

## **APPENDIX C-2**

Assumptions for without and with the project conditions, and without and with management conditions for the Stepped Release Plan (levee modifications and Howe Avenue Bridge raising).

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**Note:** Assumptions are for both HEPs except where noted.

### **Future Without Project Conditions (Impact Area)**

#### **General**

- (a) Land uses will not change from current use.
- (b) Vegetation currently allowed to grow in impact areas will remain, but not increase significantly in size (acreage).
- (c) Existing cover-types to be impacted and compensated through the HEP analysis are oak woodland and riparian woodland for the levee modifications and riparian woodland and SRA Cover for the Howe Avenue Bridge raising.
- (d) The methodology used to measure Variable 6 for the SRA Cover model was reasonable (see “Field Sampling and Data Collection” section).

### **Future With Project Conditions (Impact Area)**

#### **General**

- (a) The project life is 100 years. The construction period is 7 years.
- (b) In-kind replacement of cover-type values will be sought for riparian woodland (levee modifications and Howe Avenue Bridge raising), oak woodland (levee modifications), and SRA Cover (Howe Avenue Bridge raising).
- (c) Impacts from the project would occur in the existing permanent and temporary easement areas (worst-case scenario).
- (d) All cover-types in the impact zones will be removed by construction activities.
- (e) All woody vegetation at borrow sites and staging areas will be avoided by flagging or fencing the areas.
- (f) Maintenance activities on newly-constructed features limit vegetation to grass species.
- (g) Upland herbaceous habitat impacted by the project will be reseeded to grassland after construction, requiring no additional mitigation.
- (h) Riparian woodland (trees  $\geq$  15 feet high) and riparian scrub-shrub (trees/shrubs  $<15$  feet high) are “lumped together” and called “riparian woodland”. This is because it is too difficult to separate out the two heights within the riparian impact area, and because it is assumed that the scrub-shrub habitat will, over time, grow into riparian woodland habitat.
- (i) The Corps will not replant oak woodland and riparian woodland in the temporary easement areas (levee modifications).
- (j) Both bridge raising alternatives (see preliminary draft FWCA report) would impact the same quantity of habitat.
- (k) The borrow sites and staging areas for the levee modifications construction are the same as for the bridge raising (Howe Avenue and Guy West) and local utilities, drainages, and water intake facilities modifications construction work.
- (l) The values (HSIs) of riparian woodland and oak woodland are same at the NEMDC impact areas as they are at the levee modifications impact areas.

- (m) The values (HSIs) of riparian woodland are same at the Howe Avenue Bridge raising impact site as they are at the levee modifications impact areas.

#### **Future Without Management Conditions (Compensation Area)**

- (a) Current land use will not change, therefore, existing and future values have a HSI of 0.  
(b) Current maintenance activities will not change.

#### **Future With Management Conditions (Compensation Area)**

##### **General**

- (a) Compensation areas will be revegetated to develop the same cover-types as those that will be lost.  
(b) Planting of the compensation area will be timed to coincide with the construction.  
(d) Since a HEP was not conducted for the hydraulic mitigation area, we used the mitigation ratios that were derived from the Service's 1996 final supplemental HEP for the project for riparian woodland and oak woodland.  
(e) Compensation for seasonal freshwater emergent marsh, open water, and agricultural lands (rice only) will be addressed in the section 7 consultation for the giant garter snake.

##### **Riparian woodland**

- (a) Riparian woodland habitat would reach maximum values by 50 years after this habitat is planted at the management site.  
(b) The site would be graded to an appropriate elevation to create suitable hydrologic conditions.  
(c) The ground surface would be "ripped" before planting to decompact soil and dislodge cobble.  
(d) The site would be planted with acorns (pre-germinated, three to hole), cuttings, and seedlings (4-inch x 4-inch x 14-inch deepots that consist of shrubs and trees).  
(e) Species composition would include: live oak, black oak, blue oak, ash, cottonwood, foothill pine, box elder, wild rose, baccharis, California blackberry, coffeeberry, red willow, and Goodding's willow.  
(f) Irrigation would be provided in the form of a drip irrigation system for 2 years during the summer months (one outlet per plant, two for oak species).  
(g) A native grass seed mix would be planted for erosion control and to supplement the soil. The seeds would be drilled and include mychorrizal innoculate (60 lbs. per acre), California brome, meadow barley, California buckwheat, zorro fescue, baltic rush, arroyo lupine, California poppy, and blue wildrye

##### **Oak woodland**

- (a) Oak woodland habitat will reach maximum values by 100 years after this habitat is planted at the management site (levee modifications).  
(b) At least 400 trees per acre of oak woodland would be planted.  
(c) The site would be rototilled before planting.  
(d) The site would be augured 8-10 inches and planted with acorns (pre-germinated, three to a hole), 1-year seedlings (4-inch x 4-inch by 14-inch deepots).  
(e) Species composition would be 65% valley oaks, 30% black oaks, and 5% baccharis.

- (f) Irrigation would be provided in the form of a drip irrigation system by drilling a well for a water source, and include deep watering every 10 days for the first year, then every 4 weeks thereafter for 4 years.
- (g) Native grass seeds would be planted for erosion control and to supplement the soil. The seeds would be drilled and include mychorrizal innoculate (60 lbs. per acre), California brome, blue wildrye, meadow barley, Baltic rush, nodding needlegrass, California broom, California buckwheat, coyote brush, and tomcat clover.

**SRA Cover**

- (a) SRA Cover will reach maximum values by 100 years.
- (b) SRA Cover would be adequately mitigated on-site by replanting the impacted area after construction.



**APPENDIX D**

**AMERICAN RIVER WATERSHED INVESTIGATION  
LONG-TERM EVALUATION**

**STEPPED RELEASE PLAN FOR THE  
LOWER AMERICAN RIVER**

**FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES**

**AUGUST 2001**



ATTACHMENT A

Endangered and Threatened Species that May Occur in  
or be Affected by Projects in the Selected Quads Listed Below

July 12, 2001

QUAD : 480A ISLETON

*Listed Species*

Mammals

- riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E) \*  
riparian brush rabbit, *Sylvilagus bachmani riparius* (E) \*

Birds

- bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

- giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

- Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

- delta smelt, *Hypomesus transpacificus* (T)

- Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

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

- Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

- Conservancy fairy shrimp, *Branchinecta conservatio* (E)

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

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

- delta green ground beetle, *Elaphrus viridis* (T)

- vernal pool tadpole shrimp, *Lepidurus packardi* (E)

*Proposed Species*

Birds

- mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Amphibians

- California tiger salamander, *Ambystoma californiense* (C)

Fish

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

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

*Species of Concern*

Mammals

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

greater western mastiff-bat, *Eumops perotis californicus* (SC)

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

black rail, *Laterallus jamaicensis coturniculus* (CA)

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

Sacramento anthcid beetle, *Anthicus sacramento* (SC)

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

Plants

Northern California black walnut, *Juglans californica* var. *hindsii* (SC) \*

Mason's lilaeopsis, *Lilaeopsis masonii* (SC)

QUAD : 480B RIO VISTA

*Listed Species*

Mammals

riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E) \*

riparian brush rabbit, *Sylvilagus bachmani riparius* (E) \*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

Conservancy fairy shrimp, *Branchinecta conservatio* (E)

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

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

delta green ground beetle, *Elaphrus viridis* (T)

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

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

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

*Species of Concern*

Mammals

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

greater western mastiff-bat, *Eumops perotis californicus* (SC)

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

black rail, *Laterallus jamaicensis coturniculus* (CA)

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

Sacramento anthcid beetle, *Anthicus sacramento* (SC)

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

Plants

Suisun Marsh aster, *Aster latus* (SC)

valley spearscale, *Atriplex joquiniana* (SC) \*

Northern California black walnut, *Juglans californica* var. *hindsii* (SC) \*

delta tule-pea, *Lathyrus jepsonii* var. *jepsonii* (SC)

Mason's lilaeopsis, *Lilaeopsis masonii* (SC)

QUAD : 480C JERSEY ISLAND

*Listed Species*

Mammals

riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E) \*

riparian brush rabbit, *Sylvilagus bachmani riparius* (E) \*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

#### Invertebrates

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

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

delta green ground beetle, *Elaphrus viridis* (T)

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

#### Plants

Antioch Dunes evening-primrose, *Oenothera deltoides* ssp. *howellii* (E)

#### Proposed Species

##### Birds

mountain plover, *Charadrius montanus* (PT)

#### Candidate Species

##### Amphibians

California tiger salamander, *Ambystoma californiense* (C)

##### Fish

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

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

#### Species of Concern

##### Mammals

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

greater western mastiff-bat, *Eumops perotis californicus* (SC)

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)

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

Birds

- tricolored blackbird, *Agelaius tricolor* (SC)  
western burrowing owl, *Athene cunicularia hypugaea* (SC)  
Aleutian Canada goose, *Branta canadensis leucopareia* (D)  
ferruginous hawk, *Buteo regalis* (SC)  
little willow flycatcher, *Empidonax traillii brewsteri* (CA)  
American peregrine falcon, *Falco peregrinus anatum* (D)  
greater sandhill crane, *Grus canadensis tabida* (CA)  
black rail, *Laterallus jamaicensis coturniculus* (CA)  
white-faced ibis, *Plegadis chihi* (SC)  
bank swallow, *Riparia riparia* (CA)

Reptiles

- silvery legless lizard, *Anniella pulchra pulchra* (SC)  
northwestern pond turtle, *Clemmys marmorata marmorata* (SC)  
southwestern pond turtle, *Clemmys marmorata pallida* (SC)  
San Joaquin coachwhip (=whipsnake), *Masticophis flagellum ruddocki* (SC)

Amphibians

- western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

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

Invertebrates

- Antioch Dunes anthcid beetle, *Anthicus antiochensis* (SC)  
Sacramento anthcid beetle, *Anthicus sacramento* (SC)  
California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

- Suisun Marsh aster, *Aster lentus* (SC)  
valley spearscale, *Atriplex joaquiniana* (SC) \*

Mason's lilaeopsis, *Lilaeopsis masonii* (SC)

QUAD : 497C LIBERTY ISLAND

*Listed Species*

Mammals

riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E) \*

riparian brush rabbit, *Sylvilagus bachmani riparius* (E) \*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

Conservancy fairy shrimp, *Branchinecta conservatio* (E)

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

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

delta green ground beetle, *Elaphrus viridis* (T)

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

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

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

*Species of Concern*

Mammals

Pacific western big-eared bat, *Corynorhinus* (=*Plecotus*) *townsendii townsendii* (SC)  
small-footed myotis bat, *Myotis ciliolabrum* (SC)  
long-eared myotis bat, *Myotis evotis* (SC)  
fringed myotis bat, *Myotis thysanodes* (SC)  
long-legged myotis bat, *Myotis volans* (SC)  
Yuma myotis bat, *Myotis yumanensis* (SC)  
San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)  
western burrowing owl, *Athene cunicularia hypugaea* (SC)  
Aleutian Canada goose, *Branta canadensis leucopareia* (D)  
ferruginous hawk, *Buteo regalis* (SC)  
little willow flycatcher, *Empidonax traillii brewsteri* (CA)  
American peregrine falcon, *Falco peregrinus anatum* (D)  
greater sandhill crane, *Grus canadensis tabida* (CA)  
white-faced ibis, *Plegadis chihi* (SC)  
bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

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

Invertebrates

Antioch Dunes anthcid beetle, *Anthicus antiochensis* (SC)  
Sacramento anthcid beetle, *Anthicus sacramento* (SC)  
California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

Ferris's milk-vetch, *Astragalus tener* var. *ferrisiae* (SC) \*

adobe lily, *Fritillaria pluriflora* (SC)

delta tule-pea, *Lathyrus jepsonii* var. *jepsonii* (SC)

Mason's lilaeopsis, *Lilaeopsis masonii* (SC)

QUAD : 497D COURTLAND

*Listed Species*

Mammals

riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E) \*

riparian brush rabbit, *Sylvilagus bachmani riparius* (E) \*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

Conservancy fairy shrimp, *Branchinecta conservatio* (E)

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

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

delta green ground beetle, *Elaphrus viridis* (T)

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

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

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

*Species of Concern*

Mammals

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

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

Sacramento anthicid beetle, *Anthicus sacramento* (SC)

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

Plants

delta tule-pea, *Lathyrus jepsonii* var. *jepsonii* (SC)

QUAD : 511B FOLSOM

*Listed Species*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

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

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

Plants

Sacramento Orcutt grass, *Orcuttia viscida* (E)

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Fish

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

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

*Species of Concern*

Mammals

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

spotted bat, *Euderma maculatum* (SC)

greater western mastiff-bat, *Eumops perotis californicus* (SC)

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC) .

Invertebrates

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

Plants

pincushion navarretia, *Naverretia myersii* spp. *myersii* (SC)

QUAD : 512A CITRUS HEIGHTS

*Listed Species*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

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

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

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

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

*Species of Concern*

Mammals

- Pacific western big-eared bat, *Corynorhinus* (=*Plecotus*) *townsendii townsendii* (SC)
- greater western mastiff-bat, *Eumops perotis californicus* (SC)
- small-footed myotis bat, *Myotis ciliolabrum* (SC)
- long-eared myotis bat, *Myotis evotis* (SC)
- fringed myotis bat, *Myotis thysanodes* (SC)
- long-legged myotis bat, *Myotis volans* (SC)
- Yuma myotis bat, *Myotis yumanensis* (SC)
- San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

- tricolored blackbird, *Agelaius tricolor* (SC)
- western burrowing owl, *Athene cunicularia hypugaea* (SC)
- Aleutian Canada goose, *Branta canadensis leucopareia* (D)
- ferruginous hawk, *Buteo regalis* (SC)
- little willow flycatcher, *Empidonax traillii brewsteri* (CA)
- American peregrine falcon, *Falco peregrinus anatum* (D)
- white-faced ibis, *Plegadis chihi* (SC)
- bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

- western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

- green sturgeon, *Acipenser medirostris* (SC)
- longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

Plants

- valley sagittaria, *Sagittaria sanfordii* (SC) \*

QUAD : 512C SACRAMENTO EAST

*Listed Species*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

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

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

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

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

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

*Species of Concern*

Mammals

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

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)  
Yuma myotis bat, *Myotis yumanensis* (SC)  
San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)  
western burrowing owl, *Athene cunicularia hypugaea* (SC)  
Aleutian Canada goose, *Branta canadensis leucopareia* (D)  
ferruginous hawk, *Buteo regalis* (SC)  
little willow flycatcher, *Empidonax traillii brewsteri* (CA)  
American peregrine falcon, *Falco peregrinus anatum* (D)  
white-faced ibis, *Plegadis chihi* (SC)  
bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

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

Invertebrates

Antioch Dunes anthcid beetle, *Anthicus antiochensis* (SC)  
Sacramento anthcid beetle, *Anthicus sacramento* (SC)  
California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

valley sagittaria, *Sagittaria sanfordii* (SC)

QUAD : 512D CARMICHAEL

*Listed Species*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

**Reptiles**

giant garter snake, *Thamnophis gigas* (T)

**Amphibians**

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

**Fish**

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

**Invertebrates**

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

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

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

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

**Proposed Species**

**Birds**

mountain plover, *Charadrius montanus* (PT)

**Candidate Species**

**Amphibians**

California tiger salamander, *Ambystoma californiense* (C)

**Fish**

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

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

**Species of Concern**

**Mammals**

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

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

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

Birds

- tricolored blackbird, *Agelaius tricolor* (SC)  
western burrowing owl, *Athene cunicularia hypugaea* (SC)  
Aleutian Canada goose, *Branta canadensis leucopareia* (D)  
ferruginous hawk, *Buteo regalis* (SC)  
little willow flycatcher, *Empidonax traillii brewsteri* (CA)  
American peregrine falcon, *Falco peregrinus anatum* (D)  
white-faced ibis, *Plegadis chihi* (SC)  
bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

- western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

- green sturgeon, *Acipenser medirostris* (SC)  
longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

QUAD : 513A TAYLOR MONUMENT

*Listed Species*

Birds

- bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

- giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

- delta smelt, *Hypomesus transpacificus* (T)

- Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

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

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

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

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

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

*Species of Concern*

Mammals

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

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

Sacramento anthcid beetle, *Anthicus sacramento* (SC)

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

QUAD : 513B GRAYS BEND

*Listed Species*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

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

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

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

Plants

palmate-bracted bird's-beak, *Cordylanthus palmatus* (E)

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

*Candidate Species*

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

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

*Species of Concern*

Mammals

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

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

Sacramento anthcid beetle, *Anthicus sacramento* (SC)

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

Plants

alkali milk-vetch, *Astragalus tener* var. *tener* (SC)

brittlescale, *Atriplex depressa* (SC)

valley spearscale, *Atriplex joaquiniana* (SC) \*

QUAD : 513C DAVIS

*Listed Species*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

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

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

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

**Proposed Species**

Birds

mountain plover, *Charadrius montanus* (PT)

**Candidate Species**

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

**Species of Concern**

Mammals

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

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

Sacramento anthicid beetle, *Anthicus sacramento* (SC)

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

Plants

alkali milk-vetch, *Astragalus tener* var. *tener* (SC) \*

QUAD : 513D SACRAMENTO WEST

*Listed Species*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

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

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

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

**Proposed Species**

Birds

mountain plover, *Charadrius montanus* (PT)

**Candidate Species**

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

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

**Species of Concern**

Mammals

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

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

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

Sacramento anthicid beetle, *Anthicus sacramento* (SC)

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

QUAD : 529D - VERONA

*Listed Species*

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

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

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

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

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

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

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

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

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

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

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

*Proposed Species*

Birds

mountain plover, *Charadrius montanus* (PT)

**Candidate Species**

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

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

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

**Species of Concern**

Mammals

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

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

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

fringed myotis bat, *Myotis thysanodes* (SC)

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

Yuma myotis bat, *Myotis yumanensis* (SC)

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

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

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

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

ferruginous hawk, *Buteo regalis* (SC)

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

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

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

bank swallow, *Riparia riparia* (CA)

Reptiles

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

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

- Antioch Dunes anthcid beetle, *Anthicus antiochensis* (SC)  
Sacramento anthcid beetle, *Anthicus sacramento* (SC)  
California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

KEY:

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

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

*Section 7(a): Consultation/Conference*

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

*Section 7(c): Biological Assessment - Major Construction Activity<sup>1</sup>*

Requires Federal Agencies or their designees to prepare a Biological Assessment (BA) for major construction activities. The BA analyzes the effects of the action<sup>2</sup> on listed and proposed species. The process begins with a Federal agency requesting from FWS a list of proposed and listed threatened and endangered species. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the list, the accuracy of the species list should be verified with the Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may proceed; however, no construction may begin.

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

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

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

**APPENDIX E**

**AMERICAN RIVER WATERSHED INVESTIGATION  
LONG-TERM EVALUATION**

**STEPPED RELEASE PLAN FOR THE  
LOWER AMERICAN RIVER**

**STATE LISTED THREATENED AND ENDANGERED SPECIES**

**AUGUST 2001**



California Department of Fish and Game  
Natural Diversity Data Base

SPECIES FOUND IN L. AM. RIVER & HYDRAULIC MIT. AREA QUADS

| Scientific/Common Name                                     | Federal/<br>State Status | Global/<br>State Rank | CNPS/<br>R-E-D | CDFG<br>Status |
|--|--------------------------|-----------------------|----------------|----------------|
| ACCIPITER COOPERII (NESTING)<br>COOPER'S HAWK              | None/<br>None            | G4/<br>S3             |                | SC             |
| AGELAIUS TRICOLOR (NESTING COLONY)<br>TRICOLORED BLACKBIRD | None/<br>None            | G3/<br>S3             |                | SC             |
| ANNIELLA PULCHRA PULCHRA<br>SILVERY LEGLESS LIZARD         | None/<br>None            | G4QT3/<br>S3          |                | SC             |
| ANTHICUS SACRAMENTO<br>SACRAMENTO ANTHICID BEETLE          | None/<br>None            | G1/<br>S1             |                |                |
| ARCHOPLITES INTERRUPTUS<br>SACRAMENTO PERCH                | None/<br>None            | G3/<br>S1             |                | SC             |
| ARDEA ALBA<br>GREAT EGRET                                  | None/<br>None            | G5/<br>S4             |                |                |
| ARDEA HERODIAS (ROOKERY)<br>GREAT BLUE HERON               | None/<br>None            | G5/<br>S4             |                |                |
| ASTER LENTUS<br>SUISUN MARSH ASTER                         | None/<br>None            | G2/<br>S2.2           |                | 1B/<br>2-2-3   |
| ASTRAGALUS TENER VAR TENER<br>ALKALI MILK-VETCH            | None/<br>None            | G1T1/<br>S1.1         |                | 1B/<br>3-2-3   |
| ATHENE CUNICULARIA (BURROW SITES)<br>BURROWING OWL         | None/<br>None            | G4/<br>S2             |                | SC             |
| ATRIPLEX CORDULATA<br>HEARTSCALE                           | None/<br>None            | G2?/<br>S2.2?         |                | 1B/<br>2-2-3   |
| ATRIPLEX DEPRESSA<br>BRITTLESCALE                          | None/<br>None            | G2Q/<br>S2.2          |                | 1B/<br>2-2-3   |
| ATRIPLEX JOAQUINIANA<br>SAN JOAQUIN SALTBUSSH              | None/<br>None            | G2/<br>S2.1           |                | 1B/<br>2-2-3   |
| BRANCHINECTA LYNCHI<br>VERNAL POOL FAIRY SHRIMP            | Threatened/<br>None      | G2G3/<br>S2S3         |                |                |

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|--|---------------------------------|-----------------------|----------------|----------------|
| BRANCHINECTA MESOVALLENSIS<br>MIDVALLEY FAIRY SHRIMP                   | None/<br>None                   | G2/<br>S2             |                |                |
| BUTEO SWAINSONI (NESTING)<br>SWAINSON'S HAWK                           | None/<br>Threatened             | G4/<br>S2             |                |                |
| CHARADRIUS ALEXANDRINUS NIVOSUS<br>(NESTING)<br>WESTERN SNOWY PLOVER   | Threatened/<br>None             | G4T2/<br>S2           |                | SC             |
| CHARADRIUS MONTANUS (WINTERING)<br>MOUNTAIN PLOVER                     | Proposed<br>Threatened/<br>None | G3/<br>S2?            |                | SC             |
| CLEMmys MARMORATA<br>WESTERN POND TURTLE                               | None/<br>None                   | G4/<br>S3             |                | SC             |
| CLEMmys MARMORATA MARMORATA<br>NORTHWESTERN POND TURTLE                | None/<br>None                   | G4T4/<br>S3           |                | SC             |
| COASTAL AND VALLEY FRESHWATER MARSH                                    | None/<br>None                   | G3/<br>S2.1           |                |                |
| CORDYLANTHUS MOLLIS SSP MOLLIS<br>SOFT BIRD'S-BEAK                     | Endangered/<br>Rare             | G2T1/<br>S1.1         |                | 1B/<br>3-2-3   |
| CORDYLANTHUS PALMATUS<br>PALMATE-BRACTED BIRD'S-BEAK                   | Endangered/<br>Endangered       | G1/<br>S1.1           |                | 1B/<br>3-3-3   |
| DESMOCERUS CALIFORNICUS DIMORPHUS<br>VALLEY ELDERBERRY LONGHORN BEETLE | Threatened/<br>None             | G3T2/<br>S2           |                |                |
| EGRETTA THULA (ROOKERY)<br>SNOWY EGRET                                 | None/<br>None                   | G5/<br>S4             |                |                |
| ELANUS LEUCURUS (NESTING)<br>WHITE-TAILED KITE                         | None/<br>None                   | G5/<br>S3             |                |                |
| ELDERBERRY SAVANNA   | None/<br>None                   | G2/<br>S2.1           |                |                |

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|--|--------------------------|-----------------------|----------------|----------------|
| <i>GRATIOLA HETEROSEPALA</i><br>BOGGS LAKE HEDGE-HYSSOP      | None/<br>Endangered      | G3/<br>S3.1           | 1B/<br>1-2-2   |                |
| GREAT VALLEY COTTONWOOD RIPARIAN FOREST                      | None/<br>None            | G2/<br>S2.1           |                |                |
| <i>HIBISCUS LASIOCARPUS</i><br>ROSE-MALLOW                   | None/<br>None            | G4/<br>S2.2           | 2/<br>2-2-1    |                |
| HYGROTUS CURVIPES<br>CURVED-FOOT HYGROTUS DIVING BEETLE      | None/<br>None            | G1/<br>S1             |                |                |
| <i>ISOCOMA ARGUTA</i><br>CARQUINEZ GOLDENBUSH                | None/<br>None            | G1/<br>S1.1           | 1B/<br>3-3-3   |                |
| JUGLANS HINDSII<br>NORTHERN CALIFORNIA BLACK WALNUT          | None/<br>None            | G1/<br>S1.1           | 1B/<br>3-3-3   |                |
| JUNCUS LEIOSPERMUS VAR AHARTII<br>AHART'S DWARF RUSH         | None/<br>None            | G2T1/<br>S1.2         | 1B/<br>3-2-3   |                |
| LATERALLUS JAMAICENSIS COTURNICULUS<br>CALIFORNIA BLACK RAIL | None/<br>Threatened      | G4T1/<br>S1           |                |                |
| LATHYRUS JEPSONII VAR JEPSONII<br>DELTA TULE PEA             | None/<br>None            | G5T2/<br>S2.2         | 1B/<br>2-2-3   |                |
| LEGENERE LIMOSA<br>LEGENERE                                  | None/<br>None            | G2/<br>S2.2           | 1B/<br>2-3-3   |                |
| LEPIDIUM LATIPES VAR HECKARDII<br>HECKARD'S PEPPER-GRASS     | None/<br>None            | G4T1/<br>S1.2         | 1B/<br>3-2-3   |                |
| LEPIDURUS PACKARDI<br>VERNAL POOL TADPOLE SHRIMP             | Endangered/<br>None      | G2G3/<br>S2S3         |                |                |
| LILAEOPSIS MASONII<br>MASON'S LILAEOPSIS                     | None/<br>Rare            | G3/<br>S3.1           | 1B/<br>2-3-3   |                |
| LIMOSELLA SUBULATA<br>DELTA MUDWORT                          | None/<br>None            | G4?/<br>S2.1          | 2/<br>2-3-1    |                |

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|--|----------------------------|-----------------------|----------------|----------------|
| LINDERIELLA OCCIDENTALIS<br>CALIFORNIA LINDERIELLA                 | None/<br>None              | G2G3/<br>S2S3         |                |                |
| NAVARRETIA MYERSII SSP MYERSII<br>PINCUSHION NAVARRETIA            | None/<br>None              | G1T1/<br>S1.1         | 1B/<br>3-3-3   |                |
| NORTHERN HARDPAN VERNAL POOL                                       | None/<br>None              | G3/<br>S3.1           |                |                |
| NORTHERN VOLCANIC MUD FLOW VERNAL POOL                             | None/<br>None              | G1/<br>S1.1           |                |                |
| NYCTICORAX NYCTICORAX<br>BLACK-CROWNED NIGHT HERON                 | None/<br>None              | G5/<br>S3             |                |                |
| OENOTHERA DELTOIDES SSP HOWELLII<br>ANTIOCH DUNES EVENING-PRIMROSE | Endangered/<br>Endangered  | G5T1/<br>S1.1         | 1B/<br>3-3-3   |                |
| ORCUTTIA VISCIDA<br>SACRAMENTO ORCUTT GRASS                        | Endangered/-<br>Endangered | G1/<br>S1.1           | 1B/<br>3-3-3   |                |
| PLAGIOTHYRS HYSTRICULUS<br>BEARDED POPCORN-FLOWER                  | None/<br>None              | GH/<br>SH             | 1A/<br>*       |                |
| PLEGADIS CHIHI (ROOKERY SITE)<br>WHITE-FACED IBIS                  | None/<br>None              | G5/<br>S1             |                | SC             |
| POGONICHTHYS MACROLEPIDOTUS<br>SACRAMENTO SPLITTAIL                | Threatened/<br>None        | G2/<br>S2             |                | SC             |
| RIPARIA RIPARIA (NESTING)<br>BANK SWALLOW                          | None/<br>Threatened        | G5/<br>S2S3           |                |                |
| SAGITTARIA SANFORDII<br>SANFORD'S ARROWHEAD                        | None/<br>None              | G3/<br>S3.2           | 1B/<br>2-2-3   |                |
| SCAPHIOPUS HAMMONDII<br>WESTERN SPADEFoot                          | None/<br>None              | G3?/<br>S3?           |                | SC             |

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|---|---------------------------|-----------------------|----------------|----------------|
| <i>SCUTELLARIA LATERIFLORA</i><br>BLUE SKULLCAP | None/<br>None             | G5/<br>S1.2           | 2/<br>3-2-1    |                |
| <i>THAMNOPHIS GIGAS</i><br>GIANT GARTER SNAKE   | Threatened/<br>Threatened | G2G3/<br>S2S3         |                |                |
| VALLEY NEEDLEGRASS GRASSLAND                    | None/<br>None             | G1/<br>S3.1           |                |                |

