APPENDIX A

Listing Activity under the California Endangered Species Act 1997-1999 Fish and Game Commission Actions

1997

Rescinded Commission regulatory action of August 27, 1993, to remove from the list of threatened species:
Mohave ground squirrel (*Spermophilus mohavensis*)

Accepted for Candidate for listing as Endangered:
Spring-run chinook salmon (*Oncorhynchus tshawytscha*)

1999

Listed as Endangered:
Spring-run chinook salmon (*Oncorhynchus tshawytscha*)

Accepted for Candidate for listing as Endangered:
Ventura marsh milkvetch (*Astragalus pycnostachyus* var. *lanosissimus*)
Baja California birdbush (*Ornithostaphylos oppositifolia*)

Emergency Regulatory Action - Uplisted from Threatened to Endangered:
California (Sierra Nevada) bighorn sheep (*Ovis canadensis californiana)*

APPENDIX B

1997-1999 Recovery Plans and Working Groups for Listed Animals and Plants

Recovery Plans

1999

Six plants from the mountains surrounding the Los Angeles Basin; this draft plan addresses six federally listed plant species including two State listed plants, Lyon's pentachaeta and marcescent dudleya _____Final; USFWS

Thirteen plant taxa from the northern Channel Islands; the plan addresses 13 federally listed species including five State listed plants _____Draft; USFWS

Peninsular bighorn sheep _____Draft; USFWS

Giant garter snake _____Draft; USFWS

Santa Cruz long-toed salamander _____Preliminary Draft-Revised; USFWS

1998

Marsh sandwort and Gambel's watercress _____Final; USFWS

Pedate checkermallow and Slender-petaled mustard. _____Final; USFWS

Serpentine soil species of the San Francisco Bay Area; the plan addresses 28 federally listed species including 11 State listed plants _____Final; USFWS

Seven coastal plants and the Myrtle's silverspot butterfly; the plan addresses eight federally listed species including Howell's spineflower, Monterey spineflower, Sonoma spineflower, Menzies' wallflower, sand gilia, beach layia, and Tidestrom's lupine Final; USFWS

Vernal pools of southern California; the plan addresses these State listed plants, San Diego button-celery, California Orcutt grass, San Diego mesa mint, and Otay mesa mint _____Final; USFWS

Insect and plant taxa from the Santa Cruz Mountains in California; the plan addresses five federally listed species including the State listed Santa Cruz wallflower Final; USFWS

Owens Basin wetland and aquatic species; the plan addresses 11 species including the State listed Owens Valley checkerbloom, Owens pupfish, and Owens tui chub Final; USFWS

Upland species of the San Joaquin Valley, California; the plan addresses 34 species which includes 11 State listed species (four species of plants, six species of mammal, and one reptile). _____Final; USFWS

Morro shoulderband snail and four plants from western San Luis Obispo County, California _____Final; USFWS

Western lily _____Final; USFWS

California freshwater shrimp _____ Final; USFWS

Shasta crayfish _____ Final; USFWS

Santa Cruz cypress _____ Final; USFWS

Inyo California towhee _____ Final; USFWS

Gabbro soil plants of the central Sierra Nevada foothills; this draft plan addresses six federally listed plant species including El Dorado morning-glory, Pine Hill ceanothus, Pine Hill flannelbush, El Dorado bedstraw, and Layne's ragwort _____ Draft; USFWS

Restoration plan for southern Coho Salmon _____ Draft; DFG

Least Bell's vireo _____ Draft; USFWS

1997

Marbled murrelet _____ Final; USFWS

Western lily _____ Final; USFWS

Large-flowered fiddleneck _____ Final; USFWS

Winter-run chinook salmon _____ Draft; USFWS

Razorback sucker _____ Draft; USFWS

Inyo California towhee _____ Draft; USFWS

Amargosa vole _____ Draft; USFWS

Stephen's kangaroo rat _____ Draft; USFWS

Santa Cruz long-toad salamander _____ Preliminary Draft-Revised; USFWS

Working Groups

Alameda Whipsnake Working Group — The DFG, local agencies, academia, and private individuals.

Bank Swallow Recovery Team — Federal and State agencies, conservation organizations, academics, and researchers.

California Aquatic Bioassessment Working Group — Federal, State and local agencies, researchers, consultants, and private individuals.

California Herpetological Interagency Committee — Informal group of herpetologists and interested individuals. Meetings are held in conjunction with the American Fisheries Society or The Wildlife Society meetings.

California Seabird Research Committee — The DFG, USFWS, NPS, other federal agencies, non-governmental groups, and researchers.

California/Nevada Declining Amphibian Work Group — Amphibian experts, researchers and interested individuals. Sponsored by International Union for the Conservation of Nature and Natural Resources.

Central Valley Project Conservation Program — Bureau of Reclamation, USFWS, DFG, and EPA.

Colorado River Fishes Recovery Team — Federal agencies, Arizona, California, Colorado and Utah wildlife agencies, and fisheries researchers.

Condor Recovery Team — The DFG, USFWS, USFS, zoos, veterinarians, academics, and researchers.

Delta Smelt Working Group — Under USFWS direction members are Federal, State, and local agencies, researchers, consultants, and water user groups.

Desert Fishes Council — International, Mexican, Federal, State, local agency staff, academics, interested private citizens and consultants. Annual meetings are held in the U.S. western states or Mexico.

Desert Tortoise Council — Federal agencies, the DFG, researchers, and interested consultants and private individuals.

Forest Reptile and Amphibian Working Group — DFG and other State agencies and private timber industry.

Furbearer Working Group, AKA Forest Carnivore W. G. — Federal agencies led by the USFS, State agencies, academics, researchers, and interested private individuals.

Giant Garter Snake Recovery Team — The DFG, USFWS and other federal agencies, academia, and private individuals.

Greater Sandhill Crane Recovery Strategy Team — Federal and State agencies led by DFG, consultants, conservation groups, business interests, academics, researchers, and private land owners.

Klamath Basin Recovery Team — Federal agencies, California and Oregon wildlife departments, local agencies, researchers, and water user groups.

Least Bell's vireo / southwestern willow flycatcher / western yellow-billed cuckoo working group — The DFG, USFWS, USFS, DPR, other federal and State agencies, local agencies, academics, researchers, and biological consultants.

Mohave Ground Squirrel Technical Advisory Group — The DFG, BLM, BRD, academics, and researchers.

Mohave Tui Chub Advisory Committee — Federal, State and local agencies, researchers, and consultants.

Morro Bay Kangaroo Rat Recovery Team — The DFG, USFWS, academics, and researchers.

Owens Valley River Basin Recovery Team — Federal, State and local agencies, Los Angeles Department of Water and Power, and interested private individuals.

Red-legged Frog Recovery Team — USFWS and other federal agencies, the DFG, and academia.

San Clemente Loggerhead Shrike Recovery Team — The DFG, USFWS, U.S. Navy, academics, and researchers.

San Joaquin Valley Endangered Species Recovery Team — Federal, State and local agencies, the Endangered Species Recovery Planning Program (ESRPP), academics, researchers, consultants, conservation organizations, and private land owners.

Santa Cruz Long-toed Salamander Management Committee — DFG and other

State agencies, federal and local agencies, Santa Cruz County, researchers and the interested public.

Shay Creek Unarmored Threespine Stickleback Working Group — The DFG and USFWS, researchers, and academics.

Southern California Native Fishes Working Group — Federal and State agencies, academia, and interested individuals.

Southern Rubber Boa Advisory Committee — Federal, State, and local agencies, researchers, consultants, and private individuals

Southwestern Willow Flycatcher Recovery Team, California Implementation Subgroup - The DFG, California offices of USFWS, other federal and State agencies, local agencies and jurisdictions, non-governmental groups, researchers, landowners, and user groups.

Southwestern Willow Flycatcher Recovery Team, Technical Subgroup — Arizona and New Mexico offices of USFWS, USFS, BRD, BOR, New Mexico Game and Fish Department, TNC, academics, and researchers.

Swainson's Hawk Technical Advisory Committee (TAC) — Federal and State agencies, consultants, conservation groups, private individuals, and researchers.

Vernal Pool Ecosystem Recovery Team — Federal, State and local agencies, business interests, and academia.

Watershed Protection Restoration Council — Federal and State agencies. The Council provides oversight of State activities aimed at watershed protection and enhancement, including the conservation and restoration of anadromous salmonids in California.

Western Snowy Plover Recovery Team — The DFG, USFWS and other federal and State agencies, user groups, and researchers.

West Mojave Comprehensive Management Plan Conservation Task Group — The BLM, USFWS, DFG, DPR, local agencies and jurisdictions, non-governmental groups, and user groups.

West Mojave Comprehensive Management Plan Steering Committee — The BLM, USFWS, DFG, local agencies and jurisdictions, non-governmental groups, and user groups.

Willow Flycatcher Working Group (northern subspecies) Federal agencies led by the U.S. Forest Service, State agency biologists and managers, academics, consultants, and researchers.

Yuma Clapper Rail Recovery Team — The DFG, USFWS, BLM, BOR, Arizona Game and Fish Department, non-governmental groups, academics, and researchers.

APPENDIX C

Federally Listed Plant and Animal Species That Are Not Dually Listed Under the California Endangered Species Act

FE - federally endangered; FT - federally threatened

Amphibians (2)

Arroyo southwestern toad (*Bufo microscaphus californicus*)- FE (Jan 1995)
California red-legged frog (*Rana aurora draytonii*)- FT (May 1996)

Birds (6)

Aleutian Canada goose (*Branta canadensis leucopareia*)- FE (Mar 1967); FT (Dec 1990)
Western snowy plover- Pacific coastal populations only (*Charadrius alexandrinus nivosus*)- FT (April 1993)
Northern spotted owl (*Strix occidentalis caurina*)- FT (June 1990)
California coastal gnatcatcher (*Polioptila californica californica*)- FT (March 1993)
San Clemente loggerhead shrike (*Lanius ludovicainus mearnsi*)- FE (Aug 1977)
San Clemente sage sparrow (*Amphispiza belli clementeae*)- FT (Aug 1977)

Fishes (8)

Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*)- FE (Oct 1970); FT (July 1975)
Paiute cutthroat trout (*O. clarki seleniris*)- FE (March 1967); FT (July 1975)
Coho salmon- southern Oregon/northern California ESU[1] (*O. kisutch*)- FT (June 1997)
Chinook salmon- California Coast ESU[1] (*O. tshawytscha*)- FT (Nov 1999)
Steelhead- central California Coast ESU[1] (*O. mykiss*)- FT (Oct 1997)
Steelhead- south/central California Coast ESU[1] (*O. mykiss*)- FT (Oct 1997)
Steelhead- Southern California ESU[1] (*O. mykiss*)- FE (Oct 1997)
Steelhead- Central Valley ESU[1] (*O. mykiss*)- FT (May 1998)
Little Kern golden trout (*O. mykiss whitei*)- FT (April 1978)
Sacramento splittail (*Pogonichthys macrolepidotus*)- FT (Mar 1999)
Tidewater goby (*Eucyclogobius newberryi*)- FE (Feb 1994)

Invertebrates (27)

Morro shoulderband (= banded dune) snail *(Helminthoglypta walkeriana)*- FE (Jan 1995)
Riverside fairy shrimp *(Streptocephalus woottoni)*- FE (Aug 1993)
Conservancy fairy shrimp *(Branchinecta conservatio)*- FE (Sept 1994)
Longhorn fairy shrimp *(B. longiantenna)*-FE (Sept 1994)
Vernal pool fairy shrimp *(B. lynchi)*- FT (Sept 1994)
San Diego fairy shrimp *(B. sandiegonensis)*-FE (Feb 1997)
Vernal pool tadpole shrimp *(Lepidurus packardi)*- FE (Sept 1994)
Zayante band-winged grasshopper *(Trimerotropis infantilis)*-FE (Feb 1997)
Mount Hermon June beetle *(Polyphylla barbata)*- FE (Feb 1997)
Delta green ground beetle *(Elaphrus viridis)*- FT (Aug 1980)
Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*- FT (Aug 1980)
Kern primrose sphinx moth *(Euproserpinus euterpe)*-FT (Apr 1980)
Mission blue butterfly *(Icaricia icarioides missionensis)*- FE (June 1976)
Lotis blue butterfly *(Lycaeides argyrognomon lotis)*- FE (June 1976)
Palos Verdes blue butterfly *(Glaucopsyche lygdamus palosverdesensis)*- FE (July 1980)
El Segundo blue butterfly *(Euphilotes battoides allyni)*- FE (June 1976)
Smith's blue butterfly *(E. enoptes smithi)*- FE (June 1976)
San Bruno elfin butterfly *(Incisalia mossii bayensis)*- FE (June 1976)

Lange's metalmark butterfly *(Apodemia mormo langei)*- FE (June 1976)
Bay checkerspot butterfly *(Euphydryas editha bayensis)*- FT (Oct 1987)
Quino checkerspot *(E. editha quino)*- FE (Jan 1997)
Laguna Mountains skipper *(Pyrgus ruralis lagunae)*- FE (Jan 1997)
Oregon silverspot butterfly *(Speyeria zerene hippolyta)*- FT (July 1980)
Myrtle's silverspot butterfly *(S. zerene myrtleae)*-FE (June 1992)
Behren's silverspot butterfly (*S. z. behrensii*)- FE (Dec 1997)
Calippe silverspot butterfly (*S. callipe callipe*)- FE (Dec 1997)
Delhi Sands flower-loving fly *(Rhaphiomidas terminatus abdominalis)*- FE (Sept 1993)

Mammals (11)

Point Arena mountain beaver (*Aplodontia rufa nigra*)- FE (Dec 1991)
Pacific pocket mouse (*Perognathus longimembris pacificus*)- FE (Sept 1994)
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)- FE (Sept 1998)
Steller (=northern) sea lion (*Eumetopias jubatus*)- FT (April 1990)
Southern sea otter *(Enhydra lutris nereis)*-FT (Jan 1977)
Sei whale *(Balaenoptera borealis)*- FE (June 1970)
Blue whale *(B. musculus)*- FE (June 1970)
Finback whale *(B. physalus)*- FE (June 1970)
Humpback whale *(Megaptera novaeangliae)*- FE (June 1970)
Right whale *(Balaena glacialis (*includes *australis))*- FE (June 1970)
Sperm whale *(Physeter macrocephalus (=catodon))*- FE (June 1970)

Reptiles (5)

Loggerhead sea turtle (*Caretta caretta*)- FT (July 1978)
Green sea turtle (*Chelonia mydas*)- FE (October 1970); FT (July 1978)
Leatherback sea turtle (*Dermochelys coriacea*)- FE (June 1970)
Olive (=Pacific) Ridley sea turtle (*Lepidochelys olivacea*)- FT (July 1978)
Island night lizard (*Xantusia riversiana*)- FT (Aug 1967)

Plants (37)

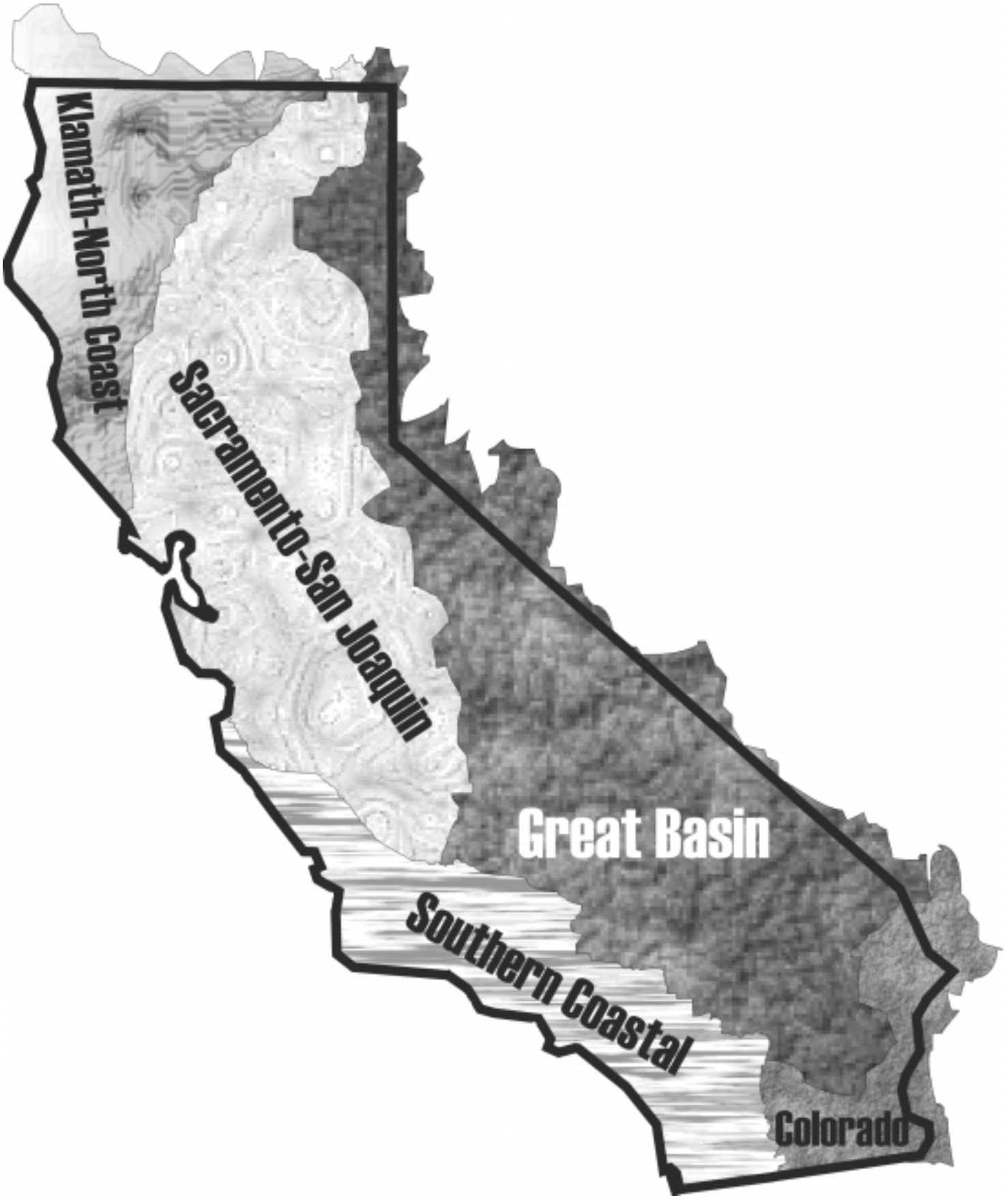
Alopecurus aequalis var. *sonomensis* (Sonoma alopecurus)- FE (Oct 1997)
Arabis hoffmannii (Hoffmann's rock cress)- FE (Sept 1997)
Arctostaphylos confertiflora (Santa Rosa Island manzanita)- FE (Sept 1997)
A. glandulosa ssp. *crassifolia* (Del Mar manzanita)- FE (Nov 1996)
A. morroensis (Morro manzanita)- FE (Jan 1995)
A. myrtifolia (Ione manzanita)- FT (May 1999)
Arenaria ursina (Big Bear Valley sandwort)- FT (Sept 1998)
Astragalus albens (Cushenbury milk-vetch)- FE (Aug 1994)
A. brauntonii (Braunton's milk-vetch)- FE (Feb 1997)
A. jaegerianus (Lane Mountain milk-vetch)- FE (Oct 1998)
A. lentiginosus var. c*oachellae* (Coachella Valley milk vetch)- FE (Oct 1998)
A. lentiginosus var. *piscinensis* (Fish Slough milk-vetch)-FT (Oct 1998)
A. tricarinatus (triple-ribbed milk-vetch)- FE (Oct 1998)
Atriplex coronata var. *notatior* (San Jacinto Valley crownscale)- FE (Oct 1998)
Calyptridium pulchellum (Mariposa pussypaws)- FT (Sept 1998)
Camissonia benitensis (San Benito evening primrose)- FT (March 1985)
Castilleja cineria (ash-gray Indian paintbrush)- FT (Sept 1998)
C. mollis (soft-leaved indian paintbrush)- FE (July 1997)
Ceanothus ferrisae (Coyote ceanothus)- FE (Mar 1995)
Chamaesyce hooveri (Hoover's spurge)- FT (April 1997)
Chorizanthe pungens var. *hartwegiana* (Ben Lomond spineflower)- FE (Feb 1994)
C. pungens var. *pungens* (Monterey spineflower)- FT (Feb 1994)
C. robusta var. *hartwegii* (Scott's Valley spineflower)- FE (Feb 1994)
C. robusta var. *robusta* (robust spineflower)- FE (Feb 1994)
Cirsium hydrophilum var. *hydrophilum* (Suisum thistle)- FE (Nov 1997)
Cupressus goveniana ssp. *goveniana* (Gowen cypress)- FT (Aug 1998)

Dudleya abramsii ssp. *parva* (Conejo dudleya)- FT (Feb 1997)
D. cymosa ssp. *ovatifolia* (Santa Monica Mountains dudleya)- FT (Feb 1997)
D. setchellii (Santa Clara Valley dudleya)- FE (March 1995)
D. verityi (Verity's dudleya)- FT (Feb 1997)
Eremalche kernensis (Kern mallow)- FE (July 1990)
Eriastrum hooveri (Hoover's eriastrum)- FT (July 1990)
Erigeron parishii (Parish's daisy)- FT (Aug 1994)
Eriogonum kennedyi var. *austromontanum* (southern mountain buckwheat)- FT (Sept 1978)
E. ovalifolium var. *vineum* (Cushenbury buckwheat)- FE (Aug 1994)
Gilia tenuiflora ssp. *hoffmannii* (Hoffmann's slender-flowered gilia)- FE (Sept 1997)
Grindelia fraxino-pratensis (Ash Meadows gumplant)- FT (May 1985)
Helianthemum greenei (island rush-rose)- FT (Sept 1997)
Howellia aquatilis (water howellia)- FT (July 1994)
Lasthenia conjugens (Contra Costa goldfields)- FE (July 1997)
Lembertia congdonii (San Joaquin woolly-threads)- FE (July 1990)
Lesquerella kingii ssp. *bernardina* (San Bernardino Mountains bladderpod)- FE (Aug 1994)
Malacothrix indecora (Santa Cruz Island cliff-aster)- FE (Sept 1997)
Malacothrix squalida (island malacothrix)- FE (Sept 1997)
Navarretia fossalis (spreading navarretia)- FT (Oct 1998)
Oxytheca parishii var. *goodmaniana* (Cushenbury oxytheca)- FE (Aug 1994)
Phacelia insularis ssp. *insularis* (northern Channel Islands phacelia)- FE (Sept 1997)
Piperia yadonii (Yadon's rein orchid)- FE (Aug 1998)
Poa atropurpurea (San Bernardino blue grass)- FE (Sept 1998)
Sibara filifolia (Santa Cruz Island rock cress)- FE (Sept 1997)
Streptanthus albidus ssp. *albidus* (Metcalf Canyon jewelflower)- FE (March 1995)
Suaeda californica (California sea-blite)- FE (Jan 1995)
Taraxacum californicum (California dandelion)- FE (Sept 1998)
Thysanocarpus conchuliferus (Santa Cruz Island fringepod)- FE (Sept 1997)
Trichostema austromontanum ssp. *compactum* (Hidden Lake bluecurls)- FT (Sept 1998)
Trifolium amoenum (showy Indian clover)- FE (Oct 1997)

[1] Evolutionary Significant Unit

APPENDIX D
Map of Department of Fish and Game Regional and Headquarters Offices

APPENDIX E
Map of Inland Aquatic Provinces of California



APPENDIX F

Definitions of General Habitat Designations Used in Species Accounts[1]

INTRODUCTION

"General Habitat" indicates one or more habitats in which a candidate, rare, threatened, or endangered species is typically found. The types listed are very broad; each taxon occupies only a portion of the general type. This information was compiled from field survey forms, unpublished reports, original descriptions, floras, and wildlife references. Habitat information based upon field observations was given priority whenever possible. Habitat discussions for terrestrial communities and wetlands emphasize observable differences in vegetation which reflect underlying differences in the physical environment. Major drainages and types of features such as lakes and streams are used for aquatic habitats. Common English words and phrases have been used in both terrestrial and aquatic environments when standardized types did not adequately describe the general habitat of the taxon.

Please refer to R. F. Holland (1986)[2] for a more complete discussion of terrestrial types and their classification. Moyle and Ellison (1991)[3] classifies aquatic habitats.

Coastal Dunes
Herbs or shrubs on coastal sand deposits from Del Norte to San Diego counties. Cover usually low near the beach, increasing with distance from salt spray and blowing sand.

Desert Dunes
Sand accumulations east of the Pacific Crest from Modoc to Imperial counties. Vegetation on desert dunes varies considerably. Active dunes usually support only sparse herbs and grasses.

Inland Dunes
Mostly herbs, although shrubs may be locally important. Sand accumulation in and around the Great Valley.

Coastal Bluff Scrub
Dense shrubs prostrate up 3 - 6.5 feet tall. Typically on fairly steep, rocky sites exposed to considerable wind and salt spray because of proximity to the ocean. Many plants are succulent, especially to the south. Found from Del Norte to San Diego counties.

Coastal Scrub
Dense shrubs 1.5 - 6.5 feet tall with scattered grassy openings. Many plants dormant, even deciduous, during periods of water stress. Most sites have shallow rocky soils, frequently with a southern or western exposure. Many taxa adapted to fire by stump sprouting or high seed production.

Sonoran Desert Scrub
Widely scattered creosote shrubs with the considerable space between them sometimes occupied by ephemeral, colorful shows of annuals following particularly wet winters. Succulents and microphyllous trees conspicuous, especially in rocky environments. Found roughly south of the San Bernardino-Riverside county line.

Mojavean Desert Scrub
Widely scattered creosote shrubs with the considerable space between them sometimes occupied by ephemeral, colorful shows of annuals following particularly wet

winters. At elevations of 2000' or higher, succulents or small-leaved trees lacking.

Great Basin Scrub

Shrubs, ranging in height from very short, eight inches, on very cold sites or shallow soils to 3 - 6.5 feet tall on warmer sites where soils are deeper. Perennial grasses occupy much of the space between shrubs. Found on the Modoc Plateau, high Cascade Range, Warner Mountains, High Sierra Nevada, and North Coast Ranges.

Chenopod Scrub

Usually gray, intricately branched, small-leaved shrubs most commonly on fine-textured, alkaline and/or saline soils in areas of impeded drainage. Diversity usually low; saltbushes and greasewood frequently dominate. This vegetation occurs from Modoc County south to Mexico, including parts of the Great Valley and Inner South Coast Ranges.

Chaparral

Impenetrably dense, evergreen, leathery-leaved shrubs that are active in winter, dormant in summer, and adapted to frequent fires either through resprouting or seed carry-over. Fire-following annuals and short-lived perennials characteristic. Mature stands may exceed 11 to 13 feet in height. It occurs on diverse substrates, many of which support distinctive suites of edaphic indicators. Chaparral may be successional to conifer forests or oak woodlands, as tree seedlings can be found beneath the shrub canopies.

Coastal Prairie

Dense, fairly tall (three feet) perennial sod- and tussock-forming grasses and grass-like herbs. They occur in two distinct settings: sandy marine terraces within the zone of coastal fog (usually 1000 feet elevation, within a matrix of northern coastal scrub), or on fine-textured soils of ridgetops beyond coastal fogs (usually 2,500 feet, within a matrix of mixed evergreen or north coastal conifer forests). Intermittent from the Santa Cruz area north to southern Oregon.

Valley and Foothill Grassland

Introduced, annual Mediterranean grasses and native herbs. On most sites the native species, such as needle grass, have been largely or entirely supplanted by introductions. Stands rich in natives usually found on unusual substrates, such as serpentine or somewhat alkaline soils.

Great Basin Grassland

Perennial sod-forming and bunch grasses. Presumed to have once been widespread on the Modoc Plateau and northeastern California.

Vernal Pools

Amphibious environments dominated by annual herbs and grasses adapted to germination and early growth under water. Spring desiccation triggers flowering and fruit set, resulting in colorful concentric bands around the drying pools.

Meadow and Seep

More or less dense grasses, sedges, and herbs that thrive, at least seasonally, under moist or saturated conditions. They occur from sea level to forestline and on many different substrates. They may be surrounded by grasslands, forests, or shrublands.

Playas

Non-vascular plants and sparse, gray shrubs on poorly drained soils with usually high salinity and/or alkalinity, due to evaporation of water from closed basins. Found from the Modoc Plateau to Sonoran Desert and in the San Joaquin Valley.

Pebble or Pavement Plain

Herb- and grass-dominated openings of low cover, dominated by several cushion-forming plants endemic to dense, clay soils armored by a lag gravel of quartzite pebbles. Many of the dominant taxa are themselves rare plants, found in the San Bernardino

Mountains.

Bogs and Fens

Wetlands, typically occupying sites subirrigated by cold, frequently acidic, water. Plant growth dense and low growing, dominated by perennial herbs or low shrubs. Saturated soils frequently allow substantial accumulations of "peat." From the Klamath to North Coast Ranges, along the North Coast and in the northern Sierra Nevada.

Marsh and Swamp

Emergent, somewhat woody herbs adapted to seasonally or permanently saturated soils. These include salt, brackish, alkali, and fresh water marshes, as well as swamps, with their woody dominants and hydrophytic herbs. Found throughout California.

Riparian Forest

Broadleaved, winter deciduous trees, forming closed canopies, associated with low- to mid-elevation perennial and intermittent streams. Most stands even-aged, reflecting the flood-mediated, episodic reproduction. These habitats can be found in every county and climate in California.

Riparian Woodland

Broadleaved, winter deciduous trees with open canopies associated with low-to mid-elevation streams. Most stands even-aged, reflecting the flood-controlled, episodic reproduction. This type tends to occupy more intermittent streams, often with cobbly or bouldery bedloads.

Riparian Scrub

Streamside thickets dominated by one or more willows, as well as by other fast-growing shrubs and vines. Most plants recolonize following flood disturbance.

Cismontane Woodland

Trees deciduous, evergreen or both, with open canopies. Broadleaved trees dominate, although conifers may be present in or emergent through the canopy. Understories may be open and herbaceous or closed and shrubby. This type occurs on a variety of sites below the conifer forests in Mediterranean California.

Pinon and Juniper Woodland

Open stands of round-topped conifers to 16 feet. Understories frequently comprised of shrubs and herbs seen in adjacent stands lacking trees. They often form broad ecotones between higher elevation forests and lower elevation scrublands or grasslands.

Joshua Tree Woodland

Joshua trees with open canopies are usually the only treelike species present. Shrubstories typically diverse mixtures of small-leaved, evergreen shrubs, semideciduous shrubs, semisucculents, and succulents.

Sonoran Thorn Woodland

Succulents, small-leaved herbs and shrubs, especially of rocky environments. Tree-like plants are the visual dominant.

Broadleaved Upland Forests

Stands of evergreen or deciduous, broadleaved trees 16 feet or more tall, forming closed canopies. Many, but not all, with very poorly developed understories. Several are seral to montane conifer forests. It includes the "mixed evergreen forest" of the Coast Ranges.

North Coast Conifer Forests

Needle-leaved evergreen trees in usually quite dense stands that may attain impressive heights. Usually on well drained, moist sites within the reach of summer fogs, but not experiencing much winter snow. This type occurs in the wetter parts of the

North Coast Ranges.

Closed-cone Conifer Forest

Dense, even-aged stands dominated by conifers with cones which remain on the tree, closed until an environmental trigger, often fire, causes them to open. Most stands are even-aged due to establishment following fire. Usually associated with sterile, rocky soils, strong and steady winds, and impaired drainage. Many open stands have understories composed of chaparral or coastal scrub species from surrounding areas. Found in most areas, except for the Great Valley or deserts.

Lower Montane Conifer Forest

Open to dense stands of conifers found at lower and middle elevations in the mountains. Broadleaved trees may be present in the understory. Shrubstories may be dense assemblages of chaparral species, especially in seral stands. The upper limit of lower montane coniferous forests more or less coincides with the elevation of maximum annual precipitation.

Upper Montane Conifer Forest

Open to dense conifer forests, found at high elevations in the mountains. Trees tend to be somewhat shorter than at lower elevations. Shrubstories tend to be open, drawn from adjacent montane chaparral species, or lacking. Above the elevation of maximum precipitation, with growing seasons curtailed by winter snow accumulations.

Subalpine Conifer Forest

Conifer forests and associated clearings of highest elevations of tree establishment. This type occurs in areas where substantial snowpack accumulation and cold temperatures limit the growing season to three months or less.

Alpine Boulder and Rock Field

Fell-fields, talus slopes, and meadows found above forest line. Favorable sites may develop continuous turf, but in most areas plants are tucked between large nurse rocks that provide protection from harsh winter conditions.

Alpine Dwarf Scrub

Compact, woody subshrubs above forest line, adapted to short growing seasons resulting from snow accumulation or harsh winter winds.

GENERAL CLASSIFICATION OF INLAND AQUATIC SYSTEMS[4]

(Refer to map on page 211)

Sacramento-San Joaquin Province

Standing Ephemeral Waters

These waters are pools or playa lakes that dry up each year. Floodplain pools are shallow and result from flooding rivers. Vernal pools are very shallow and result from rainfall that fills depressions in impermeable claypan or volcanic soils. Rock outcrop pools are perched on sandstone outcrops. Alpine pools seasonally fill with snowmelt or rain water. Playa lakes are large, shallow and alkaline, created in valleys with no outflows.

Standing Permanent Fishless Waters

These waters do not dry up completely and, historically, had no fish. Many now contain introduced fish. Alpine lakes are formed by glacial action. Perennial volcanic pools, caldera lakes and saline ponds and lakes were formed by ancient volcanic activities. Dystrophic ponds/lakes are shallow, highly acidic and have boggy edges. Valley marshes (i.e., tule marsh) were found extensively on the valley floor but are now largely dewatered and developed.

Standing Permanent Waters with Fish

These waters do not dry up and have historically had fish in them. They include the eutrophic Clear Lake (Lake County), shallow alkaline lakes (i.e., Goose Lake), spring-

fed lakes (Big Lake, Shasta County) and dewatered, basin lakes (i.e., Tulare Lake). Usually these lakes support species that are found nowhere else and once supported species that are now extinct. Coastal lagoons, slough, oxbows and backwaters of rivers are also in this category.

Ephemeral Streams

These waters are flowing and dry up each year. Alpine snowmelt streams only exist while the snow is melting. Conifer forest snowmelt streams may last longer due to seepage from adjacent wetlands. Foothill/valley streams are fed by rainfall and are important spawning areas for Pacific tree frogs and newts.

Permanent Fishless Streams

These waters are flowing and do not dry up completely. Historically they had no fish, but now often contain introduced fish. They are found in the Goose Lake, Pit River, Central Valley, Clear Lake, and North Central Coast drainage. They are generally too small or steep to be accessible to fishes. All, except the glacial melt stream, may host many invertebrate and amphibian species.

Permanent Streams with Fish

These waters are flowing and do not dry up completely. They have historically had fish. Stream gradients may be low to high; flow rates, temperatures and clarity may vary also. The lower reaches may be dry in the summer but are important spawning habitats during wet periods. The cold streams with deep pools provide anadromous (steelhead trout and salmon) fish habitats. Substrate type determines which species are present.

Klamath and North Coast Province

Standing Ephemeral Waters

These waters are ponds that dry up each year. Dune ponds are formed by standing water among or behind coastal sand dunes. Alpine ponds hold snowmelt and rain runoff. The coastal ponds in the Franciscan melange formation that hold waters most of the year are sag ponds.

Standing Permanent Fishless Waters

Glacially formed alpine lakes are historically fishless waters that do not dry up completely. Most now have introduced fish populations which have changed the native species' composition considerably.

Standing Permanent Waters with Fish

These waters do not dry up and have historically had fish in them. Dune ponds are isolated in dune areas and are typically covered with water lilies. Coastal lakes and lagoons are created when sandbars or dunes impound streams. Large shallow lakes (i.e., Tule Lake) in the upper Klamath basin have large populations of endemic species.

Ephemeral Streams

These waters are flowing and dry up each year. Alpine snowmelt streams exist only while the snow is melting. Storm course streams are generally high gradient and flow in response to heavy local precipitation.

Permanent Fishless Streams

These waters are flowing, do not dry up completely and historically had no fish. Coastal headwaters and second and third order streams are usually too small or too steep for fish, but provide habitat for invertebrates and amphibians.

Permanent Streams with Fishes

These waters are flowing, and do not dry up completely. They have historically had fish. Stream gradients may be low to high; flow rates, temperatures and clarity may vary also. The lower reaches of some cold water tributaries may be warm (>25°C) in the summer and provide spawning habitat for endemic species. The cold streams with deep

pools provide anadromous fish habitats. Coastal streams of all sizes are inhabited by anadromous fish.

Great Basin Province

Standing Ephemeral Waters

These waters are pools or playa lakes that dry up each year. Alkali playa lakes are shallow lakes in isolated desert basins. Shallow mountain pools in meadow area either dry up or freeze solidly annually. Pools that form from seasonal rainfall or snowmelt in hardpan areas are Great Basin scrub pools. Rock pools form in natural holes in rock.

Standing Permanent Fishless Waters

These waters do not dry up completely and historically had no fish. Alpine lakes are small, isolated and oligotrophic (nutrient poor). Desert pools and ponds are fed by isolated springs in desert or scrub areas. Desert lakes include large terminal lakes (Mono and Alkaline lakes), which host unique invertebrate fauna.

Standing Permanent Waters with Fishes

These waters do not dry up and have historically had fish in them. Large alpine lakes (i.e., Lake Tahoe), terminal alkaline lakes (Honey and Eagle lakes) and desert springs and marshes make up this category. Desert springs are extreme habitats with small, isolated fish populations (i.e., Owens and Amargosa pupfish). Desert marshes, like Cottonball Marsh, are fed by flood waters and are an even more extreme habitat.

Ephemeral Streams

These waters cease flowing and dry up each year. Alpine, conifer forest and Great Basin scrub snowmelt streams only run while there is snowmelt. Desert washes carry flood flows from rain or snowmelt.

Permanent Fishless Streams

These waters are flowing and do not dry up completely. They have historically not had fish. A variety of high gradient (exposed alpine, conifer forest, glacial melts and spring) alpine streams comprise this category. The water source for many small desert streams is mountain runoff. Many alpine and desert streams support introduced fishes.

Permanent Streams with Fishes

These waters are flowing, and do not dry up completely. They have historically had fish. Stream gradients may be low to high; flow rates, temperatures and clarity may vary also. Cold water streams historically supported many indigenous trouts (Lahontan and Paiute cutthroats). Low gradient, warmer streams that are close to lakes will contain tui chub and dace. Desert streams contain many rare, endemic species (i.e., Salt Creek pupfish, Owens pupfish, and Mohave tui chub).

Colorado River Province

Standing Ephemeral Waters

These waters are pools or lakes that dry up each year. Alkali desert playa lakes form in desert basins. The Salton Sink is a large playa lake that is now occupied by the Salton Sea. Seasonal floodplain lakes and ponds form in shallow depressions along the Colorado River.

Standing Permanent Fishless Waters

These spring-fed waters do not dry up completely and historically had no fish. Desert springs have many rare, endemic species due to their isolation.

Standing Permanent Waters with Fishes

These waters do not dry up and historically had fish in them. The floodplain pools created by meanders of the Colorado River contain endemic fauna that arrives there with seasonal floods.

Ephemeral Streams
These waters are flowing and dry up each year. Desert streams are moderate to low-gradient and carry flood flows from rain or snowmelting.

Permanent Fishless Streams
These waters are flowing do not dry up completely. They have historically had no fish. The only perennial, fishless, desert stream is Paiute Creek.

Permanent Streams with Fishes
These waters are flowing, do not dry up completely and have historically had fish. The Colorado River main channel has many endangered endemic fishes (razorback sucker, Colorado squawfish and bonytail). The backwater sloughs and marshes are important nursery areas and are the presumed home of the endangered desert pupfish.

Southern California Coastal Province

Standing Ephemeral Waters
These waters are pools or ponds that dry up each year. Vernal and San Diego Mesa duripan and claypan pools contain endemic species. Sag ponds are formed in depressions caused during fault (mainly the San Andreas) shifts. Dune lakes and ponds are created when sand dunes impound streams or washes.

Standing Permanent Waters with Fishes
These waters do not dry up and historically had fish in them. Perennial playa lakes occur in isolated desert basins. Coastal lagoons are formed by sand bars at the mouth of streams.

Ephemeral Streams
These waters are storm course streams that form in response to heavy rains. They are dry the rest of the year.

Permanent Fishless Streams
These flowing waters do not dry up completely and do not have fish. The streams of this type that remains fishless in this province are on the Channel Islands. They are too isolated to have native or introduced species.

Permanent Streams with Fishes
These waters are flowing, do not dry up completely and historically had fish. Coastal streams with cold water provide habitat for steelhead trout and other endemic species. The small, warm, coastal streams provide habitat for stickleback. Warm to cool water streams in the Los Angeles Basin support several threatened native fish species plus introduced trout.

Artificial Habitats

Standing Ephemeral Waters
These waters dry up during the year and were created by humans for mainly agricultural purposes. Rice paddies, wildlife refuges (for waterfowl), drainage and evaporation ponds, and irrigated land support many species of invertebrates, fish, amphibians and reptiles.

Standing Permanent Waters
These waters do not dry up and were created by humans for various purposes, mainly for holding water and flood control. Most ponds and reservoirs have been stocked with non-native fish species. Pit lakes are inadvertently formed when gravel and rock quarry excavation sites are flooded.

Ephemeral Streams
These streams dry up or can be "shut off." Many have introduced and native species that are inadvertently diverted into them. Aqueducts, drainage ditches, irrigation

ditches and flood control canals are included in this category.

Endnotes:

1. Terrestrial section reprinted, following minor revision, with permission from Smith, Skinner, M.W., and B.M. Pavlik (Eds.) 1994 *Inventory of Rare and Endangered Vascular Plant of California.* Special Publication No. 1 (5th Edition) California Native Plant Society, Sacramento, CA 95814.

2. Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California.* Natural Heritage Program, California Department of Fish and Game, Sacramento, California 150 p

3. Moyle, P.B. and J.P. Ellison (1991). A *Conservation-oriented Classification System for the Inland Waters of California.* California Fish and Game. California Department of Fish and Game 77(4):161-180. Sacramento, California.

4. This information is derived from the classification system presented in: Moyle. P.B. and J.P. Ellison. (1991.) A Conservation-oriented Classification System for the Inland Waters of California. California Fish and Game 77(4) 161-180.

APPENDIX G

Glossary of Abbreviations and Terms

ABDSP	Anza Borrego Desert State Park
ACEC	Area of Critical Environmental Concern (a BLM designation)
BLM	US Bureau of Land Management
BOR	US Bureau of Reclamation
BRD	Biological Resources Division of the U.S. Geological Survey
CALFED	A cooperative effort of 15 state and federal agencies with regulatory and management responsibilities in the San Francisco Bay/ San Joaquin River Bay-Delta to develop a long-term plan to restore ecosystem health and improve water management for beneficial uses of the Bay-Delta system
CALTRANS	California Department of Transportation
CA- E	State listed as endangered
CA- R	State listed as rare
CA- T	State listed as threatened
CCR	California Code of Regulations (Title 14)
CDF	California Department of Forestry and Fire Protection
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CINWCC	California Interagency Noxious Weed Coordination Committee
CNPS	California Native Plant Society
COE	United States Army Corps of Engineers
Coleman NFH	Coleman National Fish Hatchery
Covered Species	For NCCPs, covered species are those species within a plan area which will be adequately conserved through implementation of the NCCP. For HCPs permitted through Section 2081 of CESA, covered species are those species within a plan area that are subject to Incidental Take Authorizations under which impacts are fully mitigated.
CPNA	Carrizo Plain Natural Area
CSU	California State University
CVPCP	Central Valley Project Conservation Program
CVPIA	Central Valley Project Improvement Act
DFG	California Department of Fish and Game
DPR	California Department of Parks and Recreation
DOD	Department of Defense
EBRPD	East Bay Regional Parks District
EIR	Environmental Impact Report
EIS	Federal Environmental Impact Statement
ELPF	Environmental License Plate Fund
FED-E	Federally listed as endangered
FED-PE	Federally proposed for listing as endangered
FED-PT	Federally proposed for listing as threatened
FED-T	Federally listed as threatened
FGC	California Fish and Game Commission
Fully Protected	A Fish and Game Code designation for species that may not be taken or possessed at any time, except that the FGC may authorize the collecting of such species for necessary scientific research.
GIS	Geographical Information Systems

GPS	Global Positioning System
HCP	Habitat Conservation Plan, a Section 10a permit under federal Endangered Species Act
Incidental take	Take of a species that occurs during an otherwise lawful activity, such as construction of a development project. The DFG may authorize such take under an incidental take permit if impacts to the species are minimized and fully mitigated, the mitigation measures required by the permit are roughly proportional to the impact on the species, and the measures maintain the permit applicant's objectives to the greatest extent possible.
LADWP	Los Angeles Department of Water and Power
MHCP	Multiple Habitat Conservation Program
MOU	Memorandum of Understanding
MSCP	Multiple Species Conservation Program
MSHCP	Multiple Species Habitat Conservation Plan
NCCP	Natural Community Conservation Planning
NMFS	National Marine Fisheries Service
NPS	National Park Service
occurrence	One or more populations of a given species or subspecies in an area
OHV	Off-highway vehicles
pelage	The hair, fur, wool, or other soft covering of a mammal.
pelagic	Living or growing near the surface of the ocean, away from land.
PG&E	Pacific Gas and Electric
ppt	Parts per thousand
precinct	The area occupied by an adult kangaroo rat that contains its burrow mound and surrounding area in which it forages.
prostrate	Lying flat on the ground.
SCB	Southern California Blight
Section 6	Section 6 of the federal Endangered Species Act authorizes USFWS to enter into cooperative agreements with the States for the conservation of endangered species. Funds to support this work are administered by USFWS and provided to the States.
SFWD	San Francisco Water Department
SWRCB	State Water Resources Control Board
Take	As defined in the Section 86 of California Fish and Game code is "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." As defined in Section 3.(18) of the federal Endangered Species Act of 1973 is "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in ay such conduct."
TNC	The Nature Conservancy
UC	University of California
UNBER	Upper Newport Bay Ecological Reserve
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WCB	Wildlife Conservation Board

APPENDIX H.

Contact for More Information on California's Threatened and Endangered

American Fisheries Society – California-Nevada Chapter
4180 Treat Boulevard, Suite N
Concord, CA 94518

Bureau of Land Management (BLM)
California State Office
2800 Cottage Way
Room 1928W
Sacramento, CA 95825
(916) 978-4400
http://www.ca.blm.gov/caso

Bureau of Reclamation (BOR)
Mid-Pacific Region
2800 Cottage Way
Sacramento CA 95825-1898
(916) 978-5100
http://www.mp.usbr.gov

California Biodiversity Council
1416 Ninth Street, Room 1311
Sacramento, CA 95814
(916) 227-2661
http://ceres.ca.gov/biodiv

California Department of Forestry and Fire Protection (CDF)
1416 Ninth Street
Sacramento, CA 95814
(916) 653-5121
http://www.fire.ca.gov

California Department of Parks and Recreation (DPR)
1416 Ninth Street
Sacramento, CA 95814
(916) 653-6995
http://parks.ca.gov

California Department of Water Resources (DWR)
1416 Ninth Street
Sacramento, CA 95814
(916) 653-5791
FAX (916) 653-5028
http://www.dwr.water.ca.gov

California Environmental Resources Evaluation System (CERES)
1416 Ninth Street, Room 1311
Sacramento, CA 95814
(916) 654-9990
http://www.ceres.ca.gov

California Native Plant Society (CNPS)
1722 J Street, Suite 17
Sacramento, CA 95814
(916) 447-CNPS

Central Valley Habitat Joint Venture
2233 Watt Avenue, Suite 275
Sacramento, CA 95825
(916) 979-2085

Environmental Protection Agency (EPA)
Region 9 Office
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-1500
http://www.epa.gov/region9

National Audubon Society
555 Audubon Place
Sacramento, CA 95825
(916) 481-5440

National Marine Fisheries Service (NMFS)
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95825
(707) 575-6059
http://www.nmfs.gov

National Marine Fisheries Service (NMFS)
501 W. Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213
(562) 980-4015
http://www.nmfs.gov

Natural Resources Conservation Service (NRCS)
California State Office
430 G Street, #4164
Davis, CA 95616-4164
(530) 792-5600
http://www.ca.nrcs.usda.gov

Point Reyes Bird Observatory
4990 Shoreline Highway
Stinson Beach, CA 94970
(415) 868-1221
http://www.prbo.org

Riparian Habitat Joint Venture
Department of Fish and Game
1416 Ninth Street
Sacramento, CA 95814
(858) 467-4208

Sierra Club
1414 K Street
Sacramento, CA 95814
(916) 557-1100
FAX (916) 557-9669

State Water Resources Control Board (SWRCB)
901 "P" Street
Sacramento, California 95814
(916) 657-1247
http://www.swrcb.ca.gov

The Nature Conservancy (TNC)
201 Mission Street, 4th Floor
San Francisco, CA 94105
(415) 777-0487

The Wildlife Society – Western Section
PO Box 21638
Oakland, CA 94620-1638
(510) 465-4962

U.S. Fish and Wildlife Service (USFWS)
Arcata Field Office
1125 16th Street, Room 209
Arcata, CA 95521-5582
(707) 822-7201
FAX (707) 822-8411
http://www.r1.fws.gov

U.S. Fish and Wildlife Service (USFWS)
Klamath Field Office
6610 Washburn Way
Klamath Falls, OR 97603
(541) 885-8481
FAX (541) 885-7837
http://www.r1.fws.gov

U.S. Fish and Wildlife Service (USFWS)
Sacramento Field Office
2800 Cottage Way, W-2605
Sacramento, CA 95825
(916) 414-6600
FAX (916) 979-2744
http://www.r1.fws.gov

U.S. Fish and Wildlife Service (USFWS)
Ventura Field Office
2493 Portola Road, Suite B
Ventura, CA 93003
(805) 644-1766
FAX (805) 644-3958
http://www.r1.fws.gov

U.S. Fish and Wildlife Service (USFWS)
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, CA 92008
(760) 431-9440
FAX (760) 431-9624
http://www.r1.fws.gov

U.S. Forest Service (USFS)
Pacific Southwest Region Office
630 Sansome Street
San Francisco, CA 94111
(415) 705-2884
http://www.psw.fs.fed.us

U. S. Forest Service Pacific Southwest Region
1323 Club Drive
Vallejo, CA 94592
(707) 562-8737
http://www.r5.fs.fed.us

USGS Biological Resources Division (BRD)
Western Ecological Research Center
California State University
6000 J Street, Placer Hall
Sacramento, CA 95819-6129
(916) 278-3027
FAX (916) 278-3101
http://www.werc.usgs.gov

APPENDIX I

Acknowledgments

Many dedicated Department of Fish and Game staff contributed information and text to this report. The following individuals are primarily responsible for ***The Status of Rare, Threatened, and Endangered Animals and Plants of California, Annual Report for 2000***:

Plant Accounts:

Roxanne Bittman, Wildlife and Habitat Data Analysis Branch
Gene Cooley, San Joaquin Valley and Southern Sierra Region
James Dice, Southern California and Eastern Sierra Region
Diana Hickson, Habitat Conservation Planning Branch
Deborah Hillyard, Central Coast Region
Julie Horenstein, Sacramento Valley and Central Sierra Region
Diane Ikeda, Habitat Conservation Planning Branch
Rich Lis, Northern California and North Coast Region
Craig Martz, Northern California and North Coast Region
Mary Meyer, South Coast Region
Kevin Shaffer, Wildlife and Habitat Data Analysis Branch

Invertebrate, Fish, Amphibian, and Reptile Accounts:

Phil Baker and Central Coast Region
Betsy Bolster, Habitat Conservation Planning Branch
John Brode, Fisheries Programs Branch
Chuck Knutson, Fisheries Programs Branch
Rebecca Miller, Habitat Conservation Planning Branch
Katie Perry, Native Anadromous Fish and Watershed Branch
Sharon Shiba, Fisheries Programs Branch
Dale Sweetnam, Central Valley Bay Delta Branch

Bird and Mammal Accounts:

Betsy Bolster, Habitat Conservation Planning Branch
Esther Burkett, Habitat Conservation Planning Branch
Gordon Gould, Habitat Conservation Planning Branch
John Gustafson, Habitat Conservation Planning Branch
Ron Jurek, Habitat Conservation Planning Branch
Bob Read, Marine Region
Ron Schlorff, Habitat Conservation Planning Branch
Steve Torres, Wildlife Programs Branch

Production, Format, and Layout:

Felix Arteaga, Lands and Facilities Branch
Alexia Retallack, Conservation Education and Enforcement Branch
Kevin Shaffer, Wildlife and Habitat Data Analysis Branch

Cover Illustration: