

Sacramento Valley Bioregion

The Sacramento Valley Bioregion, a watershed of the Sierra Nevada, is rich in agriculture, but also significant as the seat of California's state government. Lying halfway between the Pacific Ocean and the Sierra Nevada, the Sacramento Valley affords convenient travel time to San Francisco and Lake Tahoe. The bioregion encompasses the northern end of the great Central Valley, stretching from Redding to the southeast corner of Sacramento County. Its southern boundary borders the northern edge of the Sacramento-San Joaquin River Delta. Sacramento, the home of California's state Capitol, sits at the confluence of the Sacramento and American Rivers.

Location, Cities, People

The broad, flat valley that comprises this bioregion touches nine counties, including all of Sutter, most of Sacramento, and Yolo, and portions of Butte, Colusa, Glenn, Placer, Shasta, Tehama, and Yuba counties. Sacramento, with a population of about 400,000, is the bioregion's largest city and ranks seventh in the state behind Fresno, Long Beach, San Francisco, San Jose, San Diego, and Los Angeles. Other large cities, all smaller than Sacramento, include Redding, Chico, Davis, West Sacramento, and Roseville. More than 1.7 million people inhabit this bioregion, based on 1990 census figures. The cultural roots of the region date from Native American inhabitants, such as the Wintun Indians to 19th century settlers who established and worked the farms and ranches.

Tourist Attractions, Industries

Sacramento, capital of the nation's most populous state, is a tourist attraction in itself. The state Capitol in downtown Sacramento houses the offices of the governor, lieutenant governor, and state Legislature. The Capitol is filled with relics of California's colorful history and new displays that reflect contemporary life in each of the 58 counties. Other attractions of the capital city include Old Sacramento on the riverfront, Sutter's Fort, the California State Railroad Museum, cruises on riverboats, and

the annual Jazz Jubilee that attracts bands from all over the world. Traveling north, one can see the Sutter Buttes rising 2,132 feet from the valley floor, and visit the national and state wildlife refuges and reserves in the valley's many wetland areas along the Pacific Flyway. On the eastern edge of the bioregion is Folsom Dam and Folsom Lake.

Agriculture, state government, lobbying, and public relations are important industries in the Sacramento Valley bioregion, but only three of the counties — Sutter, Yolo, and Colusa — rank among California's top 20 agricultural producers. Still, the valley is known for tomatoes, rice, and olives, among other prominent crops produced in the plentiful fields and orchards. Food canneries, high-technology, and biotechnology play a significant role. Once, the bioregion had a substantial military presence with three Air Force bases, but downsizing changed the picture, closing Mather, then adding McClellan to the closure list, but sparing Beale. Shipping is important in the port of West Sacramento.

Climate, Geography

The changing of the seasons is more evident in the Sacramento Valley than in the coastal regions to the west. Summer hot spells that drive daytime temperatures into triple digits are relieved by cooling "Delta breezes" that carry moist air from San Francisco Bay eastward through the Delta and into the Sacramento area, pushing the mercury back into the more comfortable 80s and 90s. Leaves turn gold during the brief, mild autumn that ends rather abruptly with the coming of winter fog around Thanksgiving. The so-called tule fog blankets the valley for much of the winter season from December into February, keeping temperatures chilled. Except during droughts, rainfall is frequent in winter, but snowfall is unusual because temperatures, particularly in the daytime, normally remain well above freezing. The Sacramento Valley is flat for the most part, but is situated within distant view of mountains, which are particularly visible on clear days. To

the west, the coastal range foothills loom on the horizon, while the snow-capped peaks of the Sierra Nevada can be seen to the east.

The valley's two major rivers — the Sacramento and American — carry water that originates in the Sierra Nevada south and west into the Sacramento-San Joaquin River Delta. The importance of the Delta cannot be overstated, for it supplies water to about two-thirds of California's 32 million population. Other rivers include the Cosumnes — the largest free-flowing river in the Central Valley — the lower Feather, Bear, and Yuba Rivers.

Plants, Wildlife

Oak woodlands, riparian forests, vernal pools, freshwater marshes, and grasslands provide the major natural vegetation of the Sacramento Valley Bioregion.

The Sacramento Valley is the most prominent wintering site for waterfowl, attracting more than 1.5 million ducks and 750,000 geese to its seasonal marshes along the Pacific Flyway. Species include northern pintails, snow geese, tundra swans, sandhill cranes, mallards, grebes, peregrine falcons, heron, egrets, and hawks.

Black-tailed deer, coyotes, river otters, muskrats, beavers, ospreys, bald eagles, salmon, steelhead, and swallowtail butterflies are just some of the wildlife that abounds in this bioregion. Species on the endangered species list include the winter-run Chinook salmon, delta smelt, giant garter snake, and the western yellow-billed cuckoo.

For a complete list of the Sacramento Valley Bioregion's federal and state endangered, threatened and rare species, please refer to the chart at the end of this bioregional section.

CURRENT CONSERVATION INITIATIVES

*The Central Valley Habitat Joint Venture (CVHJV) is responsible for protecting wetland habits in the Central Valley. The 3,500-acre **Yolo Bypass Wildlife Area** — the largest wetland restoration project of its kind in the West — is one of the Venture's most significant habitat restoration accomplishments to date.*

The Central Valley of California is the most important waterfowl wintering area in the Pacific Flyway, supporting 60 percent of the total duck and goose population. At one time, the Central Valley included some three-and-a-half million acres of wetlands (this includes both the Sacramento and San Joaquin Bioregions). By 1985, however, this number had dwindled to 292,000 due in most part to wetland conversion by agriculture, flood control, navigation projects and urban expansion.

With the habitat in serious decline, an effort was needed to protect remaining habitat and address the reasons for its decline. In July 1988, the Central Valley Habitat Joint Venture (CVHJV) was established as a cooperative effort of state and federal agencies, and private organizations including representatives from the California Waterfowl Association, Defenders of Wildlife, Ducks Unlimited, National Audubon Society, The Nature Conservancy, The Trust for Public Lands, Waterfowl Habitat Owners Alliance, and many other organizations.

The goals of the CVHJV are to protect, maintain, and restore habitat and increase waterfowl populations in the Central Valley consistent with the objectives of the North American Waterfowl Management Plan. Specifically, CVHJV aims to 1) protect 80,000 acres of existing wetlands through fee acquisition or conservation easement; 2) restore and protect 120,000 acres of former wetlands, 3) enhance the existing public and private wetlands of the Central Valley, 4) enhance waterfowl habitat on 443,000 acres of private agricultural land, 5) secure a firm water supply for the National Wildlife Refuges and State Wildlife Areas of the Valley, plus Grassland Resource Conservation District, and 6) secure Central Valley Project Power for lands dedicated to wetland management. CVHJV member agencies and organizations use general operations dollars, special legislative appropriations, and in-kind contributions to get the job done, often in creative and unprecedented ways. Protection strategies include habitat acquisition, conservation easements, leases, and management agreements with private landowners. One of its great successes to date is the 3,500-acre Yolo Bypass Wildlife Area — the largest wetlands restoration project of its kind in the West.

The U.S. Army Corps of Engineers (Corps) built the Yolo Bypass to hold floodwater from the Sacramento River. The California Department of Water Resources and the state Reclamation Board are responsible for its operation. The restoration calls for 2,323 acres of seasonal wetlands, 484 acres of uplands and grasslands, 185 acres of perennial wetlands, and 28 acres of riparian forest.

The Yolo Bypass is a cooperative restoration program of the Corps, California Department of Fish and Game, Yolo Basin Foundation, U.S. Fish and Wildlife Service, California Department of Water Resources, Wildlife Conservation Board, and Ducks Unlimited, a conservation group that promotes and helps establish wetlands and other waterfowl habitat. The Corps, Wildlife Conservation Board, California Department of Transportation and California Department of Fish and Game have all helped to fund the effort.

When the CVHJV has succeeded with its mission, the Central Valley is expected to support an average of 4.7 million wintering ducks, 865,000 geese and swans plus a breeding population of 400,000 ducks, including 300,000 mallards. To date, CVHJV has attained 84% of its wetland protection objective. Future efforts will focus on filling in the habitat “gaps” in the Valley by protecting habitat in new basins and counties to facilitate better distribution of waterfowl throughout the Valley, improve habitat diversity and abundance, and enrich the lives of all Valley residents. The work of CVHJV is a model of what coordinated planning and cooperative efforts can bring about.

For more information contact: Ruth Ostroff, Joint Venture Coordinator, Central Valley Habitat Joint Venture, U.S. Fish and Wildlife Service at (916) 979-2085 or Cheryl Chipman, Yolo Basin Foundation at (530) 758-1018.

The Cosumnes River Preserve was created to safeguard much of the Cosumnes River landscape and protect key elements of the Sacramento-San Joaquin River Delta. The project is a broad-based effort to restore and safeguard the integrity of the Cosumnes River and its surrounding habitat features.

The Cosumnes is a small river whose

headwaters rise only 8,000' above sea level and whose course from the Sierra Nevada to the San Joaquin Delta is just 80 miles long. Though small, the Cosumnes is far more important than its size would indicate as it is the only undammed river on the west slope of the Sierra. Because of its natural flow regime, the Cosumnes is a unique laboratory in which nature can heal and regenerate itself with only a little help from humans. Undammed, the Cosumnes still engages in the natural process of flooding and silt deposition that once was common to all of the state's rivers. The ongoing process of flood and retreat makes the Cosumnes an ideal candidate for restoring a major portion of its former floodplain, “riparian” (riverside) forests, and marshes.

However, the Cosumnes River watershed is an ecosystem under threat from development as Sacramento and adjacent counties continue to grow. To protect this threatened ecosystem, the Cosumnes River Preserve was created to safeguard the landscape and protect key elements of the Sacramento-San Joaquin River Delta. The project is a broad-based and multi-faceted effort to restore and safeguard the integrity of the Cosumnes River and its surrounding landscape. It is also the flagship project of the California Riparian Habitat Joint Venture (CRHJV), which has 11 public and nonprofit partners seeking to replace fragmented habitat with habitat that can support viable breeding populations of native birds.

CRHJV partners are working to purchase and manage the land in and around the Preserve. The state Wildlife Conservation Board (WCB) of the California Department of Fish and Game bought a 1,020-acre piece of a 4,356-acre ranch and The Nature Conservancy (TNC) is working with other partners to purchase the remaining 3,336 acres. Together, TNC, the U.S. Bureau of Land Management, Ducks Unlimited, the CALFED Bay-Delta Program, the California State Lands Commission, the County of Sacramento, and WCB are responsible for managing the preserve.

The partners have agreed on a Cooperative Management Agreement to manage all the lands as an ecological unit and are working with local landowners to improve management in the entire watershed. The goal of the management program, known as the “Farming for Wildlife”

program is to meet environmental and economic objectives without sacrificing one for the other. To do so, the partners aim to create farmland that is: 1) wildlife friendly, 2) sustainable, 3) maintains long-term profit, and 4) incorporates the local farm community. When fully implemented, the farm plan will have 1040 acres of certified organic farmland.

Reduced pesticide use on the preserve will decrease pollutants into the Delta and provide enhanced water quality for fishery habitats in the immediate vicinity of the preserve. Seasonal flooding will help to promote the decomposition of rice straw which, in turn, will provide high quality winter habitat for sandhill cranes, ducks, gees, shorebirds, tri-color blackbirds and Swainson's hawks. The operational costs of wetlands management on the entire preserve will be offset through revenues generated from preserve farmlands as well as grants from organizations such as the National Fish and Wildlife Foundation.

For more information contact: Riparian Program Manager, Wildlife Conservation Board at (916) 445-1072; Emily Tibbott, The Nature Conservancy at (415) 281-0442; Rick Cooper, Cosumnes River Preserve at (916) 683-1701.

*In the Sacramento Bioregion and throughout California, the **Riparian Habitat Conservation Program**, which was created to conserve, increase, and improve riparian habitat throughout the state, is working to protect and enhance habitat for California's native birds and neotropical migratory birds. A number of projects are underway thanks to support from the Joint Venture effort.*

The California Riparian Habitat Conservation Program (RHCP) was initiated and signed into law by Governor Wilson in 1991 as a component of his comprehensive "Resourceful California" agenda. The primary purpose of the RHCP is to conserve, increase, and improve riparian habitat throughout California in a common effort to protect and enhance habitats for both California's native birds and neotropical migratory birds.

Since RCHP began in 1992, the Wildlife Conservation Board, which administers the program, has approved a wide variety of

projects to acquire, restore, and enhance a total of approximately 12,000 acres of riparian areas. The projects include:

- Rank Island along the San Joaquin River in Fresno County, where the purchase of more than 270 acres of riparian habitat and natural lands containing a forest of sycamores, cottonwoods, willows and oaks occurred. The property has been turned over to the California Department of Fish and Game for management and protection, and work is already underway to restore riparian habitat at a sand and gravel mine on the island.
- In eleven counties from Humboldt to Fresno, funding for 15 projects to enhance and restore riparian areas by planting vegetation, stabilizing streams, and using fencing to improve grazing management has begun. The projects cultivate and protect habitat on more than 20 miles of streams, sloughs, and lake shorelines and provide jobs and educational opportunities for people in the area.
- In Glenn, Colusa, and Tehama counties, RHCP has initiated a partnership involving ranchers, the California Waterfowl Association, and Natural Resources Conservation Service that will help restore more than 10 miles of riparian habitat and develop more than 645 acres of nesting habitat for waterfowl and ground-nesting birds, and create 13 brood ponds. This important project also will help to set the stage for improved water retention in these watersheds and will explore new "wildlife-friendly" livestock management practices.

Under RHCP, WCB is also assembling a statewide database on existing riparian habitat. This information serves as a component of the California Rivers Assessment, a multi-agency data collection effort of the Resources Agency in conjunction with the National Park Service and the University of California, Davis. The first phase of the inventory has integrated riparian and aquatic data for 13 of the State's 160 river basins and survey results of more than 1,000 river managers and scientists. The second phase is now underway and has added data for 27 additional river basins.

Satellite imagery is being used in conjunction with Governor Wilson's Wetlands Policy to classify wetland and riparian habitat, particularly in the Central Valley, Bay Area, and Southern California coast. This information benefits resource managers, land use managers and developers to better manage and protect riparian areas.

For more information contact: Riparian Habitat Conservation Program Manager, Wildlife Conservation Board at (916) 445-1072.

*The Yolo County Resource Conservation District is working with landowners and local government agencies to promote **Total Resource Management Practices** that blend farming and conservation practice and to promote understanding among urban communities about how farming can be done in an environmentally sensitive and economically sound manner in order to promote community support for the farming industry in the region.*

A trend toward blending farming and the conservation of biodiversity is taking deeper root in the fields, orchards, and vineyards of California's farms and ranches, which produce a \$20 billion cornucopia of crops that rank the Golden State No. 1 in agriculture. Biodiversity on the farm is nothing new, as growers and resource professionals will attest. But an increasing number of growers, who have long shown a sense of stewardship, are integrating wildlife habitat into their farming.

For all of its intrinsic values creating wildlife habitat requires some effort and poses some risk. The effort is in changing old ways and implementing new practices: the risk, in the eyes of some farmers, is the possibility of attracting endangered species. As an inducement to enhance California's biodiversity with total resource management-style farming, the U.S. Bureau of Reclamation provided a \$1.7 million "challenge" grant to the California Association of Resource Conservation Districts (CARCD) for a 3-year program intended to help growers learn more from each other about total resource management, and promote understanding among urban communities about farming in an environmentally sensitive and economically sound manner.

CARCD, which represents 110 resource conservation districts (RCDs) statewide, says the grant will help pay for a team of specialists to analyze the innovations as well as reduce the risk to the growers' livelihoods. Since the program began, twenty farms are participating in the program from five RCDs — Yolo County, Pond-Shafter-Wasco (Kern County), West Stanislaus, Cachuma (Santa Barbara County), and Kings River.

The goal of the program is to integrate natural resources with farming and to increase the understanding among farmers and public agencies about how biodiversity and agriculture are interconnected. The project allows farmers to test innovative practices and document what works and what doesn't. In Yolo County, for example, where close to 96 percent of the land is in agricultural or range use, about 5 percent of the growers are integrating habitat and biodiversity into their farming. Some farmers are building "tail water ponds" at the drainage end of row crop fields. These small ponds collect and recycle irrigation runoff, prevent farmland from washing away as sediment, promote nutrient and chemical biodegradation, recharge groundwater, and provide an ideal home for waterfowl and migrating ducks. The ponds fill with runoff both winter and summer, creating a mini-wetland that supplies habitat for a variety of species.

In other places, hedgerows - the vegetated corridors between fields and along the edges - are replacing bare soil. When planted with native grasses, shrubs, trees, and other vegetation, the hedgerows provide a home for a multitude of species, prevent soil erosion, and block out invasive weeds such as yellow star thistle, which can spread into a field and ruin the crop. Native grasses and rushes also help to control erosion when planted on the banks of streams, canals, and natural sloughs and they help to crowd out the non-native cattails and bulrushes that choke waterways and hamper flood control. The native grasses are also important ground cover as they avoid the expense of disking, retain moisture in the soil, increase organic matter, and reduce the need for fertilizer. They also attract insects that feed on crop-eating aphids and other "pests." Once established, the grasses are easy to maintain as they require only occasional mowing and, with the right seed mix, stay green all year,

serving as a fire retardant and weed suppressant.

The Yolo County Resource Conservation District's sustainable agriculture education program involves exposing urban high school students to agriculture through hands-on experiences on farms. Through the program, known as Farming, Agriculture, and Resource Management for Sustainability (FARMS), students study alternative agriculture practices, such as non-chemical pest control, cover cropping, and integrated pest management (IPM) through visits to Sierra Orchards' walnut orchard in Woodland, CA and other farms, vineyards, and dairies. The students conduct group research projects in conjunction with mentors from the University of California at Davis, Santa Rosa Junior College, and resource management agencies like the U.S. Department of Agriculture's Natural Resources Conservation Service, present the projects to their peers and University professors, and experience an overnight stay with a farm family. In 1999, the program hopes to expand from its current four sites in the Central Valley to two additional sites in Chico (north Valley) and Fresno/Kearny (south Valley).

This program provides positive benefits both for future farmers and future consumers who understand the linkages between sustainable agriculture and wildlife conservation. The program is initiated by farmers (Sierra Orchards) in conjunction with mentors from local Farm Bureau, state, and federal agencies. The program also provides schools with curriculum and materials on native species conservation developed by the California Foundation for Agriculture in the Classroom (CFAITC). These materials allow classes to become involved in agriculture/environmental discussions before, during, and after the completion of the project for a longer-lasting impact.

Farmers who desire to undertake on-farm conservation must be prepared to undergo a process of trial and error as they find out what works best on their farms. Those already taking these steps have some positive things to say about the benefits of Total Resource Management, both for their farms and for their quality of life.

For more information contact: Yolo County RCD at (530) 662-2037 or via their website at <http://www.yolorcd.ca.gov>; Pond-Shafter-Wasco RCD at (805) 861-4129; Kings River RCD at (209) 237-5567; Cachuma RCD at (805) 928-9269; California Association of Resource Conservation Districts at (530) 756-2565.

*Passed by the State Legislature in 1986, Senate Bill 1086 called for a **Sacramento River Management Plan** and its tributaries that would protect, restore, and enhance both fisheries, and riparian habitat.*

The overall goals of the SB1086 program are to preserve remaining riparian habitat and reestablish a continuous riparian ecosystem along the Sacramento River between Redding and Chico, and to reestablish riparian vegetation along the river from Chico to Verona. Riparian habitat is actually a diverse mosaic of habitat types, which is part of a bigger picture that includes the entire river ecosystem and the humans within it.

SB1086 established an Advisory Council, composed of representatives of state and federal agencies, county supervisors, and representatives of landowner, water contractor, commercial and sport fisheries, and general wildlife and conservation interests. After more than 50 lengthy meetings and workshops, the Advisory Council and its action teams developed a plan which included a specific and action-oriented fisheries plan and a more conceptual riparian habitat plan.

The "Upper Sacramento River Fisheries and Riparian Habitat Management Plan" was published in 1989 and many of the fisheries action items have since been, or are currently being implemented. Actions include the construction of fish bypass structures at diversions on Sacramento River tributaries, the Shasta Dam temperature control structure, and re-establishment of continuous riparian vegetation along designated stretches of the Sacramento river. In May 1998, a draft Sacramento River Conservation Area Handbook was produced to provide a common frame of reference to all parties involved in riparian habitat issues along the river. The handbook addresses both the biological basis and the institutional framework, including funding, for restoration work along the river.

In the management plan, a Conservation Area for the Sacramento River has been defined, encompassing approximately 213,000 acres of potential riparian habitat or valley oak woodland. The Conservation Area, based on soils and floodplain features, denotes the location where landowners would be eligible to participate in conservation programs. For this reason, the Conservation Area is much broader than the present day riparian corridor or the area in the inner river zone guideline. Ownership of property within the Conservation Area will not result in any regulation or taxation to the landowner — it merely makes landowners eligible to participate in voluntary programs.

The SB 1086 program seeks to use an ecosystem approach to restoring threatened

and endangered species using the least environmentally damaging but protection technique available. Restoration activities must operate within the parameters of local, state, and federal flood control and bank protection programs. Participation by private landowners and local entities is voluntary and their concerns are given full consideration.

For more information contact: Burt Bundy at (530) 384-2734.