Juglans californica var. hindsii</i> | | - | - | 1B/SC | X | | | A |
| P | Point Reyes bird's-beak | <i>Cordylanthus maritimus ssp. palustris</i> | | - | - | 1B/SC | X | | | A |
| P | Sanford's arrowhead | <i>Sagittaria sanfordii</i> | | - | - | 1B/SC | X | | | A |
| P | Suisun Marsh aster | <i>Aster lentus</i> | | - | - | 1B/SC | X | | | A |
| I | Monarch butterfly (roost) | <i>Danaus plexippus</i> | | - | CSC | - | X | | | B |
| F | Green sturgeon | <i>Acipenser medirostris</i> | | - | CSC | - | X | | | B |
| F | Longfin smelt | <i>Spirinchus thaleichthys</i> | | - | CSC | - | X | | | B |
| F | Hardhead | <i>Mylopharodon conocephalus</i> | | - | CSC | - | X | | | B |
| A | Western spadefoot | <i>Scaphiopus hammondii</i> | | - | CSC | SC | X | | | A |
| A | Foothill yellow-legged frog | <i>Rana boylei</i> | | - | CSC | SC | | X2 | | A |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Bay Region ⁴ | | | Decision Criteria ⁵ |
|--|-------------------------------|--|---------------------|-------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| | | | | | | | | | |
| R | Western pond turtle | <i>Clemmys marmorata</i> | - | CSC | SC | X | | | A |
| R | San Joaquin whipsnake | <i>Masticophis flagellum ruddocki</i> | - | CSC | SC | X | | | B |
| B | White-faced ibis | <i>Plegadis chihi</i> | - | CSC | SC | X | | | A |
| B | Northern harrier | <i>Circus cyaneus</i> | - | CSC | - | X | | | A |
| B | Long-billed curlew | <i>Numenius americanus</i> | - | CSC | - | X | | | A |
| B | California gull | <i>Larus californicus</i> | - | CSC | - | X | | | B |
| B | Long-eared owl | <i>Asio otus</i> | - | CSC | - | X | | | B |
| B | Short-eared owl | <i>Asio flammeus</i> | - | CSC | - | X | | | B |
| B | Western burrowing owl | <i>Athene cunicularia hypugea</i> | - | CSC | SC | X | | | A |
| B | Alameda song sparrow | <i>Melospiza melodia pusillula</i> | - | CSC | SC | X | | | A |
| B | Grasshopper sparrow | <i>Ammodramus savannarum</i> | - | CSC | - | X | | | B |
| B | Saltmarsh common yellowthroat | <i>Geothlypis trichas sinuosa</i> | - | CSC | SC | X | | | A |
| B | San Pablo song sparrow | <i>Melospiza melodia samuelis</i> | - | CSC | SC | X | | | A |
| B | Suisun song sparrow | <i>Melospiza melodia maxillaris</i> | - | CSC | SC | X | | | A |
| B | Tricolored blackbird | <i>Agelaius tricolor</i> | - | CSC | SC | X | | | A |
| M | Suisun ornate shrew | <i>Sorex ornatus sinuosus</i> | - | CSC | SC | X | | | B |
| Other Species of Concern or CNPS List 3 | | | | | | | | | |
| P | Marin knotweed | <i>Polygonum marinense</i> | - | - | 3/SC | X | | | A |
| B | Great blue heron (rookery) | <i>Ardea herodias</i> | - | - | SC | X | | | A |
| B | Great egret (rookery) | <i>Casmerodius albus</i> | - | SB | SC | X | | | A |
| B | Snowy egret (rookery) | <i>Egretta thula</i> | - | SB | SC | X | | | A |
| M | San Pablo California vole | <i>Microtus californicus sanpabloensis</i> | - | - | SC | X | | | B |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Bay Region ⁴ | | | |
|-------------------|--------------------------|-----------------|---------------------|-------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |

Notes:

¹ Type: P = plant, I = invertebrate, F = fish, A = amphibian, R = reptile, B = bird, M = mammal

² Common Name: (R) = Species for which recovery is a CALFED objective.

³ Status:**Federal**

- E = Listed as endangered under ESA
- T = Listed as threatened under ESA
- PE = Proposed for listing as endangered under ESA
- PT = Proposed for listing as threatened under ESA
- C = Candidate for listing under ESA
- PR = Protected under the Bald and Golden Eagle Protection Act

State:

- CE = Listed as endangered under CESA
- CT = Listed as threatened under CESA
- CCE = Candidate for listing as endangered under CESA
- CCT = Candidate for listing as threatened under CESA
- R = Listed as rare under California Native Plant Protection Act
- CSC = California species of special concern
- FP = Fully protected under California Fish and Game Code
- SB = Specified birds under California Fish and Game Code

Other:

- 1A = California Native Plant Society List 1A
- 1B = California Native Plant Society List 1B
- 2 = California Native Plant Society List 2
- 3 = California Native Plant Society List 3
- SC = Other species of concern identified by CALFED

⁴ Potential Effects:**May be Affected:**

X = CALFED actions may result in take of federally or state protected species, species are associated with habitat types or occur at specific locations that may be adversely or beneficially affected by CALFED depending on where CALFED actions would be implemented, or species that are rare or transient in the Bay Region and may be affected by CALFED depending on when or where CALFED actions would be implemented.

Not Likely to be Affected:

- X1 = CALFED actions do not affect the species because habitat is not limiting and the species is mobile.
- X2 = Species occurs in areas that would not be affected by CALFED actions.

Not Enough Information on the Species:

X = Not enough information on the species' biology or distribution to make a determination on effects.

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Bay Region ⁴ | | | |
|-------------------|--------------------------|-----------------|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |

⁵ Decision Criteria:

- A = Included because CALFED actions could affect a substantial portion of the species' range or important habitat.
- B = Included because of limited distribution or rarity of the species.
- L = Included because species is federally or state listed as endangered, threatened, rare, or fully protected.
- P = Included because of the potential to become federally or state listed.

D-053642

**Preliminary Draft List of Sacramento River Region Species Currently Proposed
to Be Included in the Conservation Strategy**
January 22, 1999

Preliminary Criteria for Inclusion on this List

This is a list of special-status species in the Ecosystem Restoration Program Ecological Zones that are within the Sacramento River Region. The Sacramento Region includes the North Sacramento Valley, Cottonwood Creek, Colusa Basin, Butte Basin, Sacramento River, Feather River/Sutter Basin, American River Basin, and Yolo Basin Ecological Zones. The list was developed using the criteria described below. Species shaded in gray and coded "NT" in the "Decision Criteria" column are those special-status species that do not meet the preliminary criteria for inclusion and would most likely not be addressed in the Conservation Strategy.

Special-Status Species

Special-status species are any species having some form of endangerment or concern status.

Special-status species are species that are:

- federally listed as threatened or endangered under Endangered Species Act (ESA),
- California listed as threatened or endangered under California Endangered Species Act (CESA),
- proposed for federal listing under ESA,
- California candidates under the CESA,
- federal candidates under the ESA,
- California fully protected species or specified birds,
- California species of special concern (CSC),
- California Native Plant Society (CNPS) List 1A, List 1B, List 2, or List 3, or
- other species of concern to CALFED.

The list includes all special-status species known to occur or with the potential to occur in the Sacramento River Region. The determination that a species has the potential to occur was based on the species' known range and the presence of suitable habitat in the Sacramento River Region.

Species Addressed by the Conservation Strategy

Criteria for selection of species to potentially be covered in the Conservation Strategy are:

- the species is federally or California listed as rare, threatened, or endangered,
- the species is a California fully protected species, or
- the species could become federally or California listed as threatened or endangered during the term of CALFED implementation, and
- the species could be affected by CALFED actions.

Species considered to have the potential to become federally or California listed as threatened or endangered during the term of CALFED implementation are those that are:

- proposed for federal listing,
- California candidates,
- federal candidates,
- California species of special concern (each species considered individually for inclusion - see decision criteria),
- specified birds (each species considered individually for inclusion - see decision criteria),
- CNPS List 1 and List 2 (each species considered individually for inclusion - see decision criteria), or
- Other species of concern (each species considered individually for inclusion - see decision criteria).

CSC, specified birds, CNPS Lists 1-3, and other species of concern are included if CALFED actions could affect a substantial portion of the species' range or if the species is rare or its distribution is limited.

D-053643

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Sacramento River Region ⁴ | | | Decision Criteria ⁵ |
|---|--------------------------|---|---------------------|-------|-------|--|---------------------------|---------------------------------------|--------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| Federally Listed as Endangered or Threatened | | | | | | | | | |
| P | Butte County meadowfoam | <i>Limnanthes floccosa ssp. californica</i> | E | CE | 1B | | X2 | | L |
| P | Colusa grass | <i>Neostapfia colusana</i> | T | CE | 1B | X | | | L |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Sacramento River Region ⁴ | | | Decision Criteria ⁵ |
|-------------------|--|--|---------------------|-------|-------|---|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| P | Contra Costa goldfields | <i>Lasthenia conjugens</i> | E | - | 1B | X | | | L |
| P | Crampton's tuctoria | <i>Tuctoria mucronata</i> | E | CE | 1B | X | | | L |
| P | El Dorado bedstraw | <i>Galium californicum ssp. sierrae</i> | E | R | 1B | | X2 | | L |
| P | Greene's tuctoria | <i>Tuctoria greenei</i> | E | R | 1B | X | | | L |
| P | Hairy orcutt grass | <i>Orcuttia pilosa</i> | E | CE | 1B | X | | | L |
| P | Hartweg's golden sunburst | <i>Pseudobahia bahiifolia</i> | E | CE | 1B | | X2 | | L |
| P | Hoover's spurge | <i>Chamaesyce hooveri</i> | T | - | 1B | X | | | L |
| P | Layne's ragwort | <i>Senecio layneae</i> | T | R | 1B | | X2 | | L |
| P | Palmate-bracted bird's-beak | <i>Cordylanthus palmatus</i> | E | CE | 1B | X | | | L |
| P | Pine Hill ceanothus | <i>Ceanothus roderickii</i> | E | R | 1B | | X2 | | L |
| P | Pine Hill flannelbush | <i>Fremontodendron decumbens</i> | E | R | 1B | | X2 | | L |
| P | Sacramento orcutt grass | <i>Orcuttia viscida</i> | E | CE | 1B | X | | | L |
| P | Showy Indian clover | <i>Trifolium amoenum</i> | E | - | 1B | | X2 | | L |
| P | Slender orcutt grass | <i>Orcuttia tenuis</i> | T | CE | 1B | X | | | L |
| P | Soft bird's-beak | <i>Cordylanthus mollis ssp. mollis</i> | E | R | 1B | X | | | L |
| P | Succulent owl's-clover | <i>Castilleja campestris ssp. succulenta</i> | T | CE | 1B | | | | L |
| I | Conservancy fairy shrimp | <i>Branchinecta conservatio</i> | E | - | - | X | | | L |
| I | Vernal pool fairy shrimp | <i>Branchinecta lynchi</i> | T | - | - | X | | | L |
| I | Vernal pool tadpole shrimp | <i>Lepidurus packardi</i> | E | - | - | X | | | L |
| I | California freshwater shrimp | <i>Syncaris pacifica</i> | E | - | - | X | | | L |
| I | Delta green ground beetle | <i>Elaphrus viridis</i> | T | - | - | X | | | L |
| I | Valley elderberry longhorn beetle | <i>Desmocerus californicus dimorphus</i> | T | - | - | X | | | L |
| F | Central Valley Steelhead Evolutionarily Significant Unit (ESU) | <i>Oncorhynchus mykiss (cv)</i> | T | - | - | X | | | L |
| F | Winter-run chinook salmon | <i>Oncorhynchus tshawytscha (wr)</i> | E | CE | - | X | | | L |
| F | Delta smelt | <i>Hypomesus transpacificus</i> | T | CT | - | X | | | L |
| A | California red-legged frog | <i>Rana aurora draytonii</i> | T | CSC | - | X | | | L |
| R | Giant garter snake | <i>Thamnophis gigas</i> | T | CT | - | X | | | L |
| B | Aleutian Canada goose | <i>Branta canadensis leucopareia</i> | T | - | - | X | | | L |
| B | Bald eagle | <i>Haliaeetus leucocephalus</i> | T/PR | CE/FP | - | X | | | L |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Sacramento River Region ⁴ | | | Decision Criteria ⁵ |
|--|--|--|---------------------|--------|-------|---|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| B | American peregrine falcon | <i>Falco peregrinus anatum</i> | E | CE/FP | - | X | | | L |
| B | California clapper rail | <i>Rallus longirostris obsoletus</i> | E | CE/FP | - | X | | | L |
| B | Western snowy plover | <i>Charadrius alexandrinus nivosus</i> | T | - | - | X | | | L |
| B | Northern spotted owl | <i>Strix occidentalis caurina</i> | T | CSC | - | | X2 | | L |
| M | Salt marsh harvest mouse | <i>Reithrodontomys raviventris</i> | E | CE/FP | - | X | | | L |
| California Listed as Endangered, Threatened, Rare, or Fully Protected | | | | | | | | | |
| P | Boggs Lake hedge-hyssop | <i>Gratiola heterosepala</i> | - | CE | 1B | X | | | L |
| P | Indian Valley brodiaea | <i>Brodiaea coronaria ssp. rosea</i> | - | CE | 1B | | X2 | | L |
| P | Mason's lilacopsis | <i>Lilaeopsis masonii</i> | - | R | 1B/SC | X | | | L |
| B | Golden eagle | <i>Aquila chrysaetos</i> | PR | CSC/FP | - | | X1 | | L |
| B | Swainson's hawk | <i>Buteo swainsoni</i> | - | CT | SC | X | | | L |
| B | White-tailed kite | <i>Elanus leucurus</i> | - | FP | - | X | | | L |
| B | California black rail | <i>Laterallus jamaicensis coturniculus</i> | - | CT/FP | SC | X | | | L |
| B | Greater sandhill crane | <i>Grus canadensis tabida</i> | - | CT/FP | - | X | | | L |
| B | Western yellow-billed cuckoo | <i>Coccyzus americanus occidentalis</i> | - | CE | - | X | | | L |
| B | Bank swallow | <i>Riparia riparia</i> | - | CT | - | X | | | L |
| B | Little willow flycatcher | <i>Empidonax traillii brewsteri</i> | - | CE | SC | X | | | L |
| M | Ringtail | <i>Bassariscus astutus</i> | - | FP | - | X | | | L |
| Federally Proposed | | | | | | | | | |
| F | Central Valley spring-run chinook salmon | <i>Oncorhynchus tshawytscha (sr)</i> | PE | CCT | - | X | | | P |
| F | Sacramento splittail | <i>Pogonichthys macrolepidotus</i> | PT | CSC | - | X | | | P |
| Federal Candidate | | | | | | | | | |
| A | California tiger salamander | <i>Ambystoma californiense</i> | C | CSC | - | X | | | P |
| B | Mountain plover | <i>Charadrius montanus</i> | C | CSC | - | | X1 | | P |
| California Species of Special Concern, or CNPS List 1 or 2 | | | | | | | | | |
| P | California beaked-rush | <i>Rhynchospora californica</i> | - | - | 1B/SC | X | | | A |
| P | Delta mudwort | <i>Limosella subulata</i> | - | - | 2 | X | | | A |
| P | Delta tule pea | <i>Lathyrus jepsonii var. jepsonii</i> | - | - | 1B/SC | X | | | A |
| P | Four-angled spikerush | <i>Eleocharis quadrangulata</i> | - | - | 2 | X | | | A |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Sacramento River Region ⁴ | | | |
|--|--|--|---------------------|--------|-------|---|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
| P | Hispid bird's-beak | <i>Cordylanthus mollis ssp. hispidus</i> | - | - | 1B/SC | X | | | A |
| P | Northern California black walnut (native stands) | <i>Juglans californica var. hindsii</i> | - | - | 1B/SC | X | | | A |
| P | Rose-mallow | <i>Hibiscus lasiocarpus</i> | - | - | 2 | X | | | A |
| P | Sanford's arrowhead | <i>Sagittaria sanfordii</i> | - | - | 1B/SC | X | | | A |
| P | Suisun Marsh aster | <i>Aster lentus</i> | - | - | 1B/SC | X | | | A |
| F | Green sturgeon | <i>Acipenser medirostris</i> | - | CSC | - | X | | | B |
| F | Hardhead | <i>Mylopharodon conocephalus</i> | - | CSC | - | X | | | B |
| A | Western spadefoot | <i>Scaphiopus hammondii</i> | - | CSC | SC | X | | | A |
| A | Foothill yellow-legged frog | <i>Rana boylei</i> | - | CSC | SC | X | | | A |
| R | Western pond turtle | <i>Clemmys marmorata</i> | - | CSC | SC | X | | | A |
| R | San Joaquin whipsnake | <i>Masticophis flagellum ruddocki</i> | - | CSC | SC | X | | | B |
| B | Double-crested cormorant (rookery) | <i>Phalacrocorax auritus</i> | - | CSC | - | X | | | A |
| B | White-faced ibis | <i>Plegadis chihi</i> | - | CSC | SC | X | | | A |
| B | Cooper's hawk | <i>Accipiter cooperii</i> | - | CSC | - | X | | | A |
| B | Northern harrier | <i>Circus cyaneus</i> | - | CSC | - | X | | | A |
| B | Osprey | <i>Pandion haliaetus</i> | - | CSC/SB | - | X | | | A |
| B | Long-billed curlew | <i>Numenius americanus</i> | - | CSC | - | X | | | A |
| B | Black tern | <i>Chlidonias niger</i> | - | CSC | SC | X | | | B |
| B | California gull | <i>Larus californicus</i> | - | CSC | - | X | | | B |
| B | Long-eared owl | <i>Asio otus</i> | - | CSC | - | X | | | B |
| B | Short-eared owl | <i>Asio flammeus</i> | - | CSC | - | X | | | B |
| B | Western burrowing owl | <i>Athene cunicularia hypugea</i> | - | CSC | SC | X | | | A |
| B | California yellow warbler | <i>Dendroica petechia brewsteri</i> | - | CSC | - | X | | | A |
| B | Grasshopper sparrow | <i>Ammodramus savannarum</i> | - | CSC | - | X | | | B |
| B | Tricolored blackbird | <i>Agelaius tricolor</i> | - | CSC | SC | X | | | A |
| B | Yellow-breasted chat | <i>Icteria virens</i> | - | CSC | - | X | | | A |
| M | Suisun ornate shrew | <i>Sorex ornatus sinuosus</i> | - | CSC | SC | X | | | B |
| Other Species of Concern or CNPS List 3 | | | | | | | | | |
| B | Black-crowned night heron (rookery) | <i>Nycticorax nycticorax</i> | - | - | SC | X | | | A |
| B | Great blue heron (rookery) | <i>Ardea herodias</i> | - | - | SC | X | | | A |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Sacramento River Region ⁴ | | | |
|-------------------|--------------------------|--------------------------|---------------------|-------|-------|---|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
| B | Great egret (rookery) | <i>Casmerodius albus</i> | - | SB | SC | X | | | A |
| B | Snowy egret (rookery) | <i>Egretta thula</i> | - | SB | SC | X | | | A |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Sacramento River Region ⁴ | | | |
|-------------------|--------------------------|-----------------|---------------------|-------|-------|---|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |

Notes:

¹ Type: P = plant, I = invertebrate, F = fish, A = amphibian, R = reptile, B = bird, M = mammal

² Common Name: (R) = Species for which recovery is a CALFED objective.

³ Status:**Federal**

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- FP = Fully protected under California Fish and Game Code
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Other:

- 1A = California Native Plant Society List 1A
- 1B = California Native Plant Society List 1B
- 2 = California Native Plant Society List 2
- 3 = California Native Plant Society List 3
- SC = Other species of concern identified by CALFED

⁴ Potential Effects:**May be Affected:**

X = CALFED actions may result in take of federally or state protected species, species are associated with habitat types or occur at specific locations that may be adversely or beneficially affected by CALFED depending on where CALFED actions would be implemented, or species that are rare or transient in the Sacramento River Region and may be affected by CALFED depending on when or where CALFED actions would be implemented.

Not Likely to be Affected:

- X1 = CALFED actions do not affect the species because habitat is not limiting and the species is mobile.
- X2 = Species occurs in areas that would not be affected by CALFED actions.

Not Enough Information on the Species:

X = Not enough information on the species' biology or distribution to make a determination on effects.

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the Sacramento River Region ⁴ | | | |
|-------------------|--------------------------|-----------------|---------------------|-------|-------|---|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |

⁵ Decision Criteria:

- A = Included because CALFED actions could affect a substantial portion of the species' range or important habitat.
- B = Included because of limited distribution or rarity of the species.
- L = Included because species is federally or state listed as endangered, threatened, rare, or fully protected.
- P = Included because of the potential to become federally or state listed.

D-053649

**Preliminary Draft List of San Joaquin River Region Species Currently Proposed
to Be Included in the Conservation Strategy
January 22, 1999**

Preliminary Criteria for Inclusion on this List

This is a list of special-status species in the Ecosystem Restoration Program Ecological Zones that are within the San Joaquin River Region. The San Joaquin River Region includes the Eastside Delta Tributaries, San Joaquin River, East San Joaquin Basin, and West San Joaquin Basin Ecological Zones. The list was developed using the criteria described below. Species shaded in gray and coded "NP" in the "Decision Criteria" column are those special-status species that do not meet the preliminary criteria for inclusion and would most likely not be addressed in the Conservation Strategy.

Special-Status Species

Special-status species are any species having some form of endangerment or concern status.

Special-status species are species that are:

- federally listed as threatened or endangered under Endangered Species Act (ESA),
- California listed as threatened or endangered under California Endangered Species Act (CESA),
- proposed for federal listing under the ESA,
- California candidates under the CESA,
- federal candidates under the ESA,
- California fully protected species or specified birds,
- California species of special concern (CSC),
- California Native Plant Society (CNPS) List 1A, List 1B, List 2, or List 3, or
- other species of concern to CALFED.

The list includes all special-status species known to occur or with the potential to occur in the San Joaquin River Region. The determination that a species has the potential to occur was based on the species' known range and the presence of suitable habitat in the San Joaquin River Region.

Species Addressed by the Conservation Strategy

Criteria for selection of species to potentially be covered in the Conservation Strategy are:

- the species is federally or California listed as rare, threatened, or endangered,
- the species is a California fully protected species, or
- the species could become federally or California listed as threatened or endangered during the term of CALFED implementation, and
- the species could be affected by CALFED actions.

Species considered to have the potential to become federally or California listed as threatened or endangered during the term of CALFED implementation are those that are:

- proposed for federal listing,
- California candidates,
- federal candidates,
- California species of special concern (each species considered individually for inclusion - see decision criteria),
- specified birds (each species considered individually for inclusion - see decision criteria),
- CNPS List 1 and List 2 (each species considered individually for inclusion - see decision criteria), or
- Other species of concern (each species considered individually for inclusion - see decision criteria).

CSC, specified birds, CNPS Lists 1-3, and other species of concern are included if CALFED actions could affect a substantial portion of the species' range or important habitat or if the species is rare or its distribution is limited.

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the San Joaquin River Region ⁴ | | | Decision Criteria ⁵ |
|---|--------------------------|----------------------------|---------------------|-------|-------|---|---------------------------|---------------------------------------|--------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| Federally Listed as Endangered or Threatened | | | | | | | | | |
| P | California vervain | <i>Verbena californica</i> | T | CT | 1B | | X2 | | L |
| P | Chinese Camp brodiaea | <i>Brodiaea pallida</i> | T | CE | 1B | X | | | L |

D-053650
D-053650

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the San Joaquin River Region ⁴ | | | Decision Criteria ⁵ |
|-------------------|-----------------------------------|--|---------------------|-------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| P | Colusa grass | <i>Neostapfia colusana</i> | T | CE | 1B | X | | | L |
| P | Contra Costa goldfields | <i>Lasthenia conjugens</i> | E | - | 1B | X | | | L |
| P | El Dorado bedstraw | <i>Galium californicum ssp. sierrae</i> | E | R | 1B | | X2 | | L |
| P | Greene's tuctoria | <i>Tuctoria greenei</i> | E | R | 1B | X | | | L |
| P | Hairy orcutt grass | <i>Orcuttia pilosa</i> | E | CE | 1B | X | | | L |
| P | Hartweg's golden sunburst | <i>Pseudobahia bahiifolia</i> | E | CE | 1B | X | | | L |
| P | Hoover's eriastrum | <i>Eriastrum hooveri</i> | T | - | - | X | | | L |
| P | Hoover's spurge | <i>Chamaesyce hooveri</i> | T | - | 1B | X | | | L |
| P | Large-flowered fiddleneck | <i>Amsinckia grandiflora</i> | E | CE | 1B | X | | | L |
| P | Layne's ragwort | <i>Senecio layneae</i> | T | R | 1B | X | | | L |
| P | Palmate-bracted bird's-beak | <i>Cordylanthus palmatus</i> | E | CE | 1B | X | | | L |
| P | Pine Hill ceanothus | <i>Ceanothus roderickii</i> | E | R | 1B | | X2 | | L |
| P | Pine Hill flannelbush | <i>Fremontodendron decumbens</i> | E | R | 1B | | X2 | | L |
| P | Rawhide Hill onion | <i>Allium tuolumnense</i> | T | - | 1B | X | | | P |
| P | Sacramento orcutt grass | <i>Orcuttia viscida</i> | E | CE | 1B | X | | | L |
| P | San Benito evening-primrose | <i>Camissonia benitensis</i> | T | - | 1B | | X2 | | L |
| P | San Joaquin adobe sunburst | <i>Pseudobahia peirsonii</i> | T | CE | 1B | | X2 | | L |
| P | San Joaquin Valley orcutt grass | <i>Orcuttia inaequalis</i> | T | CE | 1B | X | | | L |
| P | San Joaquin woollythreads | <i>Lembertia congdonii</i> | E | - | 1B | X | | | L |
| P | Showy Indian clover | <i>Trifolium amoenum</i> | E | - | 1B | X | | | L |
| P | Slender orcutt grass | <i>Orcuttia tenuis</i> | T | CE | 1B | X | | | L |
| P | Stebbins' morning-glory | <i>Calystegia stebbinsii</i> | E | CE | 1B | | X2 | | L |
| P | Succulent owl's-clover | <i>Castilleja campestris ssp. succulenta</i> | T | CE | 1B | X | | | L |
| I | Conservancy fairy shrimp | <i>Branchinecta conservatio</i> | E | - | - | X | | | L |
| I | Longhorn fairy shrimp | <i>Branchinecta longiantenna</i> | E | - | - | | X | | L |
| I | Vernal pool fairy shrimp | <i>Branchinecta lynchi</i> | T | - | - | X | | | L |
| I | Vernal pool tadpole shrimp | <i>Lepidurus packardi</i> | E | - | - | X | | | L |
| I | Valley elderberry longhorn beetle | <i>Desmocerus californicus dimorphus</i> | T | - | - | X | | | L |

| Type ¹ | Common Name ² | Scientific Name | Potential Effects on Species in the San Joaquin River Region ⁴ | | | | | | | |
|--|--|--|--|---------------------|-------|--|--------------------|---------------------------------|---|-----------------------------------|
| | | | Federal | Status ³ | | | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |
| | | | | State | Other | | | | | |
| F | Central Valley Steelhead Evolutionarily Significant Unit (ESU) | <i>Oncorhynchus mykiss (cv)</i> | T | - | - | | X | | L | |
| A | Limestone salamander | <i>Hydromantes brunus</i> | T | - | - | | | X2 | L | |
| A | California red-legged frog | <i>Rana aurora draytonii</i> | T | CSC | - | | X | | L | |
| R | Blunt-nosed leopard lizard | <i>Gambelia silus</i> | E | CE/FP | - | | X | | L | |
| R | Alameda whipsnake | <i>Masticophis lateralis euryxanthus</i> | T | CT | - | | X | | L | |
| R | Giant garter snake | <i>Thamnophis gigas</i> | T | CT | - | | X | | L | |
| B | Aleutian Canada goose | <i>Branta canadensis leucopareia</i> | T | - | - | | X | | L | |
| B | California condor | <i>Gymnogyps californianus</i> | E | CE/FP | - | | | X1 | L | |
| B | Bald eagle | <i>Haliaeetus leucocephalus</i> | T/PR | CE/FP | - | | X | | L | |
| B | American peregrine falcon | <i>Falco peregrinus anatum</i> | E | CE/FP | - | | X | | L | |
| B | Least Bell's vireo | <i>Vireo bellii pusillus</i> | E | E | - | | X | | L | |
| M | Giant kangaroo rat | <i>Dipodomys ingens</i> | E | CE | - | | | X2 | L | |
| M | San Joaquin kit fox | <i>Vulpes macrotis mutica</i> | E | CT | - | | X | | L | |
| California Listed as Endangered, Threatened, Rare, or Fully Protected | | | | | | | | | | |
| P | Boggs Lake hedge-hyssop | <i>Gratiola heterosepala</i> | - | CE | 1B | | X | | L | |
| P | Delta coyote-thistle | <i>Eryngium racemosum</i> | - | CE | 1B/SC | | X | | L | |
| P | Ione buckwheat | <i>Eriogonum apricum var. apricum</i> | PE | CE | 1B | | | X2 | P | |
| P | Irish Hill buckwheat | <i>Eriogonum apricum var. prostratum</i> | PE | CE | 1B | | | X2 | L | |
| P | Mason's lilaeopsis | <i>Lilaeopsis masonii</i> | - | R | 1B/SC | | X | | L | |
| P | Mt. Diablo bird's-beak | <i>Cordylanthus nidularius</i> | - | R | 1B/SC | | | X2 | L | |
| P | Rock sanicle | <i>Sanicula saxatilis</i> | - | R | 1B/SC | | X | | L | |
| B | Golden eagle | <i>Aquila chrysaetos</i> | PR | CSC/FP | - | | | X1 | L | |
| B | Swainson's hawk | <i>Buteo swainsoni</i> | - | CT | SC | | X | | L | |
| B | White-tailed kite | <i>Elanus leucurus</i> | - | FP | - | | X | | L | |
| B | California black rail | <i>Laterallus jamaicensis coturniculus</i> | - | CT/FP | SC | | X | | L | |
| B | Greater sandhill crane | <i>Grus canadensis tabida</i> | - | CT/FP | - | | X | | L | |
| B | Western yellow-billed cuckoo | <i>Coccyzus americanus occidentalis</i> | - | CE | - | | X | | L | |
| B | Bank swallow | <i>Riparia riparia</i> | - | CT | - | | X | | L | |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the San Joaquin River Region ⁴ | | | Decision Criteria ⁵ |
|---|-----------------------------------|--|---------------------|--------------------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State ¹ | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| B | Little willow flycatcher | <i>Empidonax trailii brewsteri</i> | - | CE | SC | X | | | L |
| M | Riparian brush rabbit | <i>Sylvilagus bachmani riparius</i> | PE | CE | - | X | | | L |
| M | Nelson's antelope ground squirrel | <i>Ammospermophilus nelsoni</i> | - | CT | SC | X | | | L |
| M | Ringtail | <i>Bassariscus astutus</i> | - | FP | - | X | | | L |
| Federally Proposed | | | | | | | | | |
| P | Ione manzanita | <i>Arctostaphylos myrtifolia</i> | PT | - | 1B | | | X2 | P |
| F | Sacramento splittail | <i>Pogonichthys macrolepidotus</i> | PT | CSC | - | X | | | P |
| M | San Joaquin Valley woodrat | <i>Neotoma fuscipes riparia</i> | PE | CSC | - | X | | | P |
| Federal Candidate | | | | | | | | | |
| A | California tiger salamander | <i>Ambystoma californiense</i> | C | CSC | - | X | | | P |
| B | Mountain plover | <i>Charadrius montanus</i> | C | CSC | - | | | X1 | P |
| California Species of Special Concern, or CNPS List 1 or 2 | | | | | | | | | |
| P | Ahart's dwarf rush | <i>Juncus leiospermus var. ahartii</i> | - | - | 1B/SC | X | | | B |
| P | Alkali milkvetch | <i>Astragalus tener var. tener</i> | - | - | 1B/SC | X | | | A |
| P | Arburua Ranch jewelflower | <i>Streptanthus insignis ssp. lyonii</i> | - | - | 1B/SC | X | | | B |
| P | Ben Lomond buckwheat | <i>Eriogonum nudum var. decurrens</i> | - | - | 1B | X | | | B |
| P | Big tarplant | <i>Blepharizonia plumosa ssp. plumosa</i> | - | - | 1B | X | | | B |
| P | Brittlescale | <i>Atriplex depressa</i> | - | - | 1B/SC | X | | | A |
| P | Congdon's lomatium | <i>Lomatium congdonii</i> | - | - | 1B/SC | X | | | B |
| P | Congdon's tarplant | <i>Hemizonia parryi ssp. congdonii</i> | - | - | 1B/SC | X | | | A |
| P | Contra Costa manzanita | <i>Arctostaphylos manzanita ssp. laevigata</i> | - | - | 1B | X | | | B |
| P | Delta mudwort | <i>Limosella subulata</i> | - | - | 2 | X | | | A |
| P | Delta tule pea | <i>Lathyrus jepsonii var. jepsonii</i> | - | - | 1B/SC | X | | | A |
| P | Diablo helianthella | <i>Helianthella castanea</i> | - | - | 1B/SC | X | | | B |
| P | Diamond-petaled California poppy | <i>Eschscholzia rhombipetala</i> | - | - | 1B/SC | X | | | B |
| P | Ferris' milkvetch | <i>Astragalus tener var. ferrisiae</i> | - | - | 1B/SC | X | | | A |
| P | Four-angled spikerush | <i>Eleocharis quadrangulata</i> | - | - | 2 | X | | | A |
| P | Hispid bird's-beak | <i>Cordylanthus mollis ssp. hispidus</i> | - | - | 1B/SC | X | | | A |
| P | Legenere | <i>Legenere limosa</i> | - | - | 1B/SC | X | | | B |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the San Joaquin River Region ⁴ | | | Decision Criteria ⁵ |
|-------------------|-----------------------------|---|---------------------|--------------------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State ¹ | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| P | Lesser saltscale | <i>Atriplex minuscula</i> | - | - | 1B/SC | X | | | A |
| P | Lost Hills crownscale | <i>Atriplex vallicola</i> | - | - | 1B/SC | X | | | A |
| P | Mad-dog skullcap | <i>Scutellaria lateriflora</i> | - | - | 2 | X | | | A |
| P | Mariposa clarkia | <i>Clarkia biloba ssp. australis</i> | - | - | 1B | X | | | B |
| P | Merced phacelia | <i>Phacelia ciliata var. opaca</i> | - | - | 1B/SC | X | | | B |
| P | Mt. Diablo jewelflower | <i>Streptanthus hispidus</i> | - | - | 1B/SC | X | | | B |
| P | Mt. Diablo manzanita | <i>Arctostaphylos auriculata</i> | - | - | 1B | X | | | B |
| P | Mt. Hamilton coreopsis | <i>Coreopsis hamiltonii</i> | - | - | 1B/SC | X | | | B |
| P | Mt. Hamilton jewelflower | <i>Streptanthus callistus</i> | - | - | 1B/SC | X | | | B |
| P | Napa western flax | <i>Hesperolinon serpentinum</i> | - | - | 1B | X | | | B |
| P | Panoche peppergrass | <i>Lepidium jaredii ssp. album</i> | - | - | 1B/SC | X | | | A |
| P | Pincushion navarretia | <i>Navarretia myersii</i> | - | - | 1B | X | | | B |
| P | Red Hills ragwort | <i>Senecio clevelandii var. heterophyllus</i> | - | - | 1B | X | | | B |
| P | Red-flowered lotus | <i>Lotus rubriflorus</i> | - | - | 1B/SC | X | | | B |
| P | Rose-mallow | <i>Hibiscus lasiocarpus</i> | - | - | 2 | X | | | A |
| P | San Joaquin spearscale | <i>Atriplex joaquiniana</i> | - | - | 1B/SC | X | | | A |
| P | Sanford's arrowhead | <i>Sagittaria sanfordii</i> | - | - | 1B/SC | X | | | A |
| P | Saw-toothed lewisia | <i>Lewisia serrata</i> | - | - | 1B/SC | X | | | B |
| P | Shaggyhair lupine | <i>Lupinus spectabilis</i> | - | - | 1B/SC | X | | | B |
| P | Sharsmith's harebell | <i>Campanula sharsmithiae</i> | - | - | 1B/SC | X | | | B |
| P | Slough thistle | <i>Cirsium crassicaule</i> | - | - | 1B/SC | X | | | A |
| P | Spiny-sepaled button-celery | <i>Eryngium spinosepalum</i> | - | - | 1B/SC | X | | | A |
| P | Suisun Marsh aster | <i>Aster lentus</i> | - | - | 1B/SC | X | | | A |
| P | Veiny monardella | <i>Monardella douglasii ssp. venosa</i> | - | - | 1B/SC | X | | | B |
| F | Hardhead | <i>Mylopharodon conocephalus</i> | - | CSC | - | X | | | B |
| A | Western spadefoot | <i>Scaphiopus hammondii</i> | - | CSC | SC | X | | | A |
| A | Foothill yellow-legged frog | <i>Rana boylei</i> | - | CSC | SC | X | | | A |
| R | Western pond turtle | <i>Clemmys marmorata</i> | - | CSC | SC | X | | | A |
| R | San Joaquin whipsnake | <i>Masticophis flagellum ruddocki</i> | - | CSC | SC | X | | | B |
| B | White-faced ibis | <i>Plegadis chihi</i> | - | CSC | SC | X | | | A |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the San Joaquin River Region ⁴ | | | Decision Criteria ⁵ |
|--|-------------------------------------|--|---------------------|--------------------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State ¹ | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | |
| B | Cooper's hawk | <i>Accipiter cooperii</i> | - | CSC | - | X | | | A |
| B | Northern harrier | <i>Circus cyaneus</i> | - | CSC | - | X | | | A |
| B | Osprey | <i>Pandion haliaetus</i> | - | CSC/SB | - | | X1 | | A |
| B | Long-billed curlew | <i>Numenius americanus</i> | - | CSC | - | X | | | A |
| B | Black tern | <i>Chlidonias niger</i> | - | CSC | SC | X | | | B |
| B | California gull | <i>Larus californicus</i> | - | CSC | - | X | | | B |
| B | Long-eared owl | <i>Asio otus</i> | - | CSC | - | X | | | B |
| B | Short-eared owl | <i>Asio flammeus</i> | - | CSC | - | X | | | B |
| B | Western burrowing owl | <i>Athene cunicularia hypugea</i> | - | CSC | SC | X | | | A |
| B | California yellow warbler | <i>Dendroica petechia brewsteri</i> | - | CSC | - | X | | | A |
| B | Grasshopper sparrow | <i>Anmodramus savannarum</i> | - | CSC | - | X | | | B |
| B | Tricolored blackbird | <i>Agelaius tricolor</i> | - | CSC | SC | X | | | A |
| B | Yellow-breasted chat | <i>Icteria virens</i> | - | CSC | - | X | | | A |
| Other Species of Concern or CNPS List 3 | | | | | | | | | |
| P | Henderson's bent grass | <i>Agrostis hendersonii</i> | - | - | 3/SC | X | | | A |
| P | San Antonio Hills monardella | <i>Monardella antonina ssp. antonina</i> | - | - | 3 | X | | | A |
| B | Black-crowned night heron (rookery) | <i>Nycticorax nycticorax</i> | - | - | SC | X | | | A |
| B | Great blue heron (rookery) | <i>Ardea herodias</i> | - | - | SC | X | | | A |
| B | Great egret (rookery) | <i>Casmerodius albus</i> | - | SB | SC | X | | | A |
| B | Snowy egret (rookery) | <i>Egretta thula</i> | - | SB | SC | X | | | A |

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the San Joaquin River Region ⁴ | | | |
|-------------------|--------------------------|-----------------|---------------------|-------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |

Notes:

¹ Type: P = plant, I = invertebrate, F = fish, A = amphibian, R = reptile, B = bird, M = mammal

² Common Name: (R) = Species for which recovery is a CALFED objective.

³ Status:**Federal**

- E = Listed as endangered under ESA
- T = Listed as threatened under ESA
- PE = Proposed for listing as endangered under ESA
- PT = Proposed for listing as threatened under ESA
- C = Candidate for listing under ESA
- PR = Protected under the Bald and Golden Eagle Protection Act

State:

- CE = Listed as endangered under CESA
- CT = Listed as threatened under CESA
- CCE = Candidate for listing as endangered under CESA
- CCT = Candidate for listing as threatened under CESA
- R = Listed as rare under California Native Plant Protection Act
- CSC = California species of special concern
- FP = Fully protected under California Fish and Game Code
- SB = Specified birds under California Fish and Game Code

Other:

- 1A = California Native Plant Society List 1A
- 1B = California Native Plant Society List 1B
- 2 = California Native Plant Society List 2
- 3 = California Native Plant Society List 3
- SC = Other species of concern identified by CALFED

⁴ Potential Effects:**May be Affected:**

X = CALFED actions may result in take of federally or state protected species, species are associated with habitat types or occur at specific locations that may be adversely or beneficially affected by CALFED depending on where CALFED actions would be implemented, or species that are rare or transient in the San Joaquin River Region and may be affected by CALFED depending on when or where CALFED actions would be implemented.

Not Likely to be Affected:

- X1 = CALFED actions do not affect the species because habitat is not limiting and the species is mobile.
- X2 = Species occurs in areas that would not be affected by CALFED actions.

Not Enough Information on the Species:

X = Not enough information on the species' biology or distribution to make a determination on effects.

| Type ¹ | Common Name ² | Scientific Name | Status ³ | | | Potential Effects on Species in the San Joaquin River Region ⁴ | | | |
|-------------------|--------------------------|-----------------|---------------------|-------|-------|--|---------------------------------|---|-----------------------------------|
| | | | Federal | State | Other | May Be Affected | Not Likely to be Affected | Not Enough Information on the Species | Decision Criteria ⁵ |

⁵ Decision Criteria:

- A = Included because CALFED actions could affect a substantial portion of the species' range or important habitat.
- B = Included because of limited distribution or rarity of the species.
- L = Included because species is federally or state listed as endangered, threatened, rare, or fully protected.
- P = Included because of the potential to become federally or state listed.

SECTION III:
SPECIES WITH PROPOSED "R" AND "r" GOALS
BY NCCP HABITAT TYPE

Proposed "R" and "r" Evaluation Species Associated with NCCP Habitat Types

| Evaluation Species | NCCP Habitat Type ¹ | | | | | | | | | | | | | | | | | |
|------------------------------|--------------------------------|--------|---|---------|----|---------|---------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|---------|----|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M WF | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | MS W | UC | SF A |
| Mammals | | | | | | | | | | | | | | | | | | |
| Salt marsh harvest mouse | | | | | | | | | | | | X | | | | | | |
| Riparian brush rabbit | X | | | | | | | | | | | | | | | | | |
| San Pablo California vole | | | | | | | | | | | | X | | | | X | | |
| San Joaquin Valley woodrat | X | | | | | | | | | | | | | | | | | |
| Suisun ornate shrew | | | | | | | | | | | | X | | | | | | |
| Birds | | | | | | | | | | | | | | | | | | |
| Least Bell's vireo | X | X | | | | | | | | | | | | | | | | |
| California clapper rail | | | | | | | | | | | | X | | | | | | |
| Little willow flycatcher | X | X | | | | | | | | | | | | | | | | |
| Bank swallow | X | | | | | | | | X | | | | | | | | | |
| Western yellow-billed cuckoo | X | | | | | | | | | | | | | | | | | |
| Greater sandhill crane | | | X | | | | | | | | | | | X | X | X | X | X |
| California black rail | | | | | | | | | | | | X | X | X | | | | |
| Swainson's hawk | X | | X | | X | X | | | | | | | | | X | X | X | X |

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TFE = Tidal freshwater emergent
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| Evaluation Species | NCCP Habitat Type ¹ | | | | | | | | | | | | | | | | | | |
|--|--------------------------------|--------|---|---------|----|---------|---------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|---------|----|---------|--|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M WF | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | MS W | UC | SF A | |
| Alameda song sparrow | | | | | | | | | | | | X | | | | | | | |
| California yellow warbler | X | X | | | | | | | | | | | | | | | | | |
| Saltmarsh common yellowthroat | | | | | | | | | | | | X | | | | | | | |
| San Pablo song sparrow | | | | | | | | | | | | X | | | | | | | |
| Suisun song sparrow | | | | | | | | | | | | X | X | | | | | | |
| Western least bittern | | | | | | | | | | | | | | X | | | | | |
| Reptiles | | | | | | | | | | | | | | | | | | | |
| Giant garter snake | | | | | | | | | | | | | X | X | X | X | | X | |
| Fish | | | | | | | | | | | | | | | | | | | |
| Central Valley steelhead Evolutionarily Significant Unit (ESU) | | | | | | | | X | X | X | | X | X | | | | | | |
| Delta smelt | | | | | | | | X | | | | X | X | | | | | | |
| Winter-run chinook salmon | | | | | | | | X | X | X | | X | X | | | | | | |
| Sacramento splittail | | | | | | | | X | X | | | X | X | | | | | | |
| Central Valley fall-run chinook | | | | | | | | X | X | X | | X | X | | | | | | |
| Central Valley spring-run chinook salmon | | | | | | | | X | X | X | | X | X | | | | | | |

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| Evaluation Species | NCCP Habitat Type ¹ | | | | | | | | | | | | | | | | | |
|-----------------------------------|--------------------------------|--------|---|-----|----|---------|---------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|---------|----|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | IDS | US | VF W | M WF | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | MS W | UC | SF A |
| Hardhead | | | | | | | | | X | X | | | | | | | | |
| Sacramento perch | | | | | | | | X | X | | X | X | X | | | | | |
| Longfin smelt | | | | | | | | X | | | | X | X | | | | | |
| Green sturgeon | | | | | | | | X | X | | | | X | | | | | |
| Invertebrates | | | | | | | | | | | | | | | | | | |
| Valley elderberry longhorn beetle | X | X | | | | | | | | | | | | | | | | |
| Delta green ground beetle | | | | | | | | | | | | | | | X | | | |
| Plants | | | | | | | | | | | | | | | | | | |
| Crampton's tuctoria | | | | | | | | | | | | | | | X | | | |
| Soft bird's-beak | | | | | | | | | | | | X | | | | | | |
| Suisun thistle | | | | | | | | | | | | X | | | | | | |
| Delta coyote-thistle | X | | | | | | | | | | | | | | | | | |
| Mason's lilaeopsis | | | | | | | | | | | | X | X | | | | | |
| Alkali milkvetch | | | | | | | | | | | | | | | X | | | |
| Bristly sedge | | | | | | | | | | | | | | X | | | | |
| Delta mudwort | | | | | | | | | | | | X | X | | | | | |
| Delta tule pea | | | | | | | | | | | | X | X | | | | | |

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 SFA = Seasonally flooded agriculture

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| Evaluation Species | NCCP Habitat Type ¹ | | | | | | | | | | | | | | | | | |
|---|--------------------------------|--------|---|---------|----|---------|------------------|---------|---------|---------|-----------------------------------|----|---------|----------|---------|---------|----|---------|
| | Riparian and Upland Habitats | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M WF | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | MS W | UC | SF A |
| Northern California black walnut (native stands) | X | | | | | | | | | | | | | | | | | |
| Suisun Marsh aster | | | | | | | | | | | | X | X | | | | | |

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SECTION IV:
**SPECIES WITH PROPOSED “m” GOALS BY
NCCP HABITAT TYPE**

Evaluation Species Associated with NCCP Habitats with Proposed "m" Species Goals

| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | |
|-----------------------------------|------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A |
| Mammals | | | | | | | | | | | | | | | | | | |
| San Joaquin kit fox | | | X | | | | | | | | | | | | | | X | |
| Giant kangaroo rat | | | X | | | | | | | | | | | | | | | |
| Ringtail | X | X | | | X | X | X | | | | | | | | | | | |
| Nelson's antelope ground squirrel | | | X | | | | | | | | | | | | | | | |
| Greater western mastiff-bat | X | X | X | | X | X | X | | | | | | | | | | | |
| Birds | | | | | | | | | | | | | | | | | | |
| Northern spotted owl | | | | | | | X | | | | | | | | | | | |
| California least tern | | | | | | | | X | | | | | | | | | | |
| Western snowy plover | | | | | | | | X | | | | | | | X | | | |
| American peregrine falcon | | | | | | | | X | | | X | X | X | X | X | | | |
| Bald eagle | X | X | | | | | X | X | X | X | X | | | | X | | | |
| California condor | | | X | | X | X | | | | | | | | | | | | |
| Aleutian Canada goose | | | | | | | | X | | | X | X | X | X | X | X | X | X |
| California brown pelican | | | | | | | | X | | | | | | | | | | |

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| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | |
|------------------------------------|------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A |
| White-tailed kite | X | | X | | | | | | | | | X | X | X | X | X | X | X |
| Golden eagle | X | | X | | X | X | | | | | | | | | | | | |
| Mountain plover | | | X | | | | | | | | | | | | | | X | |
| Grasshopper sparrow | | | X | | | | | | | | | | | | | | X | |
| Tricolored blackbird | | | X | | | | | | | | | | | X | X | X | X | X |
| Yellow-breasted chat | X | X | | | | | | | | | | | | | | | | |
| Long-eared owl | X | X | | | | X | | | | | | | | | | | | |
| Short-eared owl | | | X | | | | | | | | | X | X | X | X | X | | X |
| Western burrowing owl | | | X | | X | | | | | | | | | | | | X | |
| California gull | | | | | | | | X | | | X | X | X | X | X | X | X | X |
| Black tern | | | | | | | | | | | | | | X | | X | | X |
| Long-billed curlew | | | X | | | | | X | | | | X | | X | X | X | X | X |
| Cooper's hawk | X | X | | | | X | X | | | | | | | | | | | |
| Northern harrier | | | X | | | | | | | | | X | X | X | X | X | X | X |
| Osprey | X | X | | | | X | X | X | X | X | X | | | | | | | |
| White-faced ibis | | | | | | | | | | | | | X | X | | X | X | X |
| Double-crested cormorant (rookery) | X | X | | | | | | | | | | | | | | | | |

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| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | |
|---|------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A |
| Black-crowned night heron (rookery) | X | X | | | | | | | | | | | | X | | | | |
| Great blue heron (rookery) | X | X | | | | | | | | | | | | | | | | |
| Great egret (rookery) | X | X | | | | | | | | | | | | | | | | |
| Snowy egret (rookery) | X | X | | | | | | | | | | | | X | | | | |
| Reptiles | | | | | | | | | | | | | | | | | | |
| Alameda whipsnake | X | | X | | X | X | | | | | | | | | | | | |
| Blunt-nosed leopard lizard | | | X | | | | | | | | | | | | | | | |
| San Joaquin whipsnake | | | X | | X | X | | | | | | | | | | | | |
| Western pond turtle | X | | | | | | | X | X | X | | | | X | | | | |
| Amphibians | | | | | | | | | | | | | | | | | | |
| California red-legged frog | X | X | X | | | | | X | X | X | | | X | X | X | | | |
| Limestone salamander | | | | | X | X | | | | | | | | | | | | |
| California tiger salamander | | | X | | | | | | | X | | | | X | | | | |
| Foothill yellow-legged frog | X | X | | | | | | X | X | | | | | | | | | |
| Western spadefoot | | | | | | | | | | | | | | X | | | | |
| Fish | | | | | | | | | | | | | | | | | | |
| Central Coast steelhead Evolutionarily Significant Unit (ESU) | | | | | | | | X | X | X | | X | X | | | | | |

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| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | | |
|--------------------------------|------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|--|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A | |
| Tidewater goby | | | | | | | | X | | | | X | X | | | | | | |
| Invertebrates | | | | | | | | | | | | | | | | | | | |
| Callippe silverspot | | | X | | | | | | | | | | | | | | | | |
| Lange's metalmark | | | | X | | | | | | | | | | | | | | | |
| California freshwater shrimp | | | | | | | | | X | | | | | | | | | | |
| Conservancy fairy shrimp | | | | | | | | | | | | | | X | | | | | |
| Longhorn fairy shrimp | | | | | | | | | | | | | | X | | | | | |
| Vernal pool fairy shrimp | | | | | | | | | | | | | | X | | | | | |
| Vernal pool tadpole shrimp | | | | | | | | | | | | | | X | X | | | | |
| Monarch butterfly (roost) | | | | | | X | | | | | | | | | | | | | |
| Plants | | | | | | | | | | | | | | | | | | | |
| Antioch Dunes evening-primrose | | | | X | | | | | | | | | | | | | | | |
| Butte County meadowfoam | | | | | | | | | | | | | | | X | | | | |
| California seablite | | | | | | | | | | | | X | | | | | | | |
| Calistoga popcornflower | | | X | | | | | | | | | | X | X | | | | | |
| Clara Hunt's milkvetch | | | X | | | X | | | | | | | | | | | | | |
| Colusa grass | | | | | | | | | | | | | | | X | | | | |

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| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | | |
|----------------------------|------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|--|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A | |
| Contra Costa goldfields | | | | | | | | | | | | | | | X | | | | |
| Contra Costa wallflower | | | | X | | | | | | | | | | | | | | | |
| El Dorado bedstraw | | | | | X | X | | | | | | | | | | | | | |
| Few-flowered navarretia | | | | | | | | | | | | | | | X | | | | |
| Greene's tuctoria | | | | | | | | | | | | | | | X | | | | |
| Hairy orcutt grass | | | | | | | | | | | | | | | X | | | | |
| Hartweg's golden sunburst | | | X | | | X | | | | | | | | | | | | | |
| Hoover's eriastrum | | | X | | | | | | | | | | | | | | | | |
| Hoover's spurge | | | | | | | | | | | | | | | X | | | | |
| Kenwood Marsh checkerbloom | | | | | | | | | | | | | | X | | | | | |
| Large-flowered fiddleneck | | | X | | | X | | | | | | | | | | | | | |
| Layne's ragwort | | | | | X | X | | | | | | | | | | | | | |
| Loch Lomond button-celery | | | | | | | | | | | | | | | X | | | | |
| Many-flowered navarretia | | | | | | | | | | | | | | | X | | | | |
| Marin western flax | | | X | | X | | | | | | | | | | | | | | |
| Napa blue grass | | | | | | | | | | | | | | X | | | | | |
| Pallid manzanita | | | | | X | | | | | | | | | | | | | | |

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| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | |
|---------------------------------|------------------------------|--------|---|-----|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | IDS | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A |
| Palmate-bracted bird's-beak | | | | | | | | | | | | | | | X | | | |
| Pine Hill ceanothus | | | | | X | X | | | | | | | | | | | | |
| Pine Hill flannelbush | | | | | X | X | | | | | | | | | | | | |
| Pitkin Marsh lily | | | | | | | | | | | | | | X | | | | |
| Sacramento orcutt grass | | | | | | | | | | | | | | | X | | | |
| San Benito evening-primrose | | | | | X | X | | | | | | | | | | | | |
| San Joaquin adobe sunburst | | | X | | | | | | | | | | | | | | | |
| San Joaquin Valley orcutt grass | | | | | | | | | | | | | | | X | | | |
| San Joaquin woolythreads | | | X | | | | | | | | | | | | X | | | |
| Sebastopol meadowfoam | | | | | | | | | | | | | | | X | | | |
| Showy Indian clover | | | X | | | | | | | | | | | | X | | | |
| Slender orcutt grass | | | | | | | | | | | | | | | X | X | | |
| Sonoma alopecurus | X | | | | | | | | | | | | | X | | | | |
| Sonoma spineflower | | | X | | | | | | | | | | | | | | | |
| Sonoma sunshine | | | | | | | | | | | | | | | X | | | |
| Stebbins' morning-glory | | | | | X | X | | | | | | | | | | | | |
| Succulent owl's-clover | | | | | | | | | | | | | | | X | | | |

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|-----------------------------|------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|--|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A | |
| Tiburon Indian paintbrush | | | X | | | | | | | | | | | | | | | | |
| Tiburon jewelflower | | | X | | | | | | | | | | | | | | | | |
| Tiburon Mariposa lily | | | X | | | | | | | | | | | | | | | | |
| White sedge | | | | | | | | | | | | | | X | | | | | |
| White-rayed pentachaeta | | | X | | | | | | | | | | | | | | | | |
| Baker's larkspur | | | | | X | | | | | | | | | | | | | | |
| Baker's manzanita | | | | | X | | | | | | | | | | | | | | |
| Boggs Lake hedge-hyssop | | | | | | | | | | | | | | | X | | | | |
| California vervain | X | | | | | X | | | | | | | | | | | | | |
| Chinese Camp brodiaea | | | | | | | | | | | | | | | | X | | | |
| Indian Valley brodiaea | | | X | | X | | X | | | | | | | | | | | | |
| Ione buckwheat | | | | | X | | | | | | | | | | | | | | |
| Irish Hill buckwheat | | | | | X | | | | | | | | | | | | | | |
| Marin checkerbloom | | | X | | X | | | | | | | | | | | | | | |
| Mason's ceanothus | | | | | X | | | | | | | | | | | | | | |
| Mt. Diablo bird's-beak | | | | | X | | | | | | | | | | | | | | |
| North Coast semaphore grass | | | | | | | X | | | | | | | X | X | | | | |
| Rock sanicle | | | X | | X | | X | | | | | | | | | | | | |

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TFE = Tidal freshwater emergent
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 NSW = Natural seasonal wetlands
 MSW = Managed seasonal wetlands
 VFR = Valley/foothill riparian

MR = Montane riparian
 G = Grassland
 IDS = Inland dune scrub
 US = Upland scrub
 VFW = Valley/foothill woodland

MWF = Montane woodland and forest
 UC = Upland cropland
 SEA = Seasonally flooded agriculture

| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | |
|----------------------------------|------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A |
| Santa Cruz tarplant | | | X | | | | | | | | | | | | | | | |
| Yellow larkspur | | | X | | X | | | | | | | | | | | | | |
| lone manzanita | | | | | | X | | | | | | | | | | | | |
| Rawhide Hill onion | | | | | | X | | | | | | | | | | | | |
| Ahart's dwarf rush | | | | | | | | | | | | | | | X | | | |
| Arburua Ranch jewelflower | | | X | | X | | | | | | | | | | | | | |
| Ben Lomond buckwheat | | | | | X | X | | | | | | | | | | | | |
| Big tarplant | | | X | | | | | | | | | | | | | | | |
| Brittlescale | | | X | | | | | | | | | | | | X | | | |
| California beaked-rush | | | | | | | X | | | | | | | X | | | | |
| Congdon's lomatium | | | | | X | X | | | | | | | | | | | | |
| Congdon's tarplant | | | X | | | | | | | | | | | | | | | |
| Contra Costa manzanita | | | | | X | | | | | | | | | | | | | |
| Diablo helianthella | | | X | | | | | | | | | | | | | | | |
| Diamond-petaled California poppy | | | X | | | | | | | | | | | | | | | |
| Eel-grass pondweed | | | | | | | | | X | X | X | | | X | | | | |
| Ferris' milkvetch | | | X | | | | | | | | | | | | X | | | |
| Four-angled spikerush | | | | | | | | | | | | | | X | | | | |
| Heartscale | | | X | | X | | | | | | | | | | | | | |

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| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | |
|--------------------------|------------------------------|--------|---|---------|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | |
| | VF R | M R | G | ID S | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A |
| Heckard's peppergrass | | | X | | | | | | | | | | | | | | | |
| Hispid bird's-beak | | | | | | | | | | | | | | X | X | | | |
| Hospital Canyon larkspur | | | | | X | X | | | | | | | | | | | | |
| Legenere | | | | | | | | | | | | | | X | X | | | |
| Lesser saltscale | | | X | | | | | | | | | | | | X | | | |
| Lost Hills crownscale | | | X | | | | | | | | | | | | X | | | |
| Mad-dog skullcap | | | | | | | X | | | | | | | X | X | | | |
| Mariposa clarkia | X | | | | | X | | | | | | | | | | | | |
| Marsh checkerbloom | X | | | | | | | | | | | | | X | | | | |
| Merced phacelia | | | X | | | | | | | | | | | | | | | |
| Mt. Diablo jewelflower | | | X | | X | | | | | | | | | | | | | |
| Mt. Diablo manzanita | | | | | X | | | | | | | | | | | | | |
| Mt. Hamilton coreopsis | | | | | | X | | | | | | | | | | | | |
| Mt. Hamilton jewelflower | | | | | X | X | | | | | | | | | | | | |
| Napa western flax | | | | | X | | | | | | | | | | | | | |
| Panoche peppergrass | | | X | | | | | | | | | | | | | | | |
| Pincushion navarretia | | | | | | | | | | | | | | | X | | | |
| Point Reyes bird's-beak | | | | | | | | | | | | X | | | | | | |
| Red Hills ragwort | | | | | | X | | | | | | | | | | | | |

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D-053672

| Evaluation Species | NCCP Habitat Types | | | | | | | | | | | | | | | | | | |
|------------------------------|------------------------------|--------|---|-----|----|---------|-------------|------------------|---------|---------|---|-----------------------------------|---------|----------|---------|-------------|----|---------|--|
| | Riparian and Upland Habitats | | | | | | | Aquatic Habitats | | | | Wetland and Agricultural Habitats | | | | | | | |
| | VF R | M R | G | IDS | US | VF W | M W F | TP A | VR A | M RA | L | SE | TF E | NF PE | NS W | M S W | UC | SF A | |
| Red-flowered lotus | | | X | | | X | | | | | | | | | | | | | |
| Rose-mallow | | | | | | | | | | | | | | X | | | | | |
| San Joaquin spearscale | | | X | | | | | | | | | | | | X | | | | |
| Sanford's arrowhead | | | | | | | | | | | | | | X | | | | | |
| Saw-toothed lewisia | | X | | | | | X | | | | | | | | | | | | |
| Shaggyhair lupine | | | | | X | X | | | | | | | | | | | | | |
| Sharsmith's harebell | | | | | X | | | | | | | | | | | | | | |
| Showy madia | | | X | | | X | | | | | | | | | | | | | |
| Slough thistle | X | | | | | | | | | | | | X | X | X | | | | |
| Spiny-sepaled button-celery | | | X | | | | | | | | | | | | X | | | | |
| Henderson's bent grass | | | X | | | | | | | | | | | | X | | | | |
| Marin knotweed | | | | | | | | | | | | X | | | | | | | |
| San Antonio Hills monardella | | | | | X | X | | | | | | | | | | | | | |

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