

## INTRODUCTION



*The Mission of the Department of Fish and Game is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public.*

### Protection and Management of California Species

The Department of Fish and Game (DFG) has statewide responsibility for the conservation and recovery of California's listed rare, threatened, and endangered plants and animals. Department staff carry out research, management and monitoring programs, participate in recovery planning, and work cooperatively with the federal government, other State and local agencies, landowners, conservation groups, and the public in various ways to further conservation. The Department also focuses on conserving assemblages of species and habitats on a landscape level through locally-based cooperative conservation planning. Department activities today reflect a long history of conservation planning in California and are framed by California and federal law.

### State Law

Management of California's wildlife and habitats predates California statehood. The State of California enacted its first law specifically dealing with fish and game in 1851, two years after statehood. This law concerned the right to take oysters and the protection of property rights of persons planting oysters. In the following year, California enacted the first law related to game species, protecting elk, antelope, deer, quail, mallard, and wood ducks for six months of each year. The State also passed a law protecting salmon runs, followed by laws creating closed seasons for trout and the State's first game refuge, Lake Merritt in the City of Oakland.

In 1870, the Board of Fish Commissioners, the forerunner of the Fish and Game Commission, was established "to provide for the restoration and preservation" of fish in California waters. The responsibilities of the Board of Fish Commissioners were expanded to include game species in 1878. In the late 1800s and early 1900s, the administration of fish and game laws was strengthened and expanded: hunting limits were set for deer, quail, ducks, and doves, and night hunting was banned. In 1907, the first hunting licenses were issued; proceeds from the license sale and from fines were credited to the Fish and Game Preservation Fund. Recognition of the importance of wildlife conservation continued to grow with passage of additional legislation such as a law to protect the sea otter, enacted in 1913.

In 1927, the Division of Fish and Game was created within the Department of Natural Resources.

Its legal mandates was codified in 1937 when the Legislature enacted the Fish and Game Code. During the 1930s and 1940s, the role of the Division of Fish and Game expanded to include restoration of wildlife habitat and fish restoration and management. These programs were funded in part through grants from the federal government. The Wildlife Conservation Board was established to administer the capital acquisition and development program for conservation and recreational uses of fish and wildlife. The Division of Fish and Game was elevated to Department status in 1951. With the passage of the federal Fish and Wildlife Coordination Act in 1958, full consideration of fish and wildlife resources and formal coordination between the Department and the federal government was required for federal projects planned in California. The first statewide master plan for fish and wildlife in the United States, the California Fish and Wildlife Plan, was completed in 1965. The report created an inventory of wildlife, inland fish, salmon and steelhead, and marine resources. The report described amount of habitat and status of species by county, described land and water resources, and human use of the resources.

The early laws and policies defined and strengthened the role of the Department in the conservation, protection, and management of wildlife and native plants and habitat necessary for their survival. The Department holds these resources in trust for the people of California. That legal framework has been further refined with revisions to the Fish and Game Code and the passage of several key pieces of legislation. Summarized below, these include the California Endangered Species Act (CESA), the Native Plant Protection Act (NPPA), the California Environmental Quality Act (CEQA), the Natural Community Conservation Planning Act (NCCPA), and the creation of the list of Fully Protected Species.



**Endangered Species Act of 1970.** With passage of the Endangered Species Act of 1970, California became the first state to prohibit the importation, take, possession, and sale of endangered and rare species. This act expressed the Legislature's concern over the decline of wildlife species in California, defined rare and endangered wildlife, and gave authority to the Fish and Game Commission to designate animals as either rare or endangered.

**California Environmental Quality Act.** The California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 *et seq.*) was enacted in 1970. It is California's broadest environmental law and was modeled after the National Environmental Policy Act (NEPA). The basic goal of CEQA is to develop and maintain a high-quality environment now and in the future. The specific goals of CEQA for public agencies are to document and consider the

significant environmental effects of their actions and, where feasible, either avoid those significant environmental effects, or to reduce those significant environmental effects by implementing feasible alternatives or mitigation measures.

CEQA helps guide the Department in issuance of permits and approval of projects that may have a significant impact on the environment. In its role as a Trustee Agency, the DFG must be notified of projects involving fish and wildlife of the state, rare and endangered native plants, wildlife areas, and ecological reserves. Although the Department cannot approve or disapprove a project as a Trustee Agency, public agencies are required to consult with the DFG about project impacts and proposed mitigation measures. Changes to CEQA in 1983 added definitions for rare and endangered plants and animals along with language providing for their protection. CEQA can be found online at

[http://ceres.ca.gov/topic/env\\_law/ceqa/](http://ceres.ca.gov/topic/env_law/ceqa/).

**Native Plant Protection Act of 1977.** In 1977, the Legislature formally recognized the status of rare or endangered plants with the passage of the Native Plant Protection Act (Fish and Game Code, Section 1900 *et seq.*). The NPPA directed the DFG to preserve, protect, and enhance rare and endangered plants in California. The NPPA also authorized the Fish and Game Commission to designate native plants as “rare” or “endangered” and to require permits for collecting, transporting, or selling such plants. The Commission listed 24 plants in 1978.



**California Endangered Species Act of 1984** (Fish and Game Code, Section 2050 *et seq.*). In 1984, two Assembly bills (AB 3309 and AB 3270) replaced the 1970 Endangered Species Act and became known as the California Endangered Species Act. The full text of CESA can be found at [http://ceres.ca.gov/env\\_law/cesa/stat/](http://ceres.ca.gov/env_law/cesa/stat/). The definitions and procedures in CESA closely parallel those of the Federal Endangered Species Act. Highlights include:

- A policy that the State to conserve, protect, restore, and enhance any endangered or threatened species and its habitat.
- A policy “that State agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species...”
- A requirement that State lead agencies consult with the Department of Fish and Game whenever a project might impact a listed species. The DFG and State lead agencies are then required to develop reasonable and prudent alternatives consistent with conserving the species.
- A requirement that no person shall take listed species without express authorization from the DFG.
- A requirement that the Commission adopt guidelines for individuals seeking to petition the Commission to add a species to the state list of threatened and endangered species. CESA outlines a petition process; describes the information that must be provided in the petition; and describes the procedure DFG must follow to evaluate the petition and make its recommendation to the Commission whether the petitioned action may be warranted. The petition format and the criteria for listing are described in the California Code of Regulations, Title 14, Section 670.1. The California Code of Regulations is available online at <http://ccr.oal.ca.gov/>.
- The requirement of an annual report summarizing the status of all State-listed endangered, threatened, and candidate species, and the time frames for five-year status reviews. The timeline for the “annual report” has now been lengthened by the Legislature to three years.

CESA requires DFG to prepare a report summarizing the status of all State-listed endangered, threatened, and candidate species for the Commission, the Legislature, and the Governor. This current report describes California’s listed and candidate species, currently at 79 animals and 221 plants. The State lists of rare plants and threatened and endangered plants and animals are updated during the year as changes are made by the Commission. The current lists are available from DFG, Wildlife and Habitat Data

Three major bills were enacted in 1997 to amend CESA:

- Senate Bill 879 authorized the Department to issue permits for take of state-listed species that occurs during otherwise lawful activities, such as development projects. These permits are called incidental take permits, because the take is incidental to the activity. The Department adopted regulations effective December of 1998 addressing incidental take permits (California Code of Regulations Title 14, Div. 1, Sections 783.0-783.8).
- Senate Bill 231 allows the development of locally designed voluntary programs to avoid and minimize take of listed species during agricultural activities and to encourage retention of wildlife habitat on farms and ranches. Take of listed species occurring under the voluntary programs would not require a permit from the Department. This bill also authorized accidental take of listed species resulting from inadvertent or ordinary negligent acts that occur on a farm or ranch during routine and ongoing agricultural activities. The Department adopted regulations effective December 1998 addressing incidental and accidental take during agricultural activities (California Code of Regulations, Title 14, Div. 1, Sections 786.0-786.6).
- Assembly Bill 21 waived the requirement for an incidental take permit from the Department for projects consistent with CESA that have obtained federal incidental take authorization under Sections 7 or 10(a) of the Federal Endangered Species Act. This exemption applies only to species that are listed under both the state and federal endangered species acts.
- The sections of CESA that required state lead agencies to consult with the Department regarding projects that could result in incidental take were automatically repealed on January 1, 1999. The repeal means that state agencies can no longer obtain authorization to take listed species through consultations with the Department distinct from the incidental take process.



**Natural Community Conservation Planning Act.**  
(Fish and Game Code, Sections 2800-2835).

Assembly Bill 2172, known as the Natural Community Conservation Planning Act, became effective in 1991. The Act recognized the significance of the conservation and management of entire natural communities. Natural community conservation planning has become an important tool in conserving natural diversity while permitting reasonable use of natural resources for economic development.

The focus of the initial Natural Community Conservation Planning effort was the coastal sage

scrub habitat of Southern California, home to the California gnatcatcher and approximately 100 other sensitive species. This much-fragmented habitat is scattered over more than 6,000 square miles and encompasses large parts of Orange, San Diego, and Riverside Counties, and smaller portions of Los Angeles and San Bernardino Counties. Fifty-nine local government jurisdictions, scores of landowners from across these counties, federal wildlife authorities, and the environmental community are actively participating in the program. The planning effort has now expanded throughout the State. Working with landowners,

environmental organizations, and other interested parties, the local agency oversees the numerous activities that compose the development of a conservation plan. The DFG and the USFWS provide the necessary support, direction, and guidance to NCCP participants.

**Fully Protected Species.** The California Legislature took action as early as 1873 to give full protection to some species of wildlife. The bighorn sheep was the first animal to be protected from hunting and trapping and, over the years, the Legislature has periodically given full protection to other animals. The original Fully Protected Species list was established in 1933 as part of the Fish and Game Code to protect certain mammals against take by hunting. In 1957, marine mammals and some birds were listed as fully protected with the intent to manage the take of species that appeared in need of special protection under the law. In 1971, Sections 3511, 4700, and 5050 of the Fish and Game Code were amended to give the Department limited authority to issue permits to take fully protected species. The only activities permitted were the "collecting of such species for necessary scientific research," and for birds, "the live capture and relocation of such species pursuant to a permit for the protection of livestock." Permits for research on California condors, sea otters, and bighorn sheep may be prepared by the Department only after approval by the Commission (California Code of Regulations, Title 14, Section 670.7(f)). Nelson bighorn sheep may be taken for regulated sport hunting (Fish and Game Code, Section 4902).

Amendments to the Fish and Game Code took effect on January 1, 2004 and require a public review process before DFG may issue permits to take fully protected species. The public has 30 days after notification is published in the California Regulatory Notice Register to provide any relevant information and comments on the proposed authorization. The Code also allows DFG to authorize taking of species not only for necessary scientific research, but also for efforts to recover fully protected, threatened, or endangered species. The amendments include a clarification that scientific research does not include actions taken as part of specified mitigation for a project.



**Species of Special Concern.** Species in this report do not comprise all California species that are considered to be at risk. "Species of Special Concern" (SSC) are animals that are not listed under State law. The designation is intended to focus attention on the species that require special management consideration and to help avert the need for listing under federal and State endangered species laws. This designation is also intended to stimulate collection of additional information on the biology, distribution, and status of poorly known species, and focus research and management attention on them.

Species of Special Concern share one or more of the following criteria:

- They occur in small, isolated populations or in fragmented habitat, and are threatened by further isolation and population reduction.
- They are rare or uncommon species and show marked population declines.
- They depend on a habitat that has shown a substantial reduction in size over historic levels.
- They occur only in or adjacent to an area where habitat is being converted to land uses incompatible with the animal's survival.

- The species have few California records, or occurred here historically, but for which there are no recent records.
- They occur largely on public lands, but where current management practices are inconsistent with the animal's long-term survival.

## Federal Law



The federal Endangered Species Act (ESA) represents the culmination of a long history of federal involvement in the management and protection of wildlife that began with passage of the Lacey Act in 1900. The Lacey Act authorized the federal government to intervene in states' management of wildlife species and was a direct response to the decimation of the passenger pigeon in the eastern U.S. (The passenger pigeon is now extinct.) The Lacey Act was followed by passage of the Migratory Bird Treaty Act of 1918, the Migratory Bird Conservation Act of 1929, and the Fish and Wildlife Conservation Act of 1934. The Migratory Bird Conservation Act established a commission to oversee acquisition of land necessary for the conservation of migratory birds. The Fish and Wildlife Conservation Act ensured that fish and wildlife resources receive consideration equal to that given other values while planning water development projects.

Increasing public awareness in endangered species protection led to establishment of the Committee on Rare and Endangered Wildlife Species in 1964. The committee published the "Redbook" later that year. The Redbook comprised the first federal list of fish and wildlife believed to be in danger of extinction. Congress subsequently passed the Endangered Species Preservation Act in 1966. This act directed federal agencies to preserve the habitats of native vertebrate species found to be threatened with extinction. The Act provided only limited protection of species so designated listed insofar as protection was consistent with the primary purposes for which an agency was established. One important outcome of this Act was the creation of the National Wildlife Refuge System. Habitat acquired to protect endangered species became part of the refuge system.

In 1969, the Endangered Species Conservation Act was passed to provide additional protection to species in danger of "worldwide extinction". This new law protected vertebrate, as well as invertebrate species. Congress also extended the prohibitions of the Lacey Act to cover interstate commerce involving reptiles, amphibians, and certain invertebrates. Import of such species was prohibited, as was their subsequent sale within the U.S. The Endangered Species Conservation Act also called for an international ministerial meeting to adopt a convention on the conservation of endangered species. A conference in Washington, D.C. in 1973 led to the signing of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which restricted international commerce in plant and animal species threatened with extinction. Later that year, the Endangered Species Act of 1973 was passed.

The Endangered Species Act (ESA) combined and considerably strengthened the provisions of previous endangered species laws. The ESA eliminated distinctions between domestic and foreign species threatened with extinction. It also lowered the threshold of endangerment to include species that were

threatened in a significant portion of their range rather than only on a worldwide level. Several provisions of the ESA are intrinsically related to the protection and management of state-listed species in California.

- **Section 3.** Categories of "endangered" and "threatened" were defined. Plants and all classes of invertebrates became eligible for protection, as they are under CITES. The California Endangered Species Act designations of "threatened" and "endangered" largely follow those of the federal Act. Many species listed under the ESA are also listed by California. A complete list of federal threatened and endangered species that occur in California is also available at <http://endangered.fws.gov/wildlife.html#Species>.
- **Section 5.** Authority was provided to acquire land for listed animals and for plants listed under CITES. The Department is similarly authorized to acquire land for the protection and management of listed plants and animals. Federal funds often augment acquisition by the State.
- **Section 6.** Matching federal funds became available for States with cooperative agreements. The Department uses these funds to conduct research and implement management activities that benefit listed species.
- **Section 7.** All federal agencies were required to undertake programs for the conservation of endangered and threatened species, and were prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its "critical habitat." The Department works closely with its federal counterparts in the U.S. Fish and Wildlife Service to ensure that species listed under federal law are not adversely affected by research or management projects.
- **Section 9.** Prohibitions were applied to activities that could jeopardize any listed animal species. In 1982, the ESA was amended to prohibit removing listed plants from land under federal jurisdiction. And in 1988, protection for endangered plants was extended to include destruction on federal land and other activities if they violate State law. California law closely parallels the federal Act, and also prohibits activities that could impact state-listed threatened and endangered plants.

Ultimately, the federal ESA and the California Endangered Species Act attempt to bring populations of listed species to self-sustaining levels so that protection under the law is no longer needed.



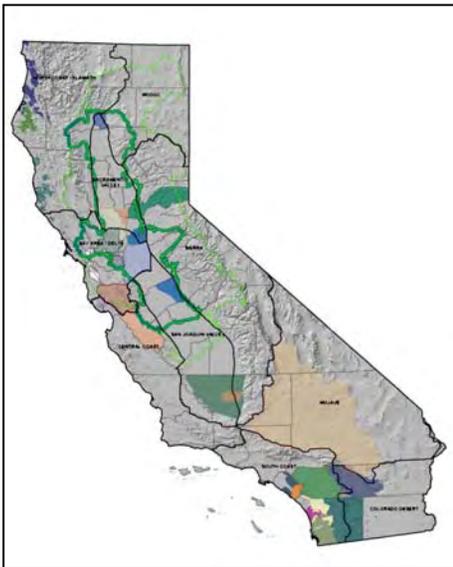
## PLANNING FOR CONSERVATION AND RECOVERY



Statewide responsibilities for conservation and recovery of California's listed species of rare, threatened, and endangered plants and animals are spread among the Department's staff in headquarters and in regions (Appendix 2). Department biologists maintain information on plants and animals of special concern, and plan for conservation of these species in cooperative conservation plans and other conservation programs.

A variety of funding sources is available to the Department to promote recovery of threatened and endangered species. Funding sources include the California Endangered Species Tax Check-Off fund, Federal Endangered Species Act Section 6 Funds appropriated by Congress and administered by the USFWS, the Environmental License Plate Fund, the Tobacco Tax and Health Initiative (Proposition 99), mitigation funds, funding under the CALFED Bay-Delta Program, the Central Valley Project Improvement Act (CVPIA), and other grant sources, for example, the federal Partnerships for Wildlife Act funds.

### Natural Community Conservation Planning (NCCP)



The Natural Community Conservation Planning Act was enacted in 1991. The purpose of natural community conservation planning is to provide for the conservation of biological diversity by protecting biological communities at the ecosystem and landscape scale. Conservation of biological diversity includes protecting threatened, endangered, sensitive, and more common species, natural communities, and the ecological processes necessary to sustain ecosystems over time. A natural community conservation plan (NCCP) identifies and provides for measures necessary to conserve and manage natural biological diversity within the geographic area of the plan, while allowing appropriate and compatible economic development, growth, and other human uses. Working with landowners, environmental organizations (for example, the California Native Plant Society and Endangered Habitats League), and other interested parties (for example, the Building Industry Association, outdoor enthusiasts such as horse riding groups, and local land trusts), a local agency or landowner oversees the

numerous activities that compose the development of an NCCP. The DFG and USFWS (and NOAA Fisheries, where appropriate) provide the necessary support, direction, and guidance to NCCP participants. Additional information on NCCP planning is available on the web at [www.dfg.ca.gov/nccp](http://www.dfg.ca.gov/nccp).

## NCCP Act Revamped

Changes were made to the NCCP Act (Fish and Game Code Section 2800 *et seq.*) in 2000, 2002, and 2003. The changes to the Act bolstered the standards for creation and approval of NCCPs and reflected the DFG's application of the NCCP Act through non-regulatory NCCP Guidelines. New emphasis and standards were added to address independent scientific input, planning agreements, public participation, species coverage, approval findings, statutory assurances, and grandfathering for plans underway prior to the enactment of the new legislation.

## Status of NCCP Plans

### Status of Southern California NCCP Plans

NCCP planning continues in Los Angeles, Orange, Riverside, and San Diego counties. For the purposes of NCCP, the southern California coastal sage scrub ecosystem was divided into ecologically based subregions, and further divided into subareas that match local government jurisdictions. Each subregion and subarea is creating its own NCCP. Significant progress was made during 2000-2003 on the following plans.



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**City of Chula Vista MSCP Subarea Plan.** The City of Chula Vista has completed a subarea plan under the Multiple Species Conservation Program (MSCP) of San Diego County. The subarea plan will preserve approximately 9,243 total acres, 4,993 acres within the City limits and an additional 4,250 acres in the unincorporated area of San Diego County. The City approved and adopted the subarea plan on May 13, 2003, which provides for the conservation of 86 species including the state-listed salt marsh bird's-beak, Otay tarplant, light-footed clapper rail, California least tern, and least Bell's vireo. State and federal permits are anticipated in 2004.



### **Coachella Valley Multiple Species Habitat Conservation Plan**

**(CVMSHCP).** The CVMSHCP covers the central portion of Riverside County which is the westernmost edge of the Sonoran Desert. The plan area covers 1.2 million acres, a diverse mixture of 27 desert and mountain natural communities, and proposes coverage for 27 species. State-listed species include desert tortoise, Coachella Valley fringe-toed lizard, desert pupfish, least Bell's vireo, southwestern willow flycatcher, and Peninsular bighorn sheep. Independent scientific advisors were convened to provide additional scientific guidance on the plan, and their report was released in April, 2001. The Coachella Valley Association of Governments has prepared an Administrative Review Draft which reflects the work of the local Scientific Advisory Committee, the Implementation Subcommittee, and the Project Advisory Group. After receiving comments from the local, state and federal agencies, a Public Review Draft and Draft EIR/EIS are scheduled for release in early 2004.



### **Orange County Southern Subregional Plan.**

The County and major landowners are preparing a subregional NCCP, a special area management plan, and master streambed alteration agreement. The plan encompasses 91,000 acres, with 57,000 acres of natural habitat including coastal sage scrub, chaparral, grassland, riparian, and oak woodlands. State-listed species covered by the plan include least Bell's vireo, southwestern willow flycatcher, and thread-leaved brodiaea. An update to the County's General Plan and Zoning Ordinance is also underway. A series of public workshops were held in 2002 and 2003 to provide the opportunity for public input on alternatives for the three planning efforts in southern Orange County.



### **Palos Verdes Peninsula Subregional Plan.**

The City of Rancho Palos Verdes NCCP encompasses 8,661 acres of which only 2,368 acres support natural vegetation. The City has addressed conservation of most of the coastal sage scrub habitat on the Palos Verdes Peninsula. With additional conservation of other habitats such as southern cactus scrub, grassland, and riparian scrub, the plan intends to cover 20 species. The plan addresses one state-listed species, Lyon's pentachaeta. A final plan is anticipated to be completed in 2004.



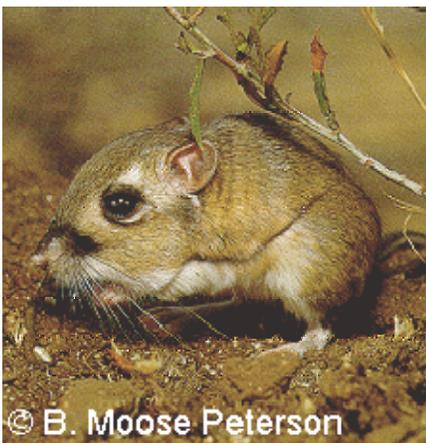
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**San Diego Joint Water Agencies (JWA) Subregional Plan.** The JWA NCCP describes how four water agencies in San Diego County will manage their lands to conserve natural habitats and species while continuing to provide their mandated water services. The plan addresses 5,673 acres of habitat. The subregional plan will serve as an umbrella document for the subarea plans of the water districts: Helix Water District, Padre Dam Municipal Water District, Sweetwater Authority, and Santa Fe Irrigation District. In July 2003, SB 572 was signed into law by the Governor, amending the NCCP Act to provide grandfathering coverage to the water agencies.



DFG File Photo

**San Diego Multiple Habitat Conservation Program.** The subregional plan for the northwestern portion of San Diego County (Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach and Vista) was approved by the San Diego Association of Governments Board of Directors on March 28, 2003. The subregional plan encompasses 29,962 acres of natural habitat, and provides conservation for 77 species. State-listed species covered by the plan include San Diego thorn-mint, Encinitas baccharis, Orcutt's spineflower, Belding's savannah sparrow, and Stephen's kangaroo rat. NCCP permits will be issued to participating cities upon completion and DFG approval of their individual subarea plans.



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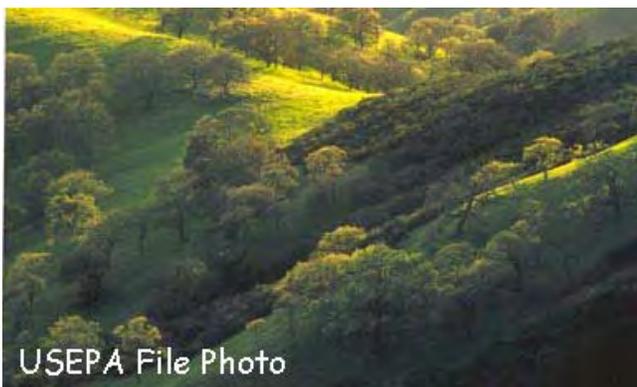
**San Diego North County MSCP Subarea Plan.** The County of San Diego is preparing the North County Subarea of the San Diego MSCP which will be amended into the MSCP. The subarea plan will include many of the 85 species covered in the existing MSCP plan but also some additional species -- the most notable being the Stephen's kangaroo rat which lives in grasslands and the San Diego fairy shrimp which inhabits vernal pools. Recent progress includes collection of additional biological information, completion of the science advisory process, habitat evaluation, and reserve design modeling.



**Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP).** Riverside County is taking a new approach to land use planning: simultaneously integrating creation of an NCCP with an update of the County General Plan and a transportation corridor plan. This approach allows for longer term development and transportation planning to be balanced with conservation of sensitive resources in a much more comprehensive way. The MSHCP builds upon a previously approved habitat conservation plan which only addressed Stephens' kangaroo rat. The MSHCP project area is 1.2 million acres and the proposed conservation area, including public lands, is approximately 500,000 acres. The core area reserves include habitats such as riparian, oak woodland, and 15,000 acres of coastal sage scrub. On June 17, 2003, the Riverside County Board of Supervisors certified the EIR and approved the Western Riverside MSHCP. The state and federal wildlife agencies approved the plan and permits were issued June 22, 2004.

### NCCP in Northern California

Over the last four years, the NCCP program was expanded and made available throughout California. Planning efforts have begun in Contra Costa and Placer Counties, as well as with the Mendocino Redwoods Company. Plans are being considered in other northern California areas including Santa Clara, Solano, and Yolo Counties. Significant accomplishments in northern California include the following plans.



**East Contra Costa County Plan.** Contra Costa County and 6 other local area agencies have formed a Habitat Conservation Plan Association (HCPA) to develop a regional conservation plan for the eastern portion of the county. The plan area covers 190,000 acres. Grazed annual grasslands are the most common land cover in the undeveloped portions of the planning area. Other natural communities present include oak woodland, oak savannah, chaparral/scrub, riparian scrub and woodland, and permanent and seasonal wetlands. State-listed species being addressed in

planning include San Joaquin kit fox, Swainson's hawk, Alameda whipsnake, and giant garter snake. Independent science advisors met four times in 2003. A compilation of their proceedings is pending. The NCCP planning agreement was signed by the HCPA and DFG and became effective in November 2003. A preliminary working draft of the plan was put out for public review in late 2003.



Mary Ann Showers, DFG File Photo

**Mendocino Redwood Company Plan.** Mendocino Redwood Company is transforming its landscape approach to sustainable yield timber harvesting into a Natural Community Conservation Plan intended to conserve listed and non-listed species and natural communities on its lands. State-listed species being evaluated for coverage include the marbled murrelet, coho salmon, and 16 plant species. A planning agreement was signed in August 2003. The proposed plan will cover approximately 232,000 acres of private lands within the timber harvest zones of Mendocino and Sonoma Counties that the company currently owns or holds timber rights to. The report of the independent scientific advisors was completed in 2003, and an administrative draft of the plan was produced.



Placer County Planning Department

**Placer County Legacy.** Placer County, DFG, and USFWS finalized an NCCP planning agreement in December 2001. The County is preparing the NCCP in three phases. Phase 1 is underway now and covers the valley floor and low foothill portions of the County. State-listed species included for analysis of coverage are Swainson's hawk, giant garter snake, and Bogg's Lake hedge-hyssop. A Biological Working Group made up of area stakeholders meets regularly to discuss planning options. Draft species accounts have been completed. The County is working to establish a process to review and evaluate interim projects so that during the planning process development projects can proceed without foreclosing conservation options.

### An Opportunity Lost



DFG File Photo



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**Merced County and University of California at Merced Plan.** After no progress since the late summer of 2002, the County of Merced stopped preparation of the Merced Plan in early 2004, indicating

that the issues were too controversial. The plan would have covered the eastern portion of the county near the town of Merced. The County of Merced and the University of California worked together on the initial stages of an NCCP plan that would have addressed conservation of grassland and vernal pool ecosystems while accommodating a new UC campus and additional growth and development in the adjacent urban areas. State-listed species that would have benefited from the plan include San Joaquin kit fox, Swainson's hawk, San Joaquin Valley Orcutt grass, and Colusa grass, as well as other sensitive species. An NCCP planning agreement was signed in the summer of 2001. Biological data were collected and are available in a report entitled "The Wildlife and Rare Plant Ecology of Eastern Merced County's Vernal Pool Grasslands". The team of independent scientific advisors completed their report in November 2002.

## Implementation of Approved NCCPs

As NCCPs have been approved in southern California (seven to date), the DFG, in cooperation with other resource agencies and the local jurisdictions, has turned its attention and resources to implementation tasks. Such tasks include habitat acquisition, adaptive management, monitoring, seeking grants, and administering a Local Assistance Grants program.



**Habitat Acquisition.** The Wildlife Conservation Board (WCB) authorized funds for the acquisition of approximately 21,426 acres of habitat lands to contribute to the reserve systems of NCCPs during the period 2000 through 2003. WCB acquired 794 acres in Orange County, nine acres in San Bernardino County, 8,182 acres in San Diego County, and 12,441 acres in Riverside County.

**Management and Monitoring.** The approved NCCPs in San Diego County are in the earliest stages of reserve management and biological monitoring, while Orange County's management and monitoring program is fully operational. Activities in these counties include adaptive management and monitoring.

### Adaptive management:

- development of area specific management plans and fire management plans;
- vegetation mapping;
- baseline surveys for sensitive insect, plant, and animal resources;
- restoration of coastal sage scrub;
- erosion control to protect willow monardella;
- restoration of wetland and riparian habitats; and
- invasive weed control.



### Monitoring:

- development of standardized monitoring protocols, data recording, and a centralized database;
- assessment of digital imagery techniques for monitoring habitat change over large reserve systems;
- habitat and population monitoring;
- tracking exotic ant invasions;

- vernal pool inventories;
- wildlife corridor monitoring.

Western Riverside County and the Coachella Valley NCCPs are just beginning implementation. Initial inventory and monitoring strategies and protocols are being developed under the lead of the DFG Resource Assessment Program. Frameworks for both NCCPs will emphasize an initial inventory and assessment phase, followed by long-term species, community, and landscape monitoring. Surveys for many taxa are underway, species niche models are being developed, community approaches are being derived, protocol field guides and training manuals have been compiled, data storage is being designed, and techniques for assessing wide-scale ecological change are being tested.

**Local Assistance Grants Program.** The Local Assistance Grants Program provides funding to implement a variety of tasks related to natural community conservation planning. Grant recipients and tasks associated with these grants are presented in the following tables.

Local Assistance Grants 2000	
Grant Recipient	Task
San Diego Association of Governments	Habitat tracking GIS support
The Nature Conservancy	Vegetation mapping for coastal Orange Co.
City of Poway	Wildlife corridor monitoring
San Diego State University	Index of biological integrity for coastal sage scrub
Orange County	Exotic species control
City of San Diego	Coastal sage scrub restoration
Various	Rare species monitoring

Local Assistance Grants 2001	
Grant Recipient	Task
Riverside County	Habitat tracking GIS support
The Nature Conservancy	Modeling to assess habitat connectivity
Coachella Valley Assoc. of Governments	Biological monitoring program development
City of Chula Vista	Baseline monitoring surveys
City of San Diego	Invasive species control
San Diego County	Habitat management plan development
Riverside County	Habitat restoration techniques testing
Various	Rare species monitoring

Local Assistance Grants 2002	
Grant Recipient	Task
The Nature Conservancy	Modeling to assess habitat connectivity
Coachella Valley Assoc. of Governments	Biological monitoring program development
City of Chula Vista	Baseline monitoring surveys
Wildlife Research Institute Inc.	Raptor monitoring
City of San Diego	Development of a GIS database for Management and monitoring information

Local Assistance Grants 2002	
City of San Diego	Reserve management plan development
City of San Diego	Burrowing owl habitat enhancement, management, and monitoring

Local Assistance Grants 2003	
Grant Recipient	Task
Riverside County	Habitat management on new reserves
City and County of San Diego	Monitoring the impacts of fire on the San Diego reserve system
San Diego County	Habitat enhancement for Quino checkerspot butterflies
City of San Diego	Fencing for vernal pool protection
Wildlife Research Institute Inc.	Training program for raptor monitoring
City of San Diego	Reserve management plan development

Local Assistance Grants 2004	
Grant Recipient	Task
Riverside County	Preparation of materials and training for cities in implementing the Riverside County MSHCP
San Diego State University	Revision of the San Diego County MSCP Biological Monitoring Plan
The Nature Reserve of Orange County	Management of reserve lands at the El Toro Marine Corps Air Station
Riverside County Park and Open Space District	Immediate management of newly acquired NCCP preserve lands

## CONSERVATION BANKING



The Department has made significant progress in working with public and private entities to establish conservation banks throughout California from 1999 through 2002. The established conservation banks protect numerous state threatened and endangered animals and plants including the San Joaquin kit fox, giant garter snake, Least Bell's vireo, Alameda whipsnake, Sebastopol meadowfoam, Bogg's Lake hedge-hyssop, and slender Orcutt grass. Federal listed animals protected include the California red-legged frog, valley elderberry long horned beetle, coastal California

gnatcatcher, Quino checkerspot, Conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp.

More than 7,150 acres of habitat for threatened and endangered species have been conserved in conservation banks. The conservation banks range in size from as small as 28 acres to protect vernal pool plants and crustaceans to those as large as 3,200 acres for more wide-ranging species such as the San Joaquin kit fox. The approved conservation banks not only provide a viable alternative to the costly process of conventional project permitting and mitigation at a single site, but also contribute to large scale conservation planning efforts such as the MSHCP and NCCP in southern San Diego County where banks provide habitat linkages for wildlife or contribute to recovery strategies for federally listed species.

Many more conservation banks are being proposed; over 3,023 acres are currently being reviewed as future conservation banks. The banks being proposed, such as a 1,300-acre site in Solano County, will go a long way toward conserving listed and special status species. The bank in Solano County, for example, will provide habitat for more than 10 state and federally listed and special status species. A few of the diverse conservation banks approved by the Department include:



**Agua Fria Conservation Bank.** The Agua Fria Conservation Bank is located in western Merced County and encompasses 3,300 acres. The bank provides habitat for the threatened San Joaquin kit fox and the burrowing owl, and is within the Designated Critical Habitat for the California red-legged frog.



**Brushy Creek Conservation Bank.** The Brushy Creek Conservation Bank is located on 120 acres in Alameda County. It conserves burrowing owl habitat and supports known colonies of burrowing owls.



**Bryte Ranch Conservation Bank.** The Bryte Ranch Conservation Bank protects protecting vernal pools and provides habitat for state listed plants on 573 acres in Sacramento County.



**Pope Ranch Conservation Bank.** This bank is located in Yolo County and provides habitat for the giant garter snake. 391 acres of freshwater marsh have been created or restored.



**Stillwater Plains Mitigation Bank.** The Stillwater Plains Mitigation Bank is located on the valley floor in Shasta County and encompasses 834 acres. The bank preserves vernal pools and vernal wetlands, and provides habitat listed species such as slender Orcutt grass, vernal pool fairy shrimp, and tadpole shrimp.

## RECOVERY LAND ACQUISITION PROGRAM



It is the mission of the Department to maintain native fish, wildlife, plant species, and natural communities for their intrinsic and ecological value and their benefits to people of the State of California. Part of the Department's mission is to protect and maintain habitat in a sufficient amount and quality to ensure survival of all species and natural communities. One of the ways in which the Department carries out its mission to conserve and protect native species habitat is through land acquisition or through the use of conservation easements.

The Department, working in coordination with the Wildlife Conservation Board (WCB), selects, authorizes, and allocates funds for the purchase of land and waters suitable for the preservation, protection and restoration of wildlife habitat, as well as for recreation purposes. One of the funding sources used to acquire lands and easements for the protection of endangered and threatened species is the USFWS Endangered Species Act Section 6 Recovery Land Acquisition Program. WCB uses these federal grant funds, partnered with a minimum of 25% nonfederal matching funds, to acquire habitat for the recovery of endangered and threatened species in support of USFWS approved Recovery Plans. Since this program began in 2001, the Department has received more than \$8,000,000 in Recovery Land Acquisition funds. Upon acquisition, these lands are held in perpetuity for the conservation, protection, and recovery of those species. Compatible recreational activities can be allowed on these Recovery Lands, as long as the recreational activities are not in conflict with the purposes for which the lands are acquired. Such activities can include wildlife viewing and nature walks. The table below summarizes the species and habitats that will benefit from these acquisitions.

If you are interested in finding about ecological reserves and preserve lands that are open for these activities, additional information can be found on the Department's web page at <http://www.dfg.ca.gov/lands/lands.html>.

## Recovery Land Acquisition Projects

2001 Recovery Land Acquisition Projects	
Project and Location	Species to be Recovered
Kern primrose sphinx moth habitat (Kern County)	Kern primrose sphinx moth
Peninsular Bighorn Sheep (Riverside County)	Peninsular bighorn sheep
Purisima Hills (Santa Barbara County)	California tiger salamander
Coastal sand dunes (Monterey County)	Smith's blue butterfly, sand gilia, Monterey spineflower, Menzies' wallflower
Coast live oak and stabilized sand dunes (Elfin Forest) (San Luis Obispo county)	Morro shoulderband snail, Morro manzanita, Morro Bay kangaroo rat, Indian Knob mountainbalm, Morro blue butterfly
Larkin Valley wetlands (Santa Cruz County)	Santa Cruz long-toed salamander, California red-legged frog

2002 Recovery Land Acquisition Projects	
Project and Location	Species to be Recovered
Stabilized sand dunes (San Luis Obispo County)	Morro shoulderband snail, Morro manzanita, Morro Bay kangaroo rat, Indian Knob mountainbalm
Ramona Grasslands (San Diego County)	San Diego fairy shrimp, Stephen's kangaroo rat, arroyo toad, California gnatcatcher
Watsonville Slough wetlands (Santa Cruz County)	Robust spineflower, Santa Cruz long-toed salamander, California tiger salamander
Sandhill habitat (Santa Cruz County)	Mount Hermon june beetle, Zayante band-winged grasshopper, Ben Lomond spineflower, Ben Lomond wallflower
Butte County vernal pools (Butte County)	Butte County meadowfoam, vernal pool tadpole shrimp, vernal pool fairy shrimp
Shay Meadow wetlands (San Bernardino County)	Unarmored threespine stickleback, bird-footed checkerbloom, slender petaled thelypodium, San Bernardino blue grass, California dandelion, southern mountain buckwheat, southern rubber boa

2003 Recovery Land Acquisition Projects	
Project Title	Species to be Recovered
La Sierra Canyon-Santa Monica Mountains (Los Angeles County)	Lyon's pentachaeta, Braunton's milkvetch, Santa Monica Mountains live-forever, Santa Monica Mountains dudleya, least Bell's vireo, California gnatcatcher, southwestern willow flycatcher, California red-legged frog, Wright's checkerspot butterfly
Watsonville Slough wetlands (Santa Cruz County)	Robust spineflower, Santa Cruz long-toed salamander, California tiger salamander
Gabbro Soil habitat (El Dorado County)	Stebbins' morning-glory, Pine Hill ceanothus, Pine Hill flannelbush, El Dorado bedstraw, Layne's butterweed
Colton Dune Ecosystem (San Bernardino & Riverside counties)	Delhi sands flower-loving fly, California gnatcatcher, Los Angeles pocket mouse, burrowing owl
China Hills (Siskiyou County)	Yreka phlox

2004 Recovery Land Acquisition Projects	
Project Title	Species to be Recovered
Dirty Socks Spring (Inyo County)	Owens tui chub, Owens pupfish
Gabbro soil plant habitat (El Dorado County)	Stebbins' morning-glory, Pine Hill ceanothus, Pine Hill flannelbush, El Dorado bedstraw, Layne's butterweed
Morro Bay shoreline (San Luis Obispo County)	California sea-blite, salt-marsh bird's-beak, western snowy plover, marsh sandwort, Morro shoulderband snail
Peninsular Ranges - Highway 74 (Riverside County)	Peninsular bighorn sheep
Ramona Grasslands (San Diego County)	Stephen's kangaroo rat, arroyo toad, San Diego fairy shrimp, coastal California gnatcatcher
Soledad Canyon riparian properties (Los Angeles County)	Arroyo southwestern toad, unarmored threespine stickleback, least Bell's vireo, southwestern willow flycatcher, slenderhorned spineflower
Vernal pools, Millville Plains (Shasta County)	Vernal pool fairy shrimp, slender Orcutt grass

# HIGHLIGHTS IN SPECIES CONSERVATION AND RECOVERY

The California and Federal Endangered Species Acts focus on the protection, preservation, and recovery of species whose numbers have declined significantly. Loss of habitat, including habitat fragmentation, is the single most important threat to the continuing survivorship of California's sensitive plants and animals. There are statewide efforts on the part of volunteers and resource professionals to reduce the downward trend experienced by many species. Species conservation projects and recovery activities are highlighted in this section.

## Species Conservation

### Invertebrate Species



**California freshwater shrimp.** The California freshwater shrimp is the State's only native, stream-dwelling shrimp. It is found in freshwater streams in Sonoma, Napa, and Marin Counties. Many agencies and private groups, including the NRCS, the WCB, the NPS, Marin County, Napa County, the California Coastal Conservancy, local schools, ranchers, and watershed groups, have contributed to the conservation of the California freshwater shrimp. Habitat restoration on Stemple Creek exemplifies this partnership. Stemple Creek rises near Petaluma and empties into the Pacific

north of Dillon Beach in Marin County's Estero de San Antonio. A watershed approach to stream restoration began the late 1990s on the degraded stream. About 20 miles have been restored and ranchers have reconfigured pastures to protect the stream and reduce runoff from fields.

Restoration was also accomplished through a Center for Ecoliteracy project entitled "The STRAW Project" or "Students and Teachers Restoring a Watershed." The 4<sup>th</sup> Grade Brookside School students and their teacher worked alongside watershed restoration experts to map riparian habitat, monitor water quality, research native species, clear debris from creeks, and implement public awareness campaigns. Prior to the STRAW Project, it was estimated that 50 years would be needed to effect a change in the shrimp population levels in the degraded reaches of the Stemple Creek. However, the California freshwater shrimp could be found in the restored areas of Stemple Creek within three years. And, it is not only the shrimp that have benefited. Increased numbers of songbirds, frogs, and salamanders dependent on riparian habitat can now be found along the creek. For additional information about the Bay Institute and the STRAW Project, see [http://www.bay.org/watershed\\_education.htm](http://www.bay.org/watershed_education.htm).



## Reptiles and Amphibians



**Giant garter snake.** The USGS, Western Ecological Research Center (WERC), continues to provide science-based information for NCCP planning in the Sacramento Valley. Conservation strategies are being developed to recover populations of giant garter snakes. In addition, WERC continues to provide professional advice and information to the DFG. Ongoing research includes the use of morphological measurements and tissue samples for genetic determinations to improve the taxonomic description of this species which is inadequately treated in the current literature. Passive integrated transponder (PIT) tags are being used to

permanently mark snakes for data collection. The telemetry information is being incorporated into a geographical information system, yielding statistically valid spatial analysis for estimating home range size and habitat preferences.

Numerous ongoing conservation efforts now focus on the giant garter snake. The California Rice Industry Association has developed stewardship practices for rice farming to protect giant garter snakes and the Bureau of Reclamation addresses potential impacts to endangered species caused by operations and maintenance of Central Valley Project (CVP) facilities through its Endangered Species Conservation Program. The U. S. Environmental Protection Agency and the California Department of Pesticide Regulation have produced rodenticide bulletins for Butte, Colusa, Fresno, Glenn, Kern, Madera, Merced, Sacramento, San Joaquin, Solano, Sutter, Yolo, and Yuba Counties. These bulletins identify use limitations that apply to areas where giant garter snakes have been reported. Regional habitat conservation planning efforts also provide for conservation of the giant garter snake. These plans include the Natomas Basin HCP for the city of Sacramento and Sutter County, the South Sacramento HCP, the San Joaquin County MSHCP and Open Space Plan, the Kern Water Bank HCP, Maxwell Irrigation District HCP, Natomas Basin Metro Air Park HCP, and the DFG Striped Bass Management Program HCP.

## Birds



**California Least Tern.** The long-term increase in the number of nesting pairs in California is continuing. In 1970, there were about 600 nesting pairs statewide. Owing to intensive protection and enhancement efforts, the population has grown eleven-fold to nearly 7,000 pairs in 2003. Nesting was reported at 39 sites, nine of which exceeded 300 pairs. Several new colonies formed since the late 1990s, including those on nesting islands created at Batiquitos Lagoon and the Albany bay shore. Most of the population increase is accounted for by growth in colony size of 10 or 15 of the largest colonies. The tern colony at

Alameda Island in San Francisco Bay, formerly part of a Naval Air Station, is now under National Wildlife Refuge management by USFWS and continues to be one of the largest least tern colonies in the state.

Habitat improvement projects at Mugu Lagoon, San Elijo Lagoon, DFG's San Dieguito and Batiquitos Lagoon Ecological Reserves, and the mouth of the Santa Ana River are benefiting many species, including the least

tern. The DFG is also expanding Venice and Huntington Beach protected areas and replacing worn fence at both sites. Habitat restoration efforts planned for Ballona Wetlands will enhance the nesting and foraging habitat of the tern. Future management of the San Diego and Sweetwater National Wildlife Refuges under a Comprehensive Conservation Plan will significantly improve habitat conditions for this species. Wetland restoration is also proposed at Bolsa Chica wetlands in Orange County. When implemented, this project will be one of the largest wetland projects in southern California. It will benefit numerous species and will enhance nesting and foraging habitat for least terns.

**Belding's savannah sparrow.** Habitat improvement projects at several coastal salt marshes in southern California have restored tidal flushing, eliminated exotic plants, and actively trapped and removed predators. As a result, the numbers of breeding pairs of Belding's savannah sparrows have increased. Restoration activities implemented by the Naval Air Weapons Station at Mugu Lagoon in Ventura County, for example, reestablished tidal flow to isolated patches of degraded salt marshes and substantially improved habitat for the sparrow. In 2001, twice as many pairs of sparrows were found when compared to the numbers of breeding birds found before restoration in 1996.



Restoration of tidal processes and creation of estuarine conditions at DFG's San Dieguito Ecological Reserve, San Diego County, also benefited breeding birds. Subsequently, about 75 pairs were reported in 2001, twice the breeding population recorded in surveys in the 1980s and 1990s before restoration commenced. Habitat protection and enhancement projects, such as those at Batiquitos Lagoon and the mouth of the Santa Ana River, have resulted in improvements in habitat conditions. Some wetlands, such as Goleta in Santa Barbara County, have been fenced to prevent human access. Eight state and federal agencies are proceeding with planning and environmental compliance requirements for the Bolsa Chica Wetlands Restoration Project, Orange County. When implemented, it will be one of the largest wetlands restoration projects in Southern California and will restore potentially hundreds of acres of Belding's Savannah sparrow pickleweed habitat.

**California condor.** More than 200 captive-bred condors were produced from 1988 to 2002 in three breeding facilities in southern California and Idaho. On the average, about 20 juveniles are being released to the wild annually. Three disjunct populations now exist in the condor's historic range in southern California, in Arizona/Utah, and in northern Baja California. The total condor population from January 1, 2000 to September 1, 2003 grew from 159 to 222 birds. During that time the wild population in California increased from 25 to 44 birds. The first hatchlings in the wild of wild-laid eggs occurred in three California nests in 2002, but all three chicks died. The first wild chick to survive past fledging (first flight) was hatched last year in Arizona. That chick at 9 months is doing fine, and is the first to be fledged into the wild in 21 years. All captive and wild condors have been inoculated with a new avian vaccine for West Nile Virus. The DFG continues to monitor all California birds and is working with public agencies and the private sector to reduce lead contamination in these birds.

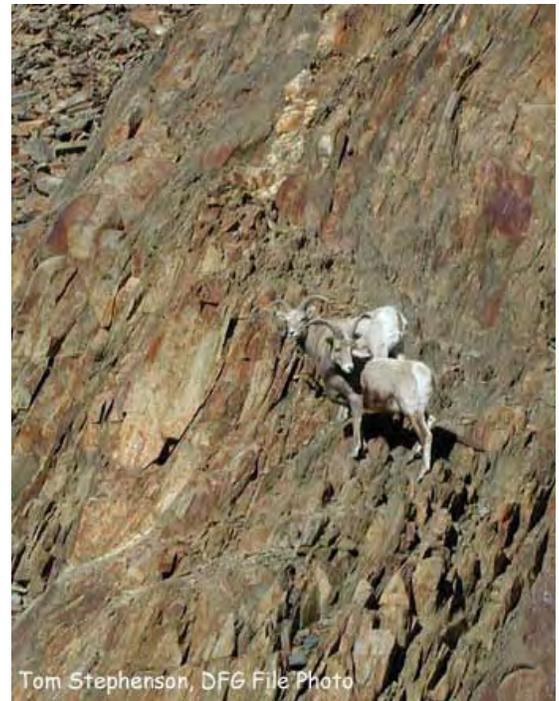


## Mammals



**Peninsular bighorn sheep.** The Peninsular bighorn sheep are in danger of extinction throughout a significant portion of their range due a number of factors including disease, habitat degradation and fragmentation, and predation coinciding with low population numbers. Bighorn sheep at the urban interface are also threatened by domestic dogs, automobiles, and drowning. Since 1970, populations of bighorn sheep have experienced additional fragmentation as a result of the expansion of the interstate highway system in southeastern California. Critically important to the long term survival of the peninsular bighorn sheep is the maintenance of connectivity between areas occupied by subpopulations so that emigration and immigration and gene flow can occur, as well as to provide opportunities to colonize vacant habitat. A recovery team collaborated on the federal recovery plan and continues to work to implement goals of the plan. Ongoing surveys suggest an upward trend in the numbers of sheep.

**Sierra Nevada bighorn sheep.** The Sierra Nevada bighorn sheep is one of the most endangered subspecies of large mammals in North America. Population levels fell from an estimated 310 individuals in 1985 to an estimated 100 individuals in 1999. The specific causes of the decline have not been identified. However, because of the decline and high levels of public concern, the legislature provided funding to the DFG to implement a long-term, comprehensive population recovery program. Elements of the recovery program include intensive monitoring, establishing additional populations in historical range of the species, and possibly, captive breeding to ensure that animals will be available to increase populations and expand geographic distribution. Continued monitoring of all bighorn sheep populations in the Sierra Nevada remains a high priority, and recovery will be dependent upon continued availability of monies for this important conservation effort. Since the recovery effort was initiated, the number of Sierra Nevada bighorn sheep has increased to an estimated 300 individuals.





**Riparian brush rabbit.** The riparian brush rabbit is a small cottontail that is secretive by nature. Historically, riparian brush rabbits inhabited dense, brushy areas of Central Valley riparian forests. The dramatic decline of the riparian brush rabbit began in the 1940s with the construction of dams on the major rivers of the Central Valley for irrigation and flood control. As a result, floodplains were converted to agriculture and the remaining riparian communities were reduced in size and fragmented. This species is now restricted to two small areas in the San Joaquin Valley. It was known only from one small intact area of riparian forest until 2003 when a second population was discovered near Stockton.

Habitat restoration and a captive breeding program have now been implemented. The captive breeding program uses wild-caught rabbits in equal sex ratios. Genetic studies are ongoing to ensure the suitability of rabbits from different wild populations for captive breeding and translocation purposes. To date, well over 100 rabbits have been produced in the three captive breeding pens and over 70 have been released to the wild to establish a new population on the San Joaquin River National Wildlife Refuge. Successful breeding within the new population has already been documented. Further releases are scheduled and the search continues for additional wild populations.

## Plants



**Yreka phlox.** Yreka phlox is known only from four small occurrences near the town of Yreka, Siskiyou County. The population on China Hill is isolated from the other populations and occurs in a vegetation type that is distinct from the other populations. Although largely undeveloped, the majority of China Hill was in private ownership and zoned for residential development. Protection of this population is essential to the conservation of the species. Using Section 6 Recovery Land Acquisition funds and State-matching funds, three properties on China Hill were purchased from willing sellers. Over 95% of China Hill is now in public ownership, effectively protecting the Yreka phlox. Fencing and the creation of interpretive trails at China Hill are now being considered.

**Ventura Marsh milkvetch.** Ventura Marsh milkvetch was presumed to be extinct before its rediscovery in 1997. It was found on contaminated soil at a closed waste oil site in degraded back dune habitat near the City of Oxnard. Continued survival of this species depends upon stabilizing the existing population and establishing additional populations in suitable protected coastal wetland sites. Experimental populations have now been established at two locations on lands managed by the California Department of

Parks and Recreation and the University of California Reserve System. Rabbit, gopher, and snail predation are ongoing problems at these sites. Survivorship and mortality in these habitat areas are being evaluated.

Research into germination and propagation efforts is being undertaken by the Santa Barbara and Rancho Santa Ana Botanic Gardens. Other research at the University of California, Santa Barbara is focused on soil habitat requirements for the milk-vetch. Work at the University of California's Coal Oil Point Reserve has been funded largely by the private landowner of the only existing wild population of Ventura Marsh milkvetch.



## Planning for Recovery



Recovery is the process by which the decline of an endangered or threatened species is reversed and threats to its survival are eliminated. The goal of this process is to restore the species to the point where it is a secure, self-sustaining part of its ecosystem. Recovery involves protecting and often restoring the habitat in which the species can thrive.

Preparation of a formal recovery plan is not required under CESA. In 1996, however, CESA was amended and directed the DFG to develop and implement a recovery strategy pilot program for the greater sandhill crane. In 2003, an additional amendment added coho salmon to the Recovery Strategy Pilot Program. The goal of this pilot program, which ends in 2009, is

the development of recovery strategies so that the regulations or other protections pertaining to listed species pursuant to CESA would not be necessary. The recovery strategies are developed by a recovery team, are based on the best available scientific information, and essentially parallel the requirements of a recovery plan under federal law. In addition, documents prepared in support of listing under CESA include a description of habitat necessary for the species survival, as well as management recommendations. Management recommendations outline steps to ensure long-term survivorship of the species and protection of its habitat. The DFG may also sponsor recovery workshops for State-listed species.

Under the Federal Endangered Species Act, the first step in recovering a federally-listed species is the preparation of a draft recovery plan. The plan is prepared by a team that includes FWS staff, species experts, and other interested parties. DFG staff often participate in the development of recovery plans, as

well as implementation of recovery activities. Many State-listed plants and animals are also listed under the federal Act and are, therefore, included in recovery plans. Multi-species federal recovery plans can also address species of concern in the hope that implementation of the plan will lessen or eliminate the need to list these species. The following plans, prepared within the last few years, also address State-listed species. A discussion of recovery planning under federal law and a complete list of recovery plans can be found at <http://endangered.fws.gov/recovery/>.



**2004 Recovery Plan for Otay Tarplant.** Otay tarplant (*Deinandra conjugens*) is federally listed as a threatened species and State-listed as endangered. The species occurs in southwest San Diego County, California, and in northern Baja California, Mexico. Primary threats to the species include the ongoing loss and degradation of suitable habitat, and fragmentation of remaining populations. Within San Diego County, the species occurs entirely within the Multiple Species Conservation Planning (MSCP) area, including three associated subarea plans: City of San Diego Subarea Plan (approved in 1996), County of San Diego Subarea Plan (approved in 1998), and the City of Chula Vista Subarea Plan (approved in 2003). These subarea

plans provide for the conservation in perpetuity of Otay tarplant and many other listed and non-listed species by developing a reserve system, protecting key populations, and a monitoring and management framework. Critical habitat for the species was designated on December 10, 2002. Recovery focuses on protecting and managing existing populations and maintaining normal ecological conditions within the MSCP. The importance of small populations that occur between larger populations is also recognized. These smaller colonies can provide connectivity (gene flow) beneficial to the species as a whole. Future research will examine genetic variation within the species and pollination ecology.

**2004 Recovery Plan for Five Plants from Monterey County, California.** This recovery plan addresses five plants that occur along the coast of northern Monterey County: Hickman's cinquefoil (*Potentilla hickmanii*), coastal dunes milk-vetch (*Astragalus tener* var. *titi*), Yadon's piperia (*Piperia yadonii*), Monterey clover (*Trifolium trichocalyx*) and Gowen cypress (*Cupressus goveniana* ssp. *goveniana*). The species are threatened by alteration, destruction, and fragmentation of their habitat; recreational activities; competition from non-native plant species; and disruption of natural fire cycles. The recovery plan proposes to protect habitat, control non-native invasive plants, implement habitat management, and reestablish natural ecosystem processes.





Susan Levitsky  
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**2004 Draft Recovery Plan for Yreka Phlox.** Yreka phlox (*Phlox hirsuta*) is a State and federally-listed endangered species. *Phlox hirsuta* is known from four populations and is a serpentine endemic. It is threatened primarily by alteration or destruction of its habitat due to residential development, logging, fire suppression activities, off-road vehicle use, and grazing. Because the primary threat is direct modification of habitat, protection of occupied sites is critical to the recovery of the species. Seed storage for conservation purposes and controlled propagation programs are also proposed in the Recovery Plan. Monitoring will provide information needed to determine population trends, habitat conditions, and the status of new or existing threats to the species. Ongoing research is examining pollination ecology of the species.



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### **2004 Draft Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon.**

Vernal pools are renowned for their showy displays of spring wildflowers, blooming in concentric rings around the pools. In California, extensive areas of vernal pool habitat developed over a long period of geologic time. They support unique suites of plants and animals that have evolved with this unique type of wetland ecosystem. Vernal pools are ephemeral, filling with water in the winter and spring and drying by summer. More than 75 percent of vernal pools have been lost in the Central Valley of California. Losses on the California coast and in southern California exceed 90 percent. In Oregon, over 60 percent have been lost. Agricultural conversion, alteration of hydrology, and widespread urbanization constitute the primary threats to vernal pool ecosystems and the species they support.



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The Vernal Pool Ecosystem Recovery Plan addresses threats and recovery actions for 33 species of plants and animals. Recovery and long-term conservation actions contributing to the recovery are (1) habitat protection, (2) adaptive habitat management and monitoring, (3) status surveys, (4) research, and (5) public participation and outreach. An ecosystem approach is used in the Recovery Plan, with emphasis on conservation strategies that benefit groups of species in each vernal pool system. Single-species



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strategies are presented where species do not co-occur with other vernal pool species.

### 2003 Draft Recovery Plan for the Sierra Nevada Bighorn Sheep.

The Sierra Nevada bighorn sheep (*Ovis canadensis californiana*) is listed as an endangered species. Listing was prompted in part by a significant decline in population numbers. The recovery strategy identifies three main conservation issues: population dynamics, genetic variation, and ecosystem integrity. Increasing the sizes of individual groups of sheep, increasing distribution within the species' historic range, maintaining genetic variation, and providing safe access to winter ranges will be beneficial to the long-term survival of the Sierra Nevada bighorn sheep.



Tom Stephenson  
DFG File Photo

### 2003 Recovery Plan for Coastal Plants of the Northern San Francisco Peninsula.

This recovery plan features San Francisco lessingia (*Lessingia germanorum*), an annual herb in the aster family, and Raven's manzanita (*Arctostaphylos hookeri* ssp. *ravenii*), an evergreen creeping shrub in the heath family. San Francisco lessingia is threatened by invasion of nonnative vegetation, habitat loss, and potential land use conflicts in limited restorable urban habitat. Raven's manzanita exists in the wild as one genetic individual although some clones of the original plant and some of its seedlings have been artificially propagated. The remaining wild plant and its clones are located in remnant coastal scrub and grassland in the Presidio. Threats to Raven's manzanita include a failure to reproduce naturally, habitat loss, potential land use conflicts in limited restorable urban habitat, and disease.



NPS File Photo

The plan proposes to continue to protect the remaining wild plant and ensure its long-term survival, to reestablish several of Raven's manzanita populations in association with native species on local serpentine outcrops, and to ultimately establish populations reproducing by seed. Recovery actions for San Francisco lessingia focus on the restoration and management of the coastal dune system

with which the species is associated. The recovery plan also addresses several other listed species that are already covered in previous recovery plans. These species include the bay checkerspot butterfly, Myrtle's silverspot butterfly, and Presidio clarkia (*Clarkia franciscana*). In addition, the recovery plan considers 16 plant species of concern that are associated with San Francisco lessingia and Raven's manzanita, as well as 17 plant species of local or regional conservation significance.

**2003 Draft Recovery Plan for Chaparral and Scrub Community Species East of San Francisco Bay, California.** This recovery plan covers six species of plants and animals that occur in chaparral and scrub habitat, primarily in a four-county area east of San Francisco Bay. One animal, Alameda whipsnake (*Masticophis lateralis euryxanthus*) and one plant, pallid manzanita (*Arctostaphylos pallida*), are federally listed as threatened. In addition, the recovery plan includes three additional species of plants, Contra Costa manzanita (*Arctostaphylos manzanita* ssp. *laevigata*), State-listed Mt. Diablo bird's-beak (*Cordylanthus nidularius*), and Mt. Diablo buckwheat (*Eriogonum truncatum*), and one animal the Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*). The latter two species are presumed extinct. The loss, fragmentation, and degradation of habitat historically resulted in, and continues to cause, the decline of these species.

Management activities to forestall future declines at the urban interface in the East Bay Area presents a complex challenge to recovery of these species. The recovery plan presents a community-level strategy for recovery and conservation through implementation of long-term cooperative active management of the chaparral and scrub communities; protection of identified habitat from development, fragmentation, degradation, and incompatible uses; restoration of habitat through the ecological use of prescribed fire; and protection of populations representing the full range of genetic variation and geographic extent of the species.



**2002 Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada Foothills.** Six species of plants that occur on gabbro soils in chaparral and woodland in the central Sierra Nevada foothills are the focus of this recovery plan. The five federally-listed species include four endangered plants, Stebbins' morning-glory (*Calystegia stebbinsi*), Pine Hill ceanothus (*Ceanothus roderickii*), Pine Hill flannelbush (*Fremontodendron californicum* ssp. *decumbens*), and El Dorado bedstraw (*Galium californicum* ssp. *sierrae*), and one threatened plant, Laynes' butterweed (*Senecio layneae*). In addition, El Dorado mule-ears (*Wyethia reticulata*), a species of concern, is addressed. Conversion of habitat to urban and industrial uses has extirpated populations of these species and has degraded their habitat. This recovery plan presents a community-level strategy for recovery and conservation of these species. Protection of entire communities of plants and habitat from development or other incompatible uses and conserving the full range of genetic and geographic variation of the species are proposed.





### 2002 Southwestern Willow Flycatcher

**Recovery Plan.** The southwestern willow flycatcher (*Empidonax traillii extimus*) breeds in dense riparian habitats in southwestern North America, and winters in southern Mexico, Central America, northern South America, and southern California. The subspecies was listed as endangered effective March 29, 1995. Destruction and modification of riparian habitats are the principal threat to this species. Concurrent with habitat loss is brood parasitism by the brown-headed cowbird (*Molothrus ater*), which inhibits reproductive success and further reduces population levels. Recovery focuses on increasing the total known population and territories, as well as protecting riparian habitat or improving the quality of riparian habitat so that the flycatcher is no longer in danger of extinction.



### 2002 Colorado Pikeminnow, Bonytail Chub, and

**Razorback Sucker Recovery Goals.** The USFWS prepared amendments and supplements to the recovery plans for the Colorado pikeminnow (*Ptychocheilus lucius*), bonytail chub (*Gila elegans*), and razorback sucker (*Xyrauchen texanus*). All species are endemic to the Colorado River Basin of the southwestern United States. All have been impacted by streamflow regulation, habitat modification, competition with and predation by nonnative fish species. The purpose of these documents is to describe site-specific management actions and tasks; provide objective, measurable recovery criteria; and provide an estimate of the time to achieve recovery of the three endangered fish. The recovery goals include maintaining genetically and demographically viable, self-sustaining populations in the historic range of the species.



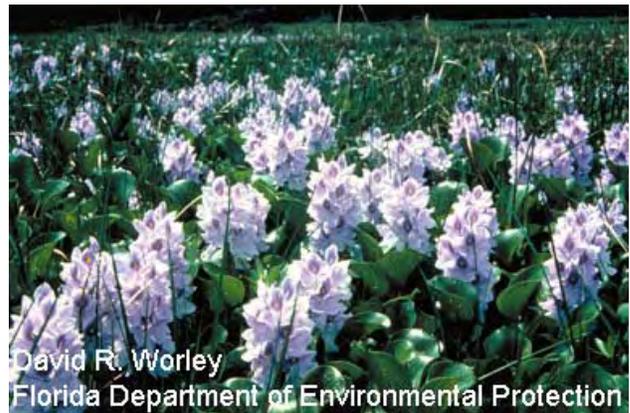
# INVASIVE SPECIES PROGRAM



DFG File Photo

The impacts of invasive species, which include a variety of organisms, from birds, mammals, fish, amphibians, and invertebrates, to plants and diseases, can be far-reaching both environmentally and economically. They can significantly disrupt the balance of natural ecosystems by consuming or competing with native plants and animals (including threatened and endangered species), altering biogeochemical cycles, and reducing diversity of native species. The introduction of invasive species is thought to be second only to habitat loss in contributing to declining biodiversity throughout the United States.

Aquatic invasive species pose unique challenges to resource managers. Unlike other sources of pollution, established populations of aquatic invaders can reproduce and spread. The introduction of only a few organisms or, in the case of aquatic plants and algae, a tiny portion of an organism, can result in the infestation of a water body, watershed, or entire biogeographic region.



David R. Worley  
Florida Department of Environmental Protection



NOAA File Photo

In 2002, the California Interagency Aquatic Invasive Species Council was established through legislation. When appointments are made by the Governor, the Council will consist of representatives from the Department of Food and Agriculture, the Department of Boating and Waterways, the Department of Parks and Recreation, the Department of Water Resources, the State Water Resources Control Board, the California Coastal Commission, the State Coastal Conservancy, the University of California, and the State Lands Commission. The bill also

authorizes the Governor to appoint to the council persons representing certain interest groups. The Director of Fish and Game will serve as the chairperson of the council.

At the current time, the Department is in the process of finalizing the California Aquatic Invasive Species Plan. The plan will outline various state programs and authorities related to invasive species and establish a blueprint for addressing these issues in the future. The plan will emphasize prevention of new infestations through outreach and education as well as early detection and rapid response in the event of a new infestation. Invasive, exotic plant species have become a primary threat to natural lands across the State.

The Department and the Resources Agency are members of the California Interagency Noxious Weeds Coordinating Committee (CINWCC), a group formed to implement the Interagency Memorandum of Understanding (MOU) regarding weeds on State and federal lands in California. Members signatory to the MOU also include representatives of the U.S. Forest Service (USFS), Bureau of Land Management (BLM), Bureau of Indian Affairs, California Department of Food and Agriculture (CDFA), and California Department of Transportation (Caltrans), among others. Stakeholder groups such as the California Cattlemen's Association and the California Native Plant Society (CNPS) also attend CINWCC's quarterly meetings. CINWCC's goals are to: (1) reduce the impact of weeds on wildland habitats of State and federal lands; (2) seek funding for weed research; (3) educate the public about the impacts of weeds; and (4) simplify regulatory compliance for weed abatement projects.



## CENTRAL VALLEY PROJECT CONSERVATION PROGRAM



The Central Valley Project Conservation Program (CVPCP) is a joint project of the Bureau of Reclamation (USBR) and US Fish & Wildlife Service to meet the biological needs of special status species in areas affected by the Central Valley Project. The CVPCP was mandated by Biological Opinions developed by the USFWS during implementation of the CVP; funding is dependent upon annual Congressional allocations. This conservation program started in 1991 to address endangered species in the San Joaquin Valley and was expanded in 1995 to include all areas impacted by the Central Valley Project.

The goal of the CVPCP is to implement an adaptive management program to protect, restore, and enhance special-status species and their habitats in areas directly or indirectly affected by the Central Valley Project (CVP). Objectives of the CVPCP are:

- Address biological needs of threatened & endangered species in an ecosystem manner;
- Assist in the conservation of biological diversity;
- Improve existing conditions for threatened and endangered species; and
- Reduce conflicts with future projects.

The CVPCP employs habitat acquisition, either through purchase or easements, restoration, adaptive management, and monitoring to achieve its goal. Research projects and studies are also an intrinsic part of this ecosystem-based program.

The CVP Habitat Restoration Program (CVPHRP) works in concert with the CVPCP. The CVPHRP was developed to protect, restore, and mitigate for past fish and wildlife impacts of the CVP not addressed through other CVPI A programs. The Central Valley Project Improvement Act (CVPIA) was passed in October 1992 to protect, restore, and enhance fish, wildlife, and associated habitats impacted by the CVP. A restoration fund was established, with fees paid by water and power users, for acquisition, habitat restoration, and enhancement.

Habitat in California's Central Valley, especially habitat areas along the rivers, has been affected by the development of water resources. The CVPCP seeks to improve the habitat of native species through identification, implementation of restoration management, and monitoring results. The CVPCP is guided by a technical team lead by the Bureau of Reclamation and the U.S. Fish and Wildlife Service and includes representatives from the California Department of Fish and Game. The same technical team oversees the solicitation, ranking, and implementation of projects funded by these two programs. The BOR oversees the budget for the CVPCP and the USFWS oversees the budget for the CVPHRP. The combined budget for the 2004 Fiscal Year is approximately 2.9 million dollars.



Numerous conservation and restoration projects have been funded through the CVPCP. Project partners include public and private entities such as the BLM, Caltrans, SWRCB, the Trust for Public Lands, TNC, and the Shasta Land Conservancy. These projects benefit state and federally-listed species and their habitats. Species include the giant garter snake, riparian brush rabbit, large-flowered fiddleneck, Bakersfield cactus, and Keck's checkerbloom. Please refer to <http://www.usbr.gov/mp/mp150/cvpcp/> for additional information.

### CVP Conservation Project Summary

Land Acquisition					
Year	County	Acreage	Habitat	Focus Species	Partner
2000	El Dorado	90	Gabbro chaparral	Layne's butterweed, Pine Hill ceanothus, Pine Hill flannelbush, Stebbins' morning-glory	
2000	Fresno	90	Grassland	Keck's checkerbloom	Sierra Foothil Conservancy
2000	Kern		Alkali sink	Blunt-nose leopard lizard, San Joaquin kit fox	CDFG, WCB
2000	Merced	391	Vernal pool Grassland	Vernal pool fairy shrimp, vernal pool tadpole shrimp	TNC, Great Valley Center, Merced County Farmland and Open Space Trust
2000	Sacramento	1,246	Wetland Vineyard	Giant garter snake	CDFG, TNC, Packard Foundation, National Fish and Wildlife Foundation, City of Sacramento
2000	Sacramento		Vernal pool Grassland	Vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander	TNC, WCB
2000	Tehama	10,000	Vernal pool Grassland	Vernal pool fairy shrimp, vernal pool tadpole shrimp	TNC
2000	Tulare		Alkali sink	Blunt-nose leopard lizard, San Joaquin kit fox	CDFG, WCB
2000	Tulare	821	Vernal pool Grassland	Vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander	CDFG, Four Creeks Land Trust, WCB, Packard Foundation, EPA, Wetland Development Program
2001	Colusa	467	Riparian	Valley elderberry longhorned beetle, yellow-billed cuckoo	TNC

Land Acquisition					
Year	County	Acreage	Habitat	Focus Species	Partner
2001	El Dorado	49	Gabbro chaparral	Layne's butterweed, Pine Hill ceanothus, Pine Hill flannelbush, Stebbins' morning-glory	American River Conservancy, BLM
2001	Fresno	97	Grassland	Keck's checkerbloom	Sierra Foothill Conservancy
2001	Merced	3800	Vernal pool Grassland	Vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander	TNC, WCB, California Rangeland Trust
2001	Sacramento	370	Vernal pool Grassland	Vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander	TNC, private
2002	Contra Costa	3,650	Vernal pool Grassland Riparian	San Joaquin kit fox, California red-legged frog	Trust for Public Lands, WCB, California Department of Parks and Recreation, California Coastal Conservancy
2002	El Dorado	157	Gabbro chaparral	Layne's butterweed, Pine Hill ceanothus, Pine Hill flannelbush, Stebbins' morning-glory	American River Conservancy
2002	Sacramento	370	Vernal pool Grassland	Vernal pool fairy shrimp	TNC, private
2002	Sacramento	2,054	Grassland Hardwood	Valley elderberry longhorned beetle	WCB, CalTrans, CalFed, Sacramento County Regional Parks, Sacramento Valley Open Space Council
2003	El Dorado	223	Gabbro chaparral	Layne's butterweed, Pine Hill ceanothus, Pine Hill flannelbush, Stebbins' morning-glory	El Dorado Irrigation District, WCB, private
2003	San Joaquin	2865	Vernal pool Grassland	Vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander	Packard Foundation, WCB, TNC, USFWS
2004	Fresno	40	Grassland	Keck's checkerbloom	Sierra Foothills Conservancy
2004	Kern	5,810	Vernal pool Grassland Alkali sink	San Joaquin kit fox, Tipton's kangaroo rat	TNC, BLM
2004	Madera	709	Riparian Hardwood	Valley elderberry longhorned beetle	CDFG, WCB, PG&E

Research, Restoration, and Management					
Year	County	Project	Habitat	Focus Species	Partner
2000	Colusa	Census	Wetland	Giant garter snake	Sacramento NWR
2000	Colusa	Riparian restoration	Wetland Riparian	Valley elderberry longhorned beetle, yellow-billed cuckoo	
2000	Colusa	Research	Riparian	Valley elderberry longhorned beetle	TNC
2000	Sacramento	Research	Wetland	Giant garter snake	CDFG, TNC
2000	Stanislaus	Genetic study Pen construction Habitat restoration	Riparian	Riparian brush rabbit	
2001	Colusa	Survey and monitoring	Wetland	Giant garter snake	USGS
2001	Colusa	Research	Riparian	Valley elderberry longhorned beetle	Sacramento River Partners
2001	Kern	Management	Alkali sink	Blunt-nose leopard lizard, San Joaquin kit fox, San Joaquin kangaroo rat	CDFG
2001	Merced	Research	Riparian	Valley elderberry longhorned beetle	TNC, USFWS, Grove Foundation, Lemmox Foundation
2001	Shasta	Research	Riparian	Valley elderberry longhorned beetle	TNC, USFWS, EPA, NRCS, Caltrans, Shasta Land Conservancy, National Fish and Wildlife Foundation
2001	Stanislaus	Survey	Riparian	Riparian woodrat	ESRP
2001	Stanislaus	Management	Riparian	Riparian brush rabbit	ESRP
2001	Statewide	GIS habitat trend analysis			CSU Chico
2001	Tulare	Restoration and management	Vernal pool Grassland	Vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander	NRCS
2001	Tulare	Management	Alkali sink	Blunt-nose leopard lizard, San Joaquin kit fox, San Joaquin kangaroo rat	CDFG
2002	Butte	Research	Riparian	Valley elderberry longhorned beetle	TNC

Research, Restoration, and Management					
Year	County	Project	Habitat	Focus Species	Partner
2002	Central Valley	GIS habitat trend analysis			CSU Chico
2002	Colusa	Monitoring	Wetland	Giant garter snake	USGS
2002	Colusa	Research	Riparian	Valley elderberry longhorned beetle	Sacramento River Partners
2002	Kern	Management	Alkali sink	Bakersfield cactus	ESRP
2002	Kern	Grazing study	Grassland	San Joaquin kit fox	ESRP, USGS, CalTrans
2002	Merced	Survey	Wetland	Giant garter snake	USFWS, Grasslands Water District
2002	Sacramento	Restoration	Wetland Upland	Giant garter snake	WCB, California Waterfowl Association
2002	San Joaquin	Habitat study	Grassland	Large-flowered fiddleneck	Department of Energy
2002	Stanislaus	Research	Riparian	Riparian brush rabbit	ESRP, California Department of Parks and Recreation
2002	Tulare	Management	Wetland	Tricolored blackbird	CDFG, USFWS, Lower Tule River Irrigation District, Wetland Development Program
2003	Butte	Restoration	Riparian		
2003	Butte	Survey	Wetland Riparian	Giant garter snake	
2003	Colusa	Survey	Wetland Riparian	Giant garter snake	Colusa NWR
2003	El Dorado	Seed propagation	Gabbro chaparral	Layne's butterweed, Pine Hill ceanothus, Pine Hill flannelbush, Stebbins' morning-glory	
2003	El Dorado	Survey	Wetland	Southern water snake	
2003	El Dorado	Pond construction	Wetland Riparian Coniferous forest	California red-legged frog	BLM
2003	Fresno	Demographic monitoring	Alkali sink	Palmate-bracted bird's-beak	CDFG, ESRP
2003	Fresno	Survey Genetic assessment	Riparian Wetland Upland	Buena Vista Lake shrew	USBR
2003	Glenn	Restoration	Riparian	Valley elderberry longhorned beetle	

Research, Restoration, and Management					
Year	County	Project	Habitat	Focus Species	Partner
2003	Kern	Study	Alkali sink Grassland	Blunt-nose leopard lizard, San Joaquin kit fox, San Joaquin kangaroo rat	
2003	Kern	Survey Genetic assessment	Riparian Wetland Upland	Buena Vista Lake shrew	USBR
2003	Kings	Survey Genetic assessment	Riparian Wetland Upland	Buena Vista Lake shrew	USBR
2003	Placer	Survey	Wetland	Southern water snake	
2003	Sacramento	Survey	Wetland	Southern water snake	
2003	Stanislaus	Captive breeding	Riparian	Riparian brush rabbit	
2003	Stanislaus	Survey and study	Riparian	Riparian brush rabbit	CDFG, USFWS, CalFed
2003	Tehama	Survey	Wetland Riparian	Giant garter snake	
2003	Tulare	Survey Genetic assessment	Riparian Wetland Upland	Buena Vista Lake shrew	USBR
2004		Reintroduction study	Alkali sink Grassland	San Joaquin kit fox	
2004	El Dorado	Preserve management	Gabbro chaparral	Layne's butterweed, Pine Hill ceanothus, Pine Hill flannelbush, Stebbins' morning- glory	El Dorado County, El Dorado Water District
2004	Glenn	Survey	Wetland Riparian	Giant garter snake	USFWS
2004	Glenn	Restoration	Riparian	Valley elderberry longhorned beetle	USFWS
2004	Kern	Grazing study	Alkali sink Grassland	San Joaquin kit fox	ESRP, USGS, CalTrans
2004	Merced	Survey	Wetland Riparian	Giant garter snake	USFWS
2004	Santa Clara	Management	Serpentine grassland	Bay checkerspot butterfly	
2004	Stanislaus	Captive breeding Reintroduction	Riparian	Riparian brush rabbit	ESRP

Research, Restoration, and Management					
Year	County	Project	Habitat	Focus Species	Partner
2004	Tehama	Restoration	Riparian	Valley elderberry longhorned beetle	USFWS

## THE WILDLIFE CONSERVATION BOARD: ACQUISITION, ACCESS, and ENHANCEMENT



The Wildlife Conservation Board (WCB) was created by legislation in 1947 to administer a capital outlay program for wildlife conservation and related public recreation. The primary functions of the WCB are to acquire land for the preservation, protection, and restoration of wildlife habitat and the development of wildlife-oriented public access facilities. These activities are carried out under eight programs: Land Acquisition Program, Habitat Enhancement and Restoration Program, Natural Heritage Preservation Tax Credit Program, California Riparian Habitat Conservation Program, Inland Wetlands Conservation Program, Oak Woodlands Conservation Program, The Rangeland, Grazing Land and Grasslands Protection Program, and Public Access Program. Listed species benefit under these programs through conservation of open space, enhancement and restoration of habitat for listed species, protection of riparian habitat, and management of rangeland. Funding for these programs comes from several sources including the General Fund, bond monies, and legislation. Funds are used individually or in combination to implement land acquisition, habitat management, and the development of public facilities.



**Land Acquisition Program.** Land acquisition is a component of all WCB programs. Through the Land Acquisition Program, the WCB acquires real property or rights in real property, such as conservation easements, on behalf of the DFG. It can also grant funds to other governmental agencies or nonprofit organizations for the same purposes. All acquisitions are made on a "willing seller" basis following a "fair market value" appraisal approved by the Department of General Services (DGS).

**Habitat Enhancement and Restoration Program.** The goal of the Habitat Enhancement and Restoration Program is to enhance and restore Threatened and Endangered species habitat, forest land habitat, and to implement Salton Sea restoration projects. Several fund sources are used to achieve this goal, including the Habitat Conservation Fund, the General Fund, the Wildlife Restoration Fund through the Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000. Funds are made available to nonprofit conservation organizations and federal, state, or local governmental agencies. Projects implemented under the Habitat Enhancement and Restoration Program provide long-term maintenance of the restored and/or enhanced habitat.

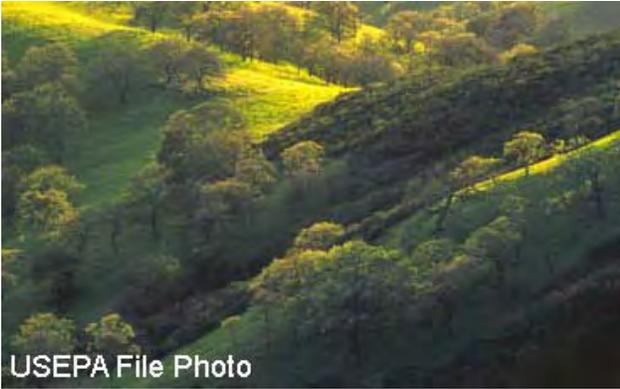
**Natural Heritage Preservation Tax Credit Program.** Since its inception in 2000, the Natural Heritage Preservation Tax Credit Program has been highly successful in protecting open space, important agricultural land, and providing linkages essential to wildlife. This program allows private landowners to donate land or water rights to state and local agencies or designated nonprofit organizations for conservation purposes in exchange for a State tax credit. Properties donated under this program must 1) meet the goals of HCP, NCCP, MSCP, or similar program that will benefit habitat conservation and sensitive species; 2) provide linkages, corridors, or reserves that will help improve the recovery of listed species; 3) protect wetlands, riparian corridors, or waterfowl habitat; 4) promote the biological viability of important California species; or 5) constitute a perpetual Conservation Easement over agricultural land, or is a permanent contribution of agricultural land in an unincorporated area that is zoned for agricultural use but threatened by development. Only one of these criteria need be satisfied to qualify under this program.

The preservation, restoration, and enhancement of California wetlands are implemented through the **California Riparian Habitat Conservation Program** and the **Inland Wetlands Conservation Program**.

**California Riparian Habitat Conservation Program.** The California Riparian Habitat Conservation Program was created by legislation in 1991. The program is a cooperative effort of state and federal agencies, local government, nonprofit conservation groups, private landowners, and concerned citizens to develop coordinated conservation efforts aimed at protecting and restoring riparian ecosystems. Landowners monitor and manage project improvements for 25 years under a required management plan.



**Inland Wetlands Conservation Program.** The dramatic loss over time of interior wetlands was the impetus behind the establishment of the Central Valley Habitat Joint Venture (CVHJV). The CVHJV is a coalition of public, private, and nonprofit organizations dedicated to protecting and restoring wetlands and waterfowl populations in the Central Valley of California. The Inland Wetlands Conservation Program was created to carry out the mandates of the CVHJV. Its specific mission is to increase aquatic bird populations in the Central Valley through the protection, restoration, enhancement and maintenance of wetland habitat. Individual projects under this program develop breeding, migrating, and wintering habitat for waterfowl, as well as support waterfowl friendly agricultural practices.



**Oak Woodlands Conservation Program.** Under the Oak Woodlands Conservation Program, landowners, cities and counties, and conservation organizations are given an opportunity to obtain funding for projects designed to conserve and restore California's oak woodlands. Funding under this program is used primarily for the purchase of easements. Restoration and enhancement of oak woodlands can also be funded. In addition, a portion of the funding can be used for outreach and education, as well as to develop and implement oak conservation elements in local general plans.

**Rangeland, Grazing Land and Grasslands Protection Program.** The purpose of the Rangeland, Grazing Land and Grasslands Protection Program is to protect the integrity of rangelands, grazing lands, and grasslands in California to prevent their conversion to nonagricultural uses. The WCB encourages projects that address regional landscape issues such as watershed protection and open space conservation.



**Public Access Program.** Public access for hunting, fishing or other wildlife-oriented recreation is ensured through the WCB's Public Access Program. This program focuses on the development of recreation facilities in cooperation with local agencies. These facilities include fishing piers or floats, access roads, boat launching ramps, trails, boardwalks, interpretive facilities, and lake or stream improvements. Support facilities such as restrooms and parking areas are also eligible for funding under this program. The WCB also acquires lands for preservation of wildlife habitat.

## Projects in the Spotlight

Many projects, large and small, are approved annually by the WCB. These projects benefit listed and sensitive species of plants and animals, protect watersheds, provide critical linkages between habitat areas, and help maintain open space. A small sample of projects is presented below. The WCB website (<http://www.dfg.ca.gov/wcb/>) contains many more such examples, as well as additional information about proposed acquisitions, funding sources, and grant application forms.

**Mill Creek and Grizzly Creek, Del Norte and Humboldt Counties.** Using funding provided by the from the Coastal Conservancy, the Department of Parks and Recreation, the Department of Fish and Game, the WCB, and numerous private donors, the Save the Redwoods League completed acquisition of acquired the 24,772-acre Mill Creek redwood forest in Del Norte County. The acquisition protects the watershed of Jedediah Smith Redwoods State Park and is strategically located between Redwood National and State Parks and the Smith River National Recreation Area. Mill Creek is the defining feature of the property, supporting healthy runs of coho salmon, chinook salmon, steelhead, and coastal cutthroat trout. The property also supports 23 listed animal species including the marbled murrelet and the northern spotted owl. The property will be managed by the DPR in consultation with the Save the Redwoods League and the Coastal Conservancy. A management plan being developed will promote the return of old growth forest features and habitat values, and provide for compatible recreation and educational opportunities.

In another project, the WCB approved acquisition of 691 acres in the Van Duzen River watershed. This parcel is in addition to 716 acres of the Grizzly Creek Forest acquired by the WCB in 1999. Both parcels protect old-growth redwood forest. The DFG has identified the current expansion as critical to the recovery of the marbled murrelet. The property also includes riparian corridors along Grizzly Creek and the Van Duzen River and will become part of the Grizzly Creek Redwoods State Park.



**San Francisco Bay Area Wetlands Protection and Restoration, Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma Counties.** This project provides funds to the California Coastal Conservancy to implement the highest priority wetlands protection and restoration projects in the San Francisco Bay Area. Projects will be located in the Napa-Sonoma Marshes; at Suisun Creek; Hamilton Airfield, Bel Marin Keys, and along the Petaluma River; in the South Bay salt ponds and Guadalupe Creek; Lake Merritt in the City of Oakland and Aquatic Park; East Shore State Park and Berkeley Meadows; and in shoreline wetlands in the City of San Francisco. Spartina control will be implemented in several counties where the non-native cordgrass, *Spartina alternifolia*, has become established.

Funds will be used for technical studies, detailed design and/or construction projects for marsh restoration; projects to improve water quality for anadromous fish; restoration of tidal flows; restoration of natural spring-fed channels and riparian habitat; and for public outreach. This long-term undertaking is a cooperative effort among many agencies including the USEPA, USFWS, RWQCB, the San Francisco Estuary Institute, San Francisco Bay and Development Commission, DFG, CalFed, the Santa Clara Water Agency, and local cities and counties. When completed, many thousands of acres of tidal wetlands and marshes will have been restored, creating lasting benefits to sensitive species and the populace of the Bay Area.



**Petaluma Marsh Wildlife Area, Bahia Wetlands Unit, Marin County.** Using a grant from the WCB, the Marin Audubon Society assisted in a project to purchase an estimated 645 acres located in the city of Novato. The property is located near the mouth of the Petaluma River and had been slated for development. With topography from near sea level to adjacent hillsides, the acquisition supports blue oak woodland, salt marsh, and annual grasslands. The interface of blue oak woodland and salt marsh is unique. Numerous sensitive species are found on the property, including the federally-listed soft bird's-beak and endangered salt marsh harvest mouse, as well as the northern harrier, salt marsh yellowthroat, and San Pablo song sparrow. The Bahia tract's shallow waters of diked baylands are important foraging and resting habitat for migratory shorebirds. It was the top acquisition priority of the North American Waterfowl Management Plan's San Francisco Bay Joint Venture. Other partners to the acquisition include the State Coastal Conservancy, Marin County Open Space District, Marin Community Foundation, Marin Baylands Advocates, CALFED, and Caltrans. Additional funding was provided by the Marin Baylands Fund and the North American Wetlands Conservation Act.



**Watsonville Slough, Santa Cruz County.** This property is located on the coastal plain west of Watsonville and represents one of the largest unfarmed and undeveloped areas along the coast in Santa Cruz County. The 289-acre parcel encompasses the majority of the upper watershed of Galighan Slough, one of the major sloughs and tributaries within the Watsonville Slough Complex. Habitat types found on the property include coastal live oak woodland, maritime chaparral, coastal scrub, conifers and wetlands. A number of listed and sensitive species are found on the property including the Santa Cruz long-toed salamander, California red-legged frog, California tiger salamander, and robust spineflower. Acquisition of this property represents a cooperative project involving the Trust for Public Land (TPL), Caltrans, the Coastal Conservancy, the USFWS, NPS, and DFG.



**Morro Bay Area, San Luis Obispo County.** The Morro Bay area includes Morro Bay and Montana de Oro State Parks and provides habitat for a suite of listed species found only within the Morro Bay watershed. Morro Bay, part of the National Estuary Program, is a bird sanctuary. The WCB has been instrumental in purchasing key parcels of property to protect portions of the Morro Bay dune ecosystem. These parcels total more than 400 acres and are key links in the Morro Bay Dunes Greenbelt, a community initiated effort to create a habitat and trail corridor connecting Montana de Oro State to Morro Bay State Park, as well as to other open space areas in the Morro Bay watershed. Partners in the project include The Trust for Public Lands, the Morro Estuary Greenbelt Alliance, the Morro Bay National Estuary Program, the USFWS, DPR, DFG, and State Coastal Conservancy.



**Dressler Ranch, Mono County.** In 2003, the WCB completed acquisition of the Dressler Ranch in Mono County. The WCB partnered with the DFG, Caltrans, and the American Land Conservancy to complete the project. The land has been put into a conservation easement that bars development and allows only normal cattle ranching operations. The California Rangeland Trust will hold the easement and monitor it in perpetuity. The effort is designed to protect wildlife habitat while encouraging compatible agricultural practices on property located immediately west of Bridgeport. The property lies along the eastern slope of the Sierra Nevada in Bridgeport Valley along National Scenic Highway 395. Encompassing more than 6000 acres, the ranch provides habitat for the sage grouse and protects more than 10 miles of riparian habitat.

**Potrero Canyon, Riverside Canyon.** This project represents an expansion of the DFG San Jacinto Wildlife Area by more than 8500 acres. The property comprises a flat, alluvial valley with unfragmented Riversidean sage scrub, riparian woodlands, oak woodland, and annual grasslands. Thirty-one threatened and endangered species, and species of special concern, including the California gnatcatcher and least Bell's vireo, occur on the site. The property is estimated to have approximately 2,380 acres of occupied Stephen's kangaroo rat habitat and also supports one of the densest populations of the kangaroo rat in western Riverside County. Conservation of the property ensures connectivity between national forest land and other conserved areas in Riverside County's regional Multiple Species Habitat Conservation Plan (MSHCP) and Natural Communities Conservation Plan (NCCP).



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Photo courtesy Riverside County Integrated Project



DFG File Photo



Dan Marschalek, DFG File Photo

**Rancho Jamul, San Diego County.** The WCB recently acquired approximately 3,210 acres of land located in the Hollenbeck Canyon area known as the Daley Ranch Property. The acquisition project preserves critical habitat and wildlife corridors identified in the San Diego County MSCP and provides a connection between the DFG's Rancho Jamul Ecological Reserve and Hollenbeck Canyon. It will eventually connect other wildlands with the Cleveland National Forest. Habitat includes coastal sage scrub, chaparral, oak woodlands, riparian forests, freshwater marshes and grasslands. This property supports a large number of listed species, including the California gnatcatcher, San Diego thornmint, orange-throated whiptail, and Quino checkerspot; sensitive species such as the burrowing owl, golden eagle, and Hermes copper; and a diverse mammal fauna, including mountain lion, bobcat, coyote, and eleven species of bats.