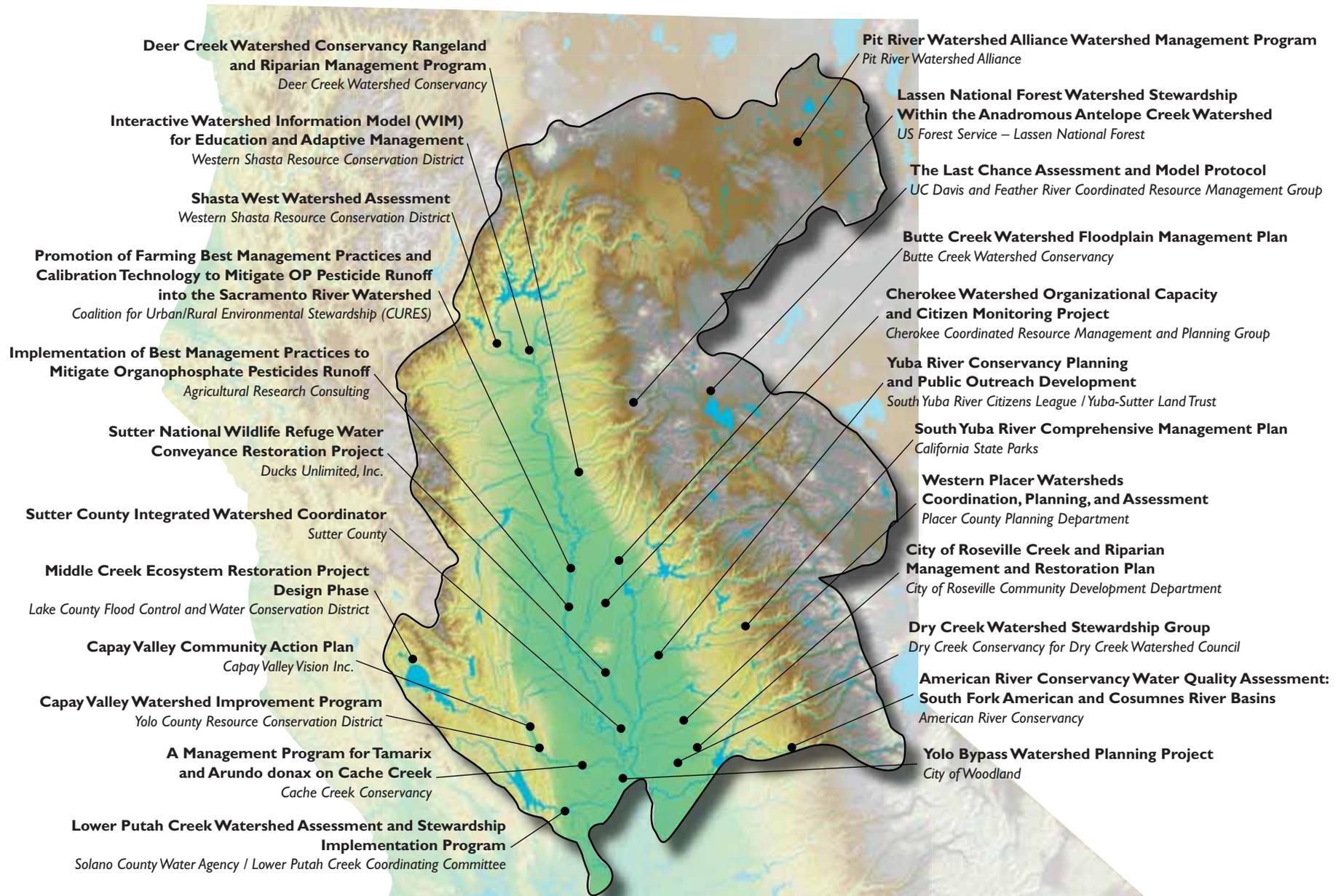




Sacramento Valley Region



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The Last Chance Assessment and Model Protocol

UC Davis and Feather River Coordinated Resource Management Group



The proximity of a road caused constant sedimentation in Artray Creek, as seen in this pre-restoration photo.

Award Amount
\$582,000

Watershed
Feather River and Last Chance Creek Watersheds

County
Plumas County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2
State Assembly: 4
State Senate: 3

Purpose

This project measures watershed health and evaluates the suitability of future projects through use of the University of California Davis Hydrologic Research Laboratory (UCDHRL) model.

Project Goals

- Purchase and install additional field equipment to increase field monitoring capabilities in the Last Chance Creek Watershed.
- Provide assessments of environmental and water balance impacts of recent and currently funded restoration projects under flood and drought scenarios.
- Help select future restoration projects.
- Create a general protocol to be applied to other Bay-Delta Watersheds.

Benefits to the CALFED Program

The Ecosystem Restoration Program Plan states that the Feather River Watershed contributes to the health of the Bay-Delta system by sustaining ecological processes that support anadromous fish and other aquatic and terrestrial wildlife and plant habitats. Streamflow, sediment, and nutrients coming from this watershed are important to the Bay-Delta. This project provides a tool that will build community capacity to assess and manage the Last Chance Creek Watershed as well as other major subwatersheds that make up the Feather River basin, the major water supply basin for the State Water Project, which is an integral inflow component to the Bay-Delta system. The assessment protocol developed as a result of the project will be available for use in other watersheds in the CALFED Program.

Project Overview

The Feather River Watershed is unique as a Sierran river in that approximately 10% of the watershed area is occupied by meadows and valleys. These features historically have served as water, sediment, and nutrient sinks that buffered the watershed from extreme floods, droughts, and landscape disturbances. Over time, approximately 98% of the meadows and valleys in the watershed have become severely entrenched and incised through the cumulative effects of mining, logging, grazing, road building, and extreme wildfire. Thus the watershed has lost the helpful function of these sinks.

The Last Chance Assessment and Model Protocol project is the result of a collaborative effort between the Feather River Coordinated Resource Management Group, the Plumas County Department of Public Works, the Plumas National Forest, and the University of California Davis Hydrologic Research Laboratory (UCDHRL). The project is developing, implementing, and field calibrating an assessment protocol for restoration projects in the Last Chance Creek Watershed, which is a 200 km² subwatershed of the Feather River. The assessment protocol examines the impact that restoration projects have had on the Last Chance Creek Watershed and is general enough so that it can be applied to other watersheds. As part of this assessment protocol, a watershed model is being developed using the UCDHRL watershed model. The model will cover subwatersheds within the whole of the Last Chance Creek Watershed, and it will be capable of assessing both the seasonal and long-term water balances of drought and wet periods, including floodflows and sediment load. The model will also be used to select future restoration projects and project sites, and has the potential to be used to evaluate the watershed effects of large-scale land management decisions in the Feather River basin.



A post-restoration view of Artray Creek, where the road and gully were removed, and cattle access has been restricted.

Contact Information

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City of Roseville Creek and Riparian Management and Restoration Plan

City of Roseville Community Development Department



A sunny day at Secret Ravine, one of the creeks in the City of Roseville.

Award Amount
\$228,470

Watershed
Dry Creek and Pleasant Grove Creek Watersheds

County
Placer County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 4
State Assembly: 4
State Senate: 4

Purpose

To develop a comprehensive creek and riparian management and restoration plan for City of Roseville creeks.

Project Goals

- Engage the community and identify stakeholders' issues and values.
- Develop a plan for the City's creeks that balances public health and safety needs with natural resource functions.
- Identify and prioritize riparian restoration projects.
- Establish a long-term public outreach program that fosters partnerships and builds community capacity to implement the Plan.
- Increase community water conservation to improve water supply reliability.

Benefits to the CALFED Program

The City of Roseville is an integral part of the CALFED solution area as well as one of the fastest-growing communities in the Sacramento Valley region. Implementation of the Plan will produce measurable results for typical urban watershed stressors such as flooding, stormwater quality, erosion, and siltation. The result is improved wildlife habitat, water quality, and overall watershed health both in Roseville and in the Bay-Delta. The Plan will enhance local capacity to manage watersheds through actively involving community members in the stakeholder process. The project's community water conservation plan will help the Water Use Efficiency Program meet their goal of increasing urban water conservation measures.

Project Overview

The City of Roseville has 38 miles of creeks in two watersheds that drain into the Sacramento River. Using a consensus-based approach, the City is developing a management plan for these watersheds. Implementing the Plan will benefit the ecosystem and enhance the community's capacity to make better land use decisions.

Development of the City of Roseville Creek and Riparian Management and Restoration Plan (Plan) is coordinated with other watershed planning and restoration projects undertaken by Placer County, the Dry Creek Conservancy, the Dry Creek Watershed Council, and the City of Roseville. Together, they are producing a comprehensive creek and riparian management and restoration plan suitable for adoption by the City of Roseville. The Plan also promotes specific watershed conservation, maintenance, and restoration actions by developing a comprehensive restoration strategy for the City's creek and riparian areas.

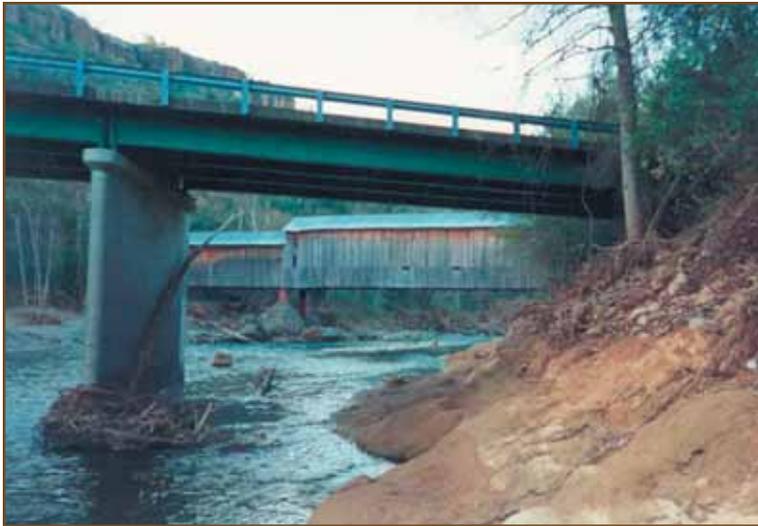
The other major component of the Plan is the establishment of a long-term public outreach program to foster partnerships with complementary organizations and build community capacity to implement the plan successfully. Outreach materials educate the community about the CALFED Program and sound watershed stewardship principles, including how local land management practices affect city creeks and, in turn, the Bay-Delta system. Increasing community water conservation to enhance local water supply reliability is an additional goal of the outreach program. Both treated water and runoff drain into local creeks. Reduction in water use results in reduced runoff and reduced need for wastewater treatment, improving water quality for the watersheds as well as the Bay-Delta.



Project workshop attendees discuss City of Roseville creeks.

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Heavy debris buildup on Butte Creek caused by a large storm.

Award Amount
\$582,510

Watershed
Butte Creek Watershed

County
Butte, Tehama, Plumas, Glenn, Colusa, and Sutter Counties

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2
State Assembly: 3
State Senate: 4

Purpose

This project develops a Floodplain Management Plan (FMP) for the Butte Creek Watershed in alignment with an Integrated Hazard Mitigation Plan for Butte County.

Project Goals

- Develop flood protection measures that protect life and property as well as enhance fish and wildlife habitat.
- Encourage coordination among the agencies responsible for providing flood protection, post-flood restoration, and protection of habitat.
- Build on an existing stakeholder process for public involvement and outreach, and develop/initiate public education in local schools.
- Support the development of pre- and post-flood emergency response efforts.

Benefits to the CALFED Program

The Butte Creek Watershed FMP reduces erosion and silt loads during flood events and reduces contaminants entering the Butte Creek Watershed, thereby improving water quality and overall watershed health. Butte Creek is a priority stream of the Ecosystem Restoration Program and flows to the Bay-Delta via the Sacramento River. These improvements also benefit the watershed's salmon runs, which include the endangered spring-run Chinook salmon. Using their stakeholder-driven process to develop a FMP, the Butte Creek Watershed Conservancy (Conservancy) facilitates and improves coordination, collaboration, and assistance among government agencies, other organizations, and local watershed groups, and familiarizes stakeholders with Conservancy and CALFED Program goals.

Project Overview

This project develops a Floodplain Management Plan (FMP) for the Butte Creek Watershed. The Butte Creek Watershed Conservancy (Conservancy) was formed to preserve, enhance, and restore the economic and ecological heritage of the Butte Creek Watershed by engaging local landowners to encourage stewardship and community participation. The impetus for this management plan was conceived through the Conservancy's stakeholder-driven process that facilitates coordinated management of resources to maintain a sustainable river ecosystem for the Butte Creek Watershed. Through this process, the Conservancy identified issues and concerns important to the local community. These are the cornerstones of the FMP. They include: education and public outreach, recreation, fisheries, fuel load, timber management, and roads. In addition, the current FMP work concerns groundwater, water supply, water quality, and flood damage control. Education and public outreach are important aspects of FMP development. Educating the public provides opportunities for the Conservancy to advance public awareness of the health of the community's watershed. Ultimately, the FMP will provide guidelines and measures for landowners and federal, state, and local government agencies to protect public health and safety from the impacts of flooding. Measures developed in the Plan will reduce the potential for soil erosion and release of chemicals during flood events; provide resource allocation guidelines for emergency response and preparedness, and present methodologies to potentially lower insurance costs to property owners. The FMP is integrated into, and used to define aspects of, an Integrated Hazard Mitigation Plan for countywide implementation. Through Conservancy partnerships with the Butte County Resource Conservation District, the City of Chico, Big and Little Chico Creek Watersheds, and the Cherokee Watershed, results and methods developed for the FMP will be disseminated across jurisdictional and watershed delineations.



Floodwaters can cause major damage. Floodwater management and damage reduction are key goals of the Butte Creek FMP.

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The east Sutter Bypass with the Sutter Buttes visible in the background.

Award Amount

\$195,200

Watershed

Sacramento River, Butte Creek, Feather River, Yuba River, and Bear River Watersheds

County

Sutter County

CALFED Region

Sacramento Valley Region

Legislative Districts

US Congress: 2

State Assembly: 2

State Senate: 4

Purpose

Provide comprehensive coordination with watershed activities in Sutter County as well as those activities that directly affect the County (such as in Yuba, Butte, Colusa, Yolo, and Placer Counties, and along the Sacramento River) that will allow Sutter County to become more active in watershed-wide approaches to planning.

Project Goals

- Coordinate public workshops to provide opportunities for local, State, and Federal representatives to learn about various groups' and agencies' projects.
- Act as a conduit to provide and disseminate information among local stakeholders, watershed groups, and local and state agencies.
- Plan projects to implement the watershed management program.

Benefits to the CALFED Program

The CALFED Ecosystem Restoration Program (ERP) has targeted the Sacramento River, the Butte Basin, the Feather River, and the Sutter Bypass as priority watersheds for restoration activities addressing streamflow, coarse sediment supplies, stream meander, floodplain processes, and water temperature. A number of ERP species of concern, including splittail, winter-, fall-, and spring-run Chinook salmon, steelhead trout, giant garter snake, valley elderberry longhorn beetle, and greater sandhill crane, inhabit these Sutter County watersheds and stand to benefit from coordinated restoration actions. By establishing a watershed coordinator, Sutter County is ensuring complimentary management of restoration efforts, and facilitates information exchange among citizens, project managers, and local and State agencies.

Project Overview

The Sutter County Integrated Watershed Coordinator project provides funding for official watershed coordination within Sutter County. The County contains a variety of watershed resources, such as the Sacramento River, the Feather River, the Sutter Bypass, and numerous interior streams, as well as urban and agricultural drainages. The CALFED Program and others have made tremendous investments in watershed projects in upper watersheds that affect Sutter County. However, prior to this project, Sutter County oversaw no current watershed planning efforts, either through the CALFED Program or other funding sources. Funding for this program helps to ensure that these and other planning and restoration efforts are coordinated and managed from a watershed approach, and that projects in the region are complimentary.

This project provides the Sutter County Department of Public Works with the resources to maintain contact with watershed groups and other stakeholders and to coordinate public workshops for stakeholders, including planners, and provides a County representative at watershed planning events. The Integrated Watershed Coordinator assumes a liaison role among the County, other government agencies, and local watershed groups. This coordinator is responsible for communications with the various County departments with regard to watershed planning efforts. The coordinator also assumes public outreach and education responsibilities.

This project serves to streamline and coordinate, and therefore improve, local and regional efforts toward ecosystem restoration, water quality, and water use efficiency. The project also improves coordination and communication among surrounding watersheds in the region.



Coon Creek at the east main drain.

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An excavator removes sediment from a failed crossing, restoring the natural water drainage pattern.

Award Amount
\$673,200

Watershed
Antelope Creek Watershed

County
Tehama County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 4
State Assembly: 3
State Senate: 1

Purpose

The purpose of this project is to make improvements to the upper Antelope Creek Watershed through restoration projects, improved forest management, and expanded outreach.

Project Goals

- Implement 34 restoration projects focusing on stabilization, restoration, and maintenance of ecological processes.
- Expand technology transfer/educational outreach to partners and watershed stakeholders.

Benefits to the CALFED Program

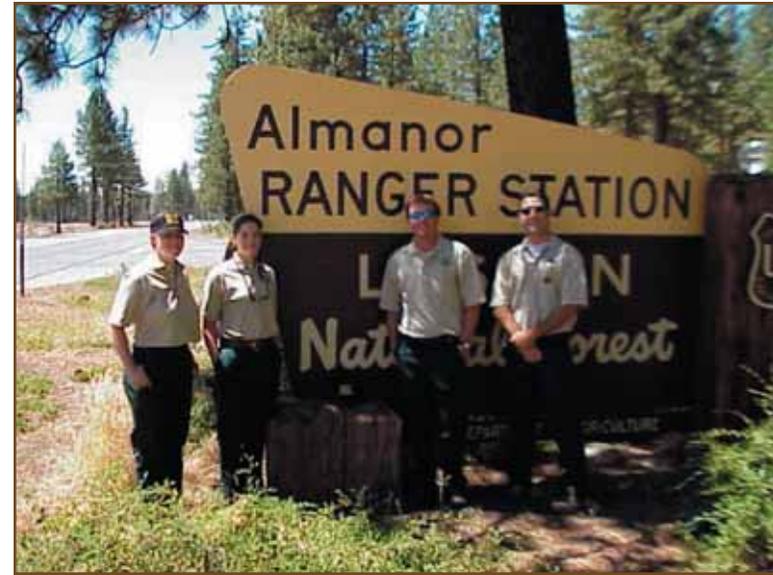
Antelope Creek is an eastside tributary to the Sacramento River and home to a number of important species, including anadromous fish. The Ecosystem Restoration Program Plan states that improved forest management in the Antelope Creek Watershed would protect riparian habitats and streamflows and help to prevent excessive sediment from being washed into the creek. This project addresses those concerns and improves forest management. It helps to achieve the goals of the CALFED Program through stabilizing and restoring riparian habitat, wetlands, and natural stream morphology, as well as aiding in the recovery of at-risk species. This project also encourages a greater understanding of ecological processes and links these projects to public education and the ongoing restoration efforts of other landowners.

Project Overview

Antelope Creek is an east side tributary to the Sacramento River that supports anadromous fish species, and is located within the Ecosystem Restoration Program's Butte Basin Ecological Management Zone. The creek historically supported fall- and spring-run Chinook salmon and steelhead trout. However, population estimates have declined significantly in recent years.

This project includes two primary elements. The first element is to implement 34 prioritized restoration projects in the upper Antelope Creek Watershed. The restoration activities focus on the stabilization, restoration, and maintenance of ecological processes and are designed to allow for adaptive management. This element includes the implementation of extensive erosion and sediment control projects and improved forest management designed to reduce source sediment production and produce more natural patterns of runoff. These actions will promote and maintain important ecological processes and functions. These activities will also protect and improve aquatic habitats by reducing sediment production through a variety of treatments. The restoration projects also include restoring wetlands and riparian areas through decommissioning roads, restoring natural stream morphology, and improving fish passage by upgrading culverts or replacing them.

The second element of this project works to expand public education and outreach. Public education and understanding of watershed restoration practices will increase the support for continued restoration work. This element will also expand the transfer and sharing of data and information with interested partners.



The campground education/patrol crew is responsible for teaching watershed stewardship principles and fishing regulations to campers and fishermen.

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Sutter National Wildlife Refuge Water Conveyance Restoration Project

Ducks Unlimited, Inc.



Construction of the first of six water control structures that improve water supply reliability and flow at the Sutter National Wildlife Refuge.

Award Amount

\$521,250

Watershed

Sacramento River Watershed

County

Sutter County

CALFED Region

Sacramento Valley Region

Legislative Districts

US Congress: 2

State Assembly: 2

State Senate: 4

Purpose

Increase the capacity of the existing water conveyance system of the Sutter National Wildlife Refuge to provide the highest quality habitat for wildlife and fish populations.

Project Goals

- Provide adequate water control to improve wetland management capability.
- Improve water supply reliability and flow.
- Restore the existing 5-mile-long water conveyance system.
- Replace or remove 40 water control structures.
- Stabilize and revegetate levees and other improvements.

Benefits to the CALFED Program

Much of California's wetlands have been lost to urban development and conversion to agricultural uses. This project provides direct ecosystem benefits by maintaining high quality habitat for wildlife by improving the supply and management of water on the Sutter National Wildlife Refuge. The refuge is part of the Lower Butte Creek system, identified by the Ecosystem Restoration Program as part of the Butte Basin Ecological Management Zone. This project includes improvements to better maintain and manage more than 1,600 acres of permanent and seasonal wetlands to support bird populations. Anadromous fish populations also benefit from the reliable flows that result from this project. Water quality improvements are achieved by stabilizing and revegetating levees to reduce siltation into the Bay-Delta system.

Project Overview

The 2,291-acre Sutter National Wildlife Refuge was established as part of a complex of refuges to provide habitat for migratory birds, particularly wintering species and those native to the Sacramento Valley. It is also intended to attract the migratory birds away from unharvested crops to minimize depredation. It is important that the refuge be managed to provide the highest quality habitat possible for wildlife and fish populations. The existing water conveyance system within the Sutter National Wildlife Refuge had reached a state of dilapidation to the point of marginal operation. Prior to this project, the water conveyance system was unable to meet essential management objectives that include:

- providing adequate water control for productive wetland management;
- enhancing ability to adaptively manage habitat to address resource needs;
- controlling and circulating adequate quantities of water to aid in the prevention or control of avian botulism and other disease outbreaks; and
- excluding endangered fish species from unsuitable habitats outside of flood events.

This project is restoring the existing 5-mile water conveyance system, replacing and removing water control structures, stabilizing and revegetating levees, and making additional improvements to enhance water use efficiency. It increases the water delivery capacity on the refuge and distributes greater flows to maintain wetland and other habitat and water quality improvements.



With Water Control Structure #6 near completion, water is turned into the system to supply wetlands with a drink.

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Upstream of the Devil's Den trailhead on Deer Creek.

Award Amount

\$212,000

Watershed

Deer Creek Watershed

County

Butte and Tehama Counties

CALFED Region

Sacramento Valley Region

Legislative Districts

US Congress: 2

State Assembly: 2

State Senate: 4

Purpose

Provide technical assistance for ranchers in the Deer Creek Watershed to prepare individual ranch plans to improve water quality and riparian areas.

Project Goals

- Assist ranchers in developing ranch management plans.
- Provide personalized technical plans and monitoring support for ranchers in the Deer Creek Watershed.

Benefits to the CALFED Program

The Ecosystem Restoration Program Plan (ERPP) states that an investment in Deer Creek will provide the types of restoration information needed to successfully move the Ecosystem Restoration Program (ERP) forward. The ERPP further states that watershed planning through the locally driven Deer Creek Conservancy will help to preserve and restore spring-run Chinook salmon and steelhead trout and other important attributes of the watershed. Implementation of this project is directly connected to the ERP's goal of improving conditions in the Deer Creek watershed. It also furthers Watershed Program goals by supporting education and outreach, facilitating and improving coordination among government agencies and local stakeholders, and implementing a strategy to improve watershed stewardship.

Project Overview

Deer Creek is a significant tributary to the Sacramento River, originating upstream of Deer Creek Meadows on the slopes of Butte Mountain. The watershed drains 200 square miles and is 60 miles long. The creek supports fall- and spring-run Chinook salmon and steelhead trout. According to the Ecosystem Restoration Program Plan, Deer Creek has the greatest spring-run Chinook salmon restoration potential of all Sacramento Valley streams.

The Deer Creek Watershed Conservancy prepared a comprehensive watershed management plan for Deer Creek and has begun its implementation. One element of the watershed management plan is to develop individual ranch plans to improve water quality and riparian areas. The Conservancy has found that local ranchers are very willing to participate in the process but need guidance to develop their ranch plan. This project provides the needed technical and personalized support to compile and complete a ranch plan and a monitoring program for each ranch property in the Deer Creek Watershed. The ranch plans assess existing conditions, develop economically achievable management measures, and establish a monitoring program for each ranch. Implementing the plans will contribute to the prevention or control of erosion and sedimentation and improve aquatic and terrestrial habitat in the Deer Creek Watershed.

Consultants and resource agency specialists provide technical assistance to the ranchers. These specialists provide expertise in grasslands management, soil erosion, geographic information system (GIS) mapping, and vegetation management. This assistance helps ranchers assess existing conditions of their ranchlands for possible improvements and protections against present or potential sources of contaminated runoff. The project also serves to demonstrate development of comprehensive ranch assessments and plans to support other local watershed programs.



Upper watershed rangeland in the wintertime.

Contact Information

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Plum growers learn about orchard management practices that help reduce the amount of pesticides entering streams in field runoff.

Award Amount
\$400,000

Watershed
Sacramento and Feather River Watersheds

County
Sutter and Yuba Counties

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2
State Assembly: 2 and 3
State Senate: 4

Purpose

Reduce runoff of organophosphate pesticides into surface waters of the Sacramento and Feather River Watersheds.

Project Goals

- Identify ten demonstration orchards in the Sacramento/ Feather River Watershed to test alternatives to existing methods of dormant application of organophosphate pesticides.
- Involve the grower community in demonstrating that alternatives to present practices of dormant application of diazinon can be cost effective as well as effective in addressing pest management needs.
- Determine the best methods of mitigating for organophosphate pesticide runoff from agriculture.

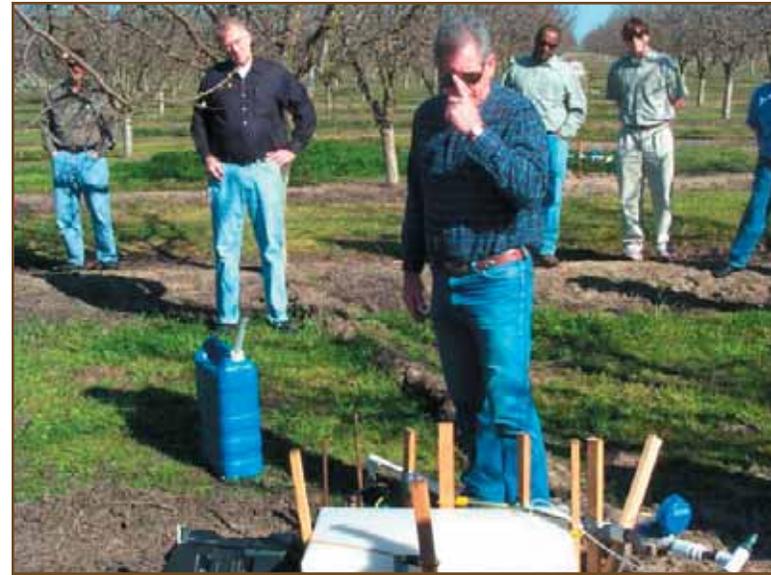
Benefits to the CALFED Program

Organophosphate (OP) pesticides, including diazinon and chlorpyrifos, have been identified by the CALFED Program as contaminants of concern in both the Central Valley and the Delta. The Water Quality Program Plan (WQPP) states that some of the highest concentrations of diazinon and longest exposures are typically in small water courses adjacent to high densities of orchards. The WQPP proposes a number of corrective actions be taken to resolve this water quality problem. Actions proposed include developing and demonstrating cost-effective management practices, which is the goal of this project. Through ten demonstration sites, this project shows local growers alternative methods to reduce the impacts of OP pesticides in their orchards and thereby improve water quality in adjacent Bay-Delta waterways.

Project Overview

This project includes the identification of ten demonstration orchards to conduct pilot projects to reduce the use of organophosphate pesticides. Organophosphate pesticides, such as diazinon, chlorpyrifos, methidathion, and matathion, are of particular concern in the Central Valley because of the number of applications to dormant orchards (trees that are not leafed out). This “dormant spraying” controls a number of insect pests and typically occurs from December through February. During this period, as much as one million pounds of active organophosphate pesticides are applied to 500,000 acres of almonds and stone fruits in the Central Valley. Storm events that follow the organophosphate pesticide applications can wash the recently applied pesticides into surface waters in concentrations toxic to sensitive invertebrates. Invertebrate communities are necessary food items for nearly all of the priority fish populations in the Bay-Delta system. Dormant season spraying coincides with the time when these fish (including delta smelt, Chinook salmon, and steelhead trout) are in the early life stages.

The ten demonstration watersheds, located in the Feather River Watershed are being used to involve the grower community. They demonstrate that alternatives to dormant application of diazinon can be cost effective as well as effective in addressing pest management needs. Runoff management practices are also being demonstrated.



Plum growers are shown how changing the timing of pesticide application can reduce the amount of pesticides entering local streams in runoff.

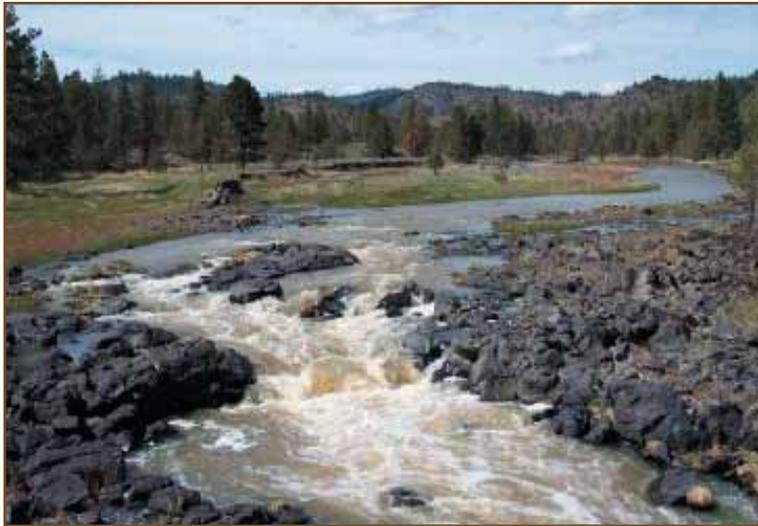
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Pit River Watershed Alliance Watershed Management Program

Pit River Watershed Alliance



A water quality monitoring location on the Pit River in the remote Stone Coal Valley.

Award Amount

\$542,456

Watershed

Pit River Watershed

County

Lassen, Modoc, Shasta, and Siskiyou Counties

CALFED Region

Sacramento Valley Region

Legislative Districts

US Congress: 4

State Assembly: 2

State Senate: 1

Purpose

Conduct a comprehensive watershed program with significant public outreach and capacity-building functions.

Project Goals

- Expand the Central Modoc Resource Conservation District monitoring program.
- Evaluate water quality by gathering and analyzing physical, chemical, biological, and human impact information of past and current land uses.
- Lead a community-based, cooperative rangeland management project.
- Conduct a paired watershed study on juniper management.
- Build capacity of the Pit River Watershed Alliance through education, outreach, and strengthening of partnerships.

Benefits to the CALFED Program

The Pit River supplies 20% of the water that flows into the Bay-Delta via the Sacramento River. This program ensures that that water is of higher quality by conducting a watershed assessment and monitoring program to guide decisions for water quality enhancement projects. This program is designing a system for storing water in the uplands for more timely releases to Bay-Delta users. Through the substantial public outreach components of this program, and the development of a comprehensive watershed assessment, the Alliance teaches stakeholders about the health of their watershed and how to assess it. It also provides stakeholders with information to make land management decisions on a watershed scale, and increase their capacity to meet the goals of the CALFED Program and the Alliance.

Project Overview

The Pit River Watershed Alliance (Alliance) is a volunteer grass-roots organization whose mission is to foster partnerships that achieve integrated long-term cultural, economic, and environmental health of the watershed through active community participation. The Pit River Watershed is 2 million acres in size and is located in northeastern California. The water from the Pit River Watershed makes up about 20% of the water that enters the Sacramento River, flowing eventually to the Bay-Delta.

Currently, no comprehensive baseline assessment incorporating data from both private and public land exists for the Pit River Watershed. The Alliance is leading the effort to conduct a watershed assessment upon which future management decisions can be based. The assessment includes gathering past and current data on all elements of the watershed, such as water, soils, forest lands, agriculture, wildlife, and recreation. It includes new and prior monitoring data, and identifies what additional data is needed. This effort provides the baseline information necessary to do a thorough assessment, from which current conditions and future trends can be estimated and potential future projects identified.

This is a comprehensive program with many additional components. These components each incorporate significant public outreach and local watershed management capacity enhancement. They include an expansion of the Central Modoc Resource Conservation District monitoring program, including water quality monitoring; a community-based, cooperative rangeland management project that will provide for livestock grazing in a manner that protects water quality in the Warner Mountains; a paired watershed study on juniper management in seeps and spring areas and its effects on water storage and release on a watershed scale; and building capacity of the Pit River Watershed Alliance through education, outreach, and the strengthening of partnerships.



Jeff Steinman takes a water sample to detect nutrients in Horse Creek.

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Shasta West Watershed Assessment

Western Shasta Resource Conservation District



A restoration plan will be created after studying streams within the project area.

Award Amount
\$131,600

Watershed
Shasta West Watershed

County
Shasta County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2
State Assembly: 2
State Senate: 4

Purpose

The purpose of this project is to conduct a watershed assessment to document the existing conditions of the Upper Clear Creek watershed in Western Shasta County, laying the groundwork for the development of a comprehensive watershed management plan.

Project Goals

- Gather and document existing data for five streams in Western Shasta County.
- Assess the effect that watershed conditions may have on anadromous fish species and beneficial water uses.
- Identify data gaps.

Benefits to the CALFED Program

CALFED's Ecosystem Restoration Program Plan (ERPP) states that "an investment in the Clear Creek watershed will provide direct benefits to the creek and provide the types of restoration information needed to move the ERPP into subsequent implementation phases successfully." The Shasta West Watershed Assessment is an important first step in assessing conditions and developing a plan for restoration and improvements of these watersheds. This assessment will lead to the development of a comprehensive watershed management plan that will identify a number of measures, including erosion control, reduction of forest fuels, and urban runoff control to improve water quality and increase habitat for endangered and threatened fish species in the Bay-Delta Watershed.

Project Overview

Shasta County streams flow into the Sacramento River and continue to the Bay-Delta system. The health of these northern streams is directly connected to the health of the Bay-Delta. Additionally, the Western Shasta County watersheds are home to a number of important threatened and endangered anadromous fish species, including Chinook salmon and steelhead.

This project entails conducting a watershed assessment for streams located in the western portion of Shasta County, which includes Middle, Salt, Rock, Olney, and Canyon Creeks. These watersheds are tributaries to Clear Creek and home to a number of important species, including steelhead, salmon, and rainbow trout. However, urban development and the threat of wild fires threaten the habitat of these species. An assessment is key to developing and implementing a long-term comprehensive plan to restore ecological health and improve water management. The assessment focuses on land use, hydrology, water quality, stream channel morphology, fisheries and aquatic habitat, sediment sources, transportation development, and recreation. Information and data are being gathered to document existing conditions within the county's western watersheds. The assessment will provide clear direction to the Resource Conservation District; federal, state, and local agencies; and other stakeholders during the next phase: developing a watershed management plan and implementing on-the-ground projects.



An area of dense vegetation such as this creates fire hazard within the watershed.

Contact Information

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Promotion of Farming Best Management Practices and Calibration Technology to Mitigate OP Pesticide Runoff into the Sacramento River Watershed

Coalition for Urban/Rural Environmental Stewardship (CURES)



Landowners and agricultural pesticide users learn the relationship between pesticides and water resources.

Award Amount
\$308,000

Watershed
Sacramento River Watershed

County
Butte, Colusa, Glenn, Sutter, Tehama, Yolo, and Yuba Counties

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2
State Assembly: 2 and 3
State Senate: 4

Purpose

Motivate growers to integrate permanent changes in their farm management practices to protect surface water quality.

Project Goals

- Implement a 3-year outreach and education program.
- Minimize the off-site movement of pesticides from farms into the Sacramento River Watershed surface flows.
- Minimize the off-site movement of pesticides from farms into the Sacramento River Watershed surface flows.
- Minimize toxicity to aquatic systems.
- Educate landowners and agricultural pesticide users about their own vulnerability to off-site movement of pesticides into streams and rivers.

Benefits to the CALFED Program

This project addresses the use of pesticides, namely diazinon, in farming practices throughout the Sacramento River Watershed. Pesticides, including diazinon, have been identified by the CALFED Program as contaminants of concern in both the Central Valley and the Delta. The Water Quality Program Plan proposes a number of actions to correct this water quality problem, including the development of education and outreach programs. This project is an education and outreach program to encourage growers to integrate changes in their farm management practices that have the best potential to protect surface water quality. Implementation of this project helps further the goals of both the Water Quality and Watershed Programs.

Project Overview

This project is a 3-year education and outreach program in the Sacramento River Watershed. Its aim is to motivate growers to integrate permanent changes into their farm management practices that have the best potential to protect surface water quality. Implementation of these practices will minimize the off-site movement of pesticides into surface waters of the watershed. This project is being implemented in partnership with the Sacramento River Watershed Program Organophosphate Focus Group, which is working to address diazinon runoff in Sacramento River watersheds.

Elements of the project include identifying growers who farm adjacent to rivers and creeks; creating and distributing water quality educational materials; conducting voluntary site assessments; and promoting best management practices to protect surface water.

Implementation of this education and outreach program is:

- Raising the awareness level of growers in the Sacramento River Watershed about pest management strategies, pesticide application methods and on-site practices that can minimize pesticide runoff and improve water quality and ecosystem conditions.
- Showcasing these practices through educational materials and events in the watershed.
- Creating and encouraging the completion of farm environmental site reviews.
- Tracking the adoption of management practices to protect water quality by growers in the watershed.
- Conducting monitoring and reporting to assess performance of the project.



The field on the left side of this picture has the potential to affect the stream running alongside it.

Contact Information

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A sunny day in the South Yuba River Corridor.

Award Amount
\$524,671

Watershed
South Yuba River Watershed

County
Nevada County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 4
State Assembly: 3
State Senate: 4 and 1

Purpose

Develop a comprehensive resource management plan for the South Yuba River.

Project Goals

- Develop a watershed-based cooperative river management plan for a 40-mile stretch of the South Yuba River.
- Use the plan to guide the protection and improvement of a wide range of resources in the South Yuba River Watershed.

Benefits to the CALFED Program

The Yuba River Watershed is tributary to the Feather River, which, in turn, feeds into the Sacramento River. The Yuba River is one of the few remaining wild steelhead fisheries in the Central Valley. According to the ERPP, steelhead and spring-run Chinook salmon may greatly benefit from actions to restore access to historical holding, spawning, and rearing areas upstream of Englebright Dam. By conducting a watershed assessment, collaborative agency planning, and implementing restoration actions, this project helps ERPP achieve this goal by improving the health of the watershed. This project also furthers the goals of the Watershed Program by improving coordination and assistance among government agencies, developing a watershed assessment, and facilitating public outreach.

Project Overview

This project develops a resource management plan for a 40-mile reach of the South Yuba River between Spaulding and Englebright Reservoirs. The project reach is designated as a State Wild and Scenic River and is recommended for National Wild and Scenic River designation. The Yuba River supports highly valued populations of steelhead trout, resident rainbow trout, and fall-run Chinook salmon.

The project is led by a collaboration of agencies: the U.S. Forest Service, the Bureau of Land Management, and the California Department of Parks and Recreation. The management plan will serve as a long-term guide for the three cooperating agencies.

The project includes four major phases:

1. *Scoping.* The scoping phase includes a review of important resource planning and management issues, the identification of key-resource and social issues in the South Yuba River watershed, and the development of plan objectives using a community-based approach to guide the project.
2. *Watershed Assessment.* The watershed assessment conducted for the project reach identifies resource conditions. It also identifies land use and management practices (by location and type) that influence key resource conditions in the project area.
3. *Planning.* This phase includes the development of goals, objectives, and desired future conditions. These resource management interests are described through a community-based approach.
4. *Implementation.* This phase calls for implementing and monitoring actions identified in Phase 3 that address the range of desired future resource conditions.



The rushing South Yuba River cascades through a rocky canyon.

Contact Information

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Dry Creek Watershed Stewardship Group

Dry Creek Conservancy for Dry Creek Watershed Council



Water velocity is measured during a routine monitoring exercise.

Award Amount
\$266,990

Watershed
Dry Creek Watershed

County
Placer and Sacramento Counties

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 4
State Assembly: 4, 9, and 10
State Senate: 1, 4, and 6

Purpose

Develop technical and community support for watershed planning and plan implementation, and programs for long-term stewardship that can be transferred to similar, nearby watersheds.

Project Goals

- Develop ongoing watershed education for the community.
- Provide water quality monitoring services.
- Develop GIS information and data management to support planning and adaptive management.
- Develop organizational capacity to support ongoing planning and adaptive management.

Benefits to the CALFED Program

The Ecosystem Restoration Program (ERP) designates Dry Creek as part of the American River Basin Ecological Management Zone, contributing to one of the Delta's largest tributaries. The ERP identifies coordinated resource management and planning groups (CRMPs) as integral to the restoration of the Sacramento River Watershed. The Dry Creek Watershed Council is working to implement several Watershed Program and ERP goals for the American River Basin, including recovery of Central Valley steelhead and fall-run Chinook salmon, restoration of ecological habitats, reducing fine sediment loading, and supporting the development of locally sponsored watershed planning. Conservation is a locally driven activity that recognizes that communities must engage in collective behavior that improves natural systems at the local level.

Project Overview

This project consists of four groups of activities to improve management of the Dry Creek Watershed, a tributary to the Sacramento River. These activities are the result of ongoing discussions with state agencies and interested local parties in the Dry Creek Watershed.

Stewardship. Stewardship includes the Citizen Steward Program, which establishes a forum for the public to learn about watershed management and restoration, and the Sierra College Watershed Ecology Technician Program. Together these programs train interested individuals to do watershed assessment, monitoring, restoration, and ongoing maintenance.

Data Management. Data management focuses on developing a GIS database of watershed information to discover relationships among biological data, geomorphology, land use, and other features of the watershed. Existing data from visual assessments, macroinvertebrate monitoring, fish surveys, and habitat typing information are being expanded. Dry Creek Conservancy is researching the usefulness of integrating remote imagery into the database. GIS data and interpretation are shared within and outside the watershed and will contribute to the management plans being developed by Placer County and the City of Roseville.

Project Development. Project development activities support Dry Creek Conservancy contributions to stream and wetlands restoration projects, development of a watershed center, organization of cooperative flow monitoring with the Placer County Flood Control District and the City of Roseville, and completion of a visual assessment of erosion and deposition on Dry Creek.

Organizational Capacity Building. Organizational capacity building provides administrative support for the Dry Creek Conservancy to facilitate project development and funding.



Volunteers chip aianthus trees removed from a riparian area in Roseville.

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*Measuring flow in the Willow Slough Bypass,
on the western side of the Yolo Bypass.*

Award Amount
\$288,081

Watershed
Yolo Bypass Watershed

County
Yolo County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 1 and 3
State Assembly: 8
State Senate: 2 and 5

Purpose

The overall goal of this project is to produce a comprehensive plan to improve water quality within the Yolo Bypass. The plan will account for the diverse interests in, and uses of, the Bypass and aims to make the best and most reasonable use of funds available.

Project Goals

- Identify specific Pollutants of Concern (POCs) currently impacting the beneficial uses of surface waters in the Bypass and downstream Bay-Delta.
- Identify effective, implementable controls for the high priority POCs.
- Develop a comprehensive management plan to improve water quality in the Bypass.

Benefits to the CALFED Program

The Yolo Bypass floodway drains into the Sacramento–San Joaquin River Delta, a source for a number of beneficial uses, including municipal drinking water supplies, water-related recreation, crop irrigation, and aquatic life and wildlife habitat. The Yolo Bypass Watershed Planning Project supports the improvement of Bay-Delta water quality and ecosystem health through a locally based watershed planning program. The project intends to reduce pollutants in the Yolo Bypass, including mercury, other trace metals, and pesticides, that have been identified by the CALFED Water Quality Program as contaminants of concern in the Central Valley. This project provides an opportunity for citizens to participate in watershed monitoring and management planning, and to increase local awareness of CALFED Program goals.

Project Overview

The Yolo Bypass Watershed Planning Project involves development of a water quality management plan for the Yolo Bypass. The 59,000-acre Yolo Bypass floodplain drains directly into the Sacramento–San Joaquin River Delta near Liberty Island. Water quality monitoring has indicated that surface waters in the Bypass do not consistently meet state water quality objectives for some conventional and toxic pollutants. Discharges to the Bypass have been found to include metals, pesticides, and other organic chemicals and toxins to sensitive aquatic life. Beneficial uses of concern for the Bypass include water-related recreation, crop irrigation, aquatic habitat, and wildlife habitat. A major additional beneficial use of the downstream Delta is municipal drinking water supply for northern and southern California. Delta waterways are listed on the State’s Clean Water Act (303d) list of impaired water bodies.

Through a locally led surface water monitoring program, the Yolo Bypass Watershed Planning Project identifies specific pollutants of concern that are currently affecting beneficial uses of surface waters in the Yolo Bypass and Sacramento–San Joaquin River Delta. This information is then used to inform a community-based, collaborative process to identify effective, implementable pollution control techniques for urban runoff, agriculture, and publicly owned dischargers.

The expected outcome of the watershed management planning project is the production of a comprehensive plan for improvement of water quality within the Yolo Bypass. Implementation of this plan will directly benefit Bay-Delta water quality and will improve aquatic ecosystem quality.



Agricultural drain looking eastward into the southern Yolo Bypass.

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American River Conservancy Water Quality Assessment: South Fork American and Cosumnes River Basins

American River Conservancy



Volunteers participate in a training session.

Award Amount
\$96,700

Watershed
American and Cosumnes River Watersheds

County
Amador, Calaveras, El Dorado, Nevada, and Placer Counties

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 3 and 4
State Assembly: 4 and 10
State Senate: 1

Purpose

Improve stream monitoring analyses and watershed management decisions within the South Fork American and Cosumnes River Basins.

Project Goals

- Identify reference stream conditions within the study region.
- Determine the effect of water diversion on stream habitat quality.
- Facilitate the communication of information among regional water quality monitoring groups and public agencies.

Benefits to the CALFED Program

The South Fork American and Cosumnes Rivers support endangered anadromous fish populations and have been identified by the Ecosystem Restoration Program (ERP) as target watersheds for restoration activities. The visions for the American and Cosumnes Rivers include restoring an ecologically based streamflow plan, modifying floodplain and channel conditions, and supporting the development of locally sponsored watershed planning. This project supports those goals by identifying stream conditions that can be used as models for natural streamflows, natural ecosystem and channel conditions, and restored watershed functions. This effort also ensures long-term sustainability of local watershed activities by collecting baseline data and providing a clearinghouse for information exchange among groups.

Project Overview

The goals of the American River Conservancy (ARC) Water Quality Assessment are to improve stream monitoring analyses and watershed management decisions within the South Fork American and Cosumnes River basins. This is a three-part process.

Identify reference stream conditions. Reference streams are those that most clearly approximate natural conditions and that have been relatively undisturbed by human activity. Reference streams help determine best-quality habitat conditions to which watershed managers and conservation groups may compare stream conditions to make more informed land and water-use decisions.

Determine the effect of water diversions on stream habitat quality. There are 247 known water diversions within the Cosumnes River Basin. Prior to this project, no data existed that addressed the effects of water diversions as a point source disturbance to Cosumnes stream communities. Determining the effects of such diversions on stream health is assisting watershed managers and conservation groups to prioritize actions and decisions within this region.

Facilitate communication among regional water quality monitoring groups and public agencies. Several independent stream monitoring groups are working in the 5-county central Sierra Nevada foothills region, from Nevada County to Calaveras County. Prior to this project, the regional usefulness of data within these groups was limited by a dearth of easily comparable data and a lack of communication among groups. This project creates a data organization and distribution repository to facilitate dissemination of stream monitoring information among these central foothill monitoring groups.



Stream monitoring in progress.

Contact Information

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Capay Valley Community Action Plan

Capay Valley Vision Inc.



A bedded field in Capay Valley.

Award Amount

\$40,000

Watershed

Cache Creek Watershed

County

Yolo County

CALFED Region

Bay Region

Legislative Districts

US Congress: 2

State Assembly: 2

State Senate: 5

Purpose

Develop a Community Action Plan for the Esparto–Capay Valley area of the Cache Creek Watershed.

Project Goals

- Establish a shared vision for the future of the region and identify actions necessary to achieve defined goals.
- Create a collaboration of farmers, ranchers, rural residents, and tribal representatives.
- Research and produce a Capay Valley Atlas.

Benefits to the CALFED Program

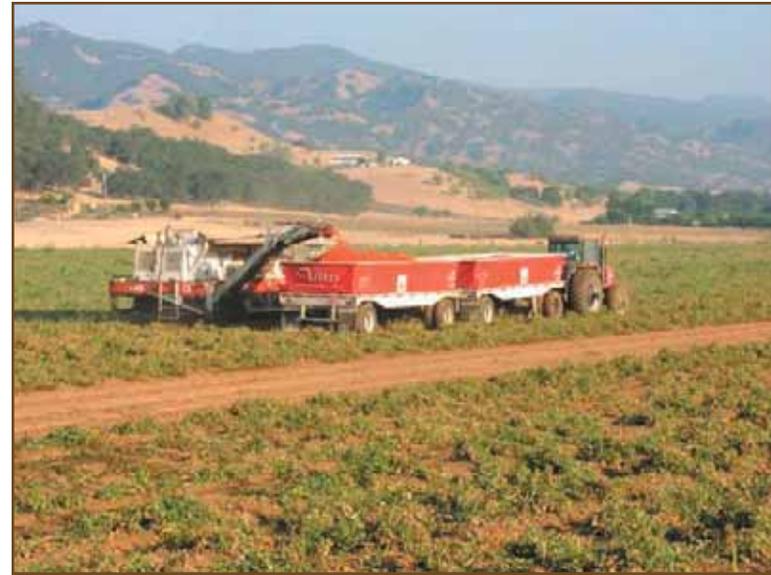
This project is a true grassroots effort to develop a shared vision for the future of the Capay Valley and the middle reach of Cache Creek. The project is a model for other rural communities and provides great benefits to the local community and to the CALFED Program. The Ecosystem Restoration Program Plan states that supporting the involvement of local citizens and interested parties would help to restore and maintain Cache Creek. The Watershed Program recognizes that the goals of watershed management can be achieved only if they are supported by those who are likely to influence changes in the watershed. Through implementing this project, Capay Valley Vision adds credibility and energy to effective watershed management and restoration efforts.

Project Overview

The Capay Valley is located in western Yolo County in the Cache Creek watershed. The rural area has been in agricultural use since the 1850s but is now facing increasing pressures from the Sacramento and the San Francisco Bay areas. New development in the town of Esparto, together with a rapidly developing Indian casino on tribal lands in the lower Capay Valley, is threatening to overwhelm the valley's rural character and agricultural economy. The increased development can have a significant impact on the natural resources of the Cache Creek Watershed, which is in some areas already degraded and in need of restoration.

This project develops an action plan for the rural communities of the Capay Valley. The plan's purpose is to establish a shared vision for the future of the region and to empower local residents to shape their future. The collaborative process involves farmers, ranchers, rural residents, farm workers, and tribal representatives of the Rumsey Rancheria. It is designed to achieve general agreement on a desired future for the Capay Valley and to foster civic engagement within the community. The Community Action Plan is helping to manage what many see as inevitable growth and development in a way that protects the rural values of the area and promotes the ecological health of the watershed within the context of environmental justice.

The project is designed in four phases. The first phase is the development of a Capay Valley Atlas. The Atlas includes local soil and water resources conditions, demographics, existing infrastructure and needs, and economic trends. The second phase entails a series of "Creating the Vision" workshops. The workshops are focused on developing consensus on a general vision statement. The next phase develops strategies to rank priorities for action, and subsequent accomplishment. Lastly, the fourth phase develops the Community Action Plan itself.



Tomato harvesting in progress.

Contact Information

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Cherokee Watershed stakeholders tour candidate water quality monitoring sites on Cottonwood Creek.

Award Amount
\$93,815

Watershed
Cherokee Watershed

County
Butte County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2 and 4
State Assembly: 2 and 3
State Senate: 4

Purpose

To build a formal, broad-based collaborative stakeholder watershed organization to address severe flooding, sedimentation, and heavy metal contamination issues in the Cherokee Watershed.

Project Goals

- Perform watershed assessments and ongoing monitoring.
- Develop a watershed plan.
- Implement stewardship activities.

Benefits to the CALFED Program

The Cherokee watershed is a part of the Ecosystem Restoration Program's (ERP's) Butte Basin Ecological Management Zone. It contributes to the waterfowl-friendly marshes of the Butte Sink and has been identified as a recharge zone for the Butte Basin Aquifer. This project is raising citizen awareness about the importance of overall watershed health and restoration. It synthesizes watershed data in a usable format and collects important new data through citizen monitoring efforts. Once this is completed, the Cherokee Coordinated Resource Management and Planning Group will pursue the next steps to complete the assessment and planning and begin implementation and restoration activities.

Project Overview

This project is the result of meetings held by an informal watershed group initiated in September 2000 by the Cherokee Coordinated Resource Management and Planning Group (CRMP). These meetings focused on scoping watershed issues and increasing citizen awareness and understanding of priority issues such as flood control, non-point source pollution, and endangered species. This informal watershed group developed a plan to build a sustainable, broad-based, collaborative stakeholder watershed group to perform assessments and ongoing monitoring, develop a watershed plan, and implement stewardship activities in the Cherokee Watershed.

Keystones of this 21-month capacity-building project are to hold community watershed meetings, develop a Citizen Monitoring Initiative, and conduct field tours. This project funds a half-time Watershed Coordinator to synthesize existing data sets, coordinate events and citizen monitoring, facilitate meetings, manage logistics, and conduct outreach activities.

Watershed meetings focus on raising awareness in the community, promoting communication, and getting organized. Participants are gaining a greater understanding of watershed problems and are working toward solutions in the watershed. They are also helping craft a formal collaborative organization to maintain and improve the watershed and working with the State Water Resources Control Board Clean Water Team to ensure appropriate sampling and monitoring protocols for water quality data.

Concurrent with this effort, the group is working to compile existing scientific studies and data for the watershed into a summary document that identifies additional data needs and serves as a reference for public discussions and individual landowner decisions about the watershed.



View upstream from a water quality monitoring station on Dry Creek.

Contact Information

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A Management Program for Tamarix and Arundo donax on Cache Creek

Cache Creek Conservancy



Large equipment is often necessary to remove nonnative invasive species.

Award Amount
\$222,200

Watershed
Cache Creek Watershed

County
Yolo County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 1
State Assembly: 8
State Senate: 5

Purpose

The purpose of this project is to remove and control nonnative species Tamarix and Arundo donax, encourage revegetation with native riparian species, and conduct long-term monitoring along a 14-mile stretch of the lower Cache Creek Watershed.

Project Goals

- Remove nonnative invasive species (Tamarix and Arundo donax) in the lower Cache Creek Watershed.
- Conduct post-removal management.
- Conduct monitoring along 13 sites in the lower Cache Creek Watershed.
- Conduct community outreach.

Benefits to the CALFED Program

Cache Creek flows into the Sacramento River floodplains of the Yolo Bypass and has been identified as a target of the Ecosystem Restoration Program. Control of the invasive species Arundo donax and Tamarix is of particular concern because they displace native flora, offer marginal value to fish and wildlife, and cause channel instability. Heavy infestation of these species can increase sediment deposition, which in turn substantially reduces channel capacity, increasing the potential for levee overtopping and subsequent failure. These species also offer little shading over the creek, causing higher water temperatures and altered water chemistry. Controlling Arundo donax and Tamarix in the lower Cache Creek Watershed will greatly benefit the local watershed and contribute to the goals of the CALFED Program.

Project Overview

Nonnative species, specifically *Arundo donax* and *Tamarix*, have been a part of the Cache Creek Watershed for decades. Originally introduced as ornamentals and recommended for erosion control, these invasive species have quickly worked their way into much of the watershed and have become a dominant species on creek banks and in adjacent riparian areas. These nonnative species are crowding out the remaining native vegetation, building midstream islands, disrupting the flow regime, and increasing flooding on adjacent lands. *Tamarix* and *Arundo donax* are efficient sediment traps that over time can build islands to a height of 10 feet.

This project removes approximately 300 acres of *Tamarix* and *Arundo donax* within riparian areas between the Capay region and the Interstate 5 bridge. The invasive species are removed mechanically with specially designed equipment and the biomass left in place. At sites where mechanical removal is not feasible, manual methods are used. One herbicide spray application will be applied within 30 days of mechanical treatment.

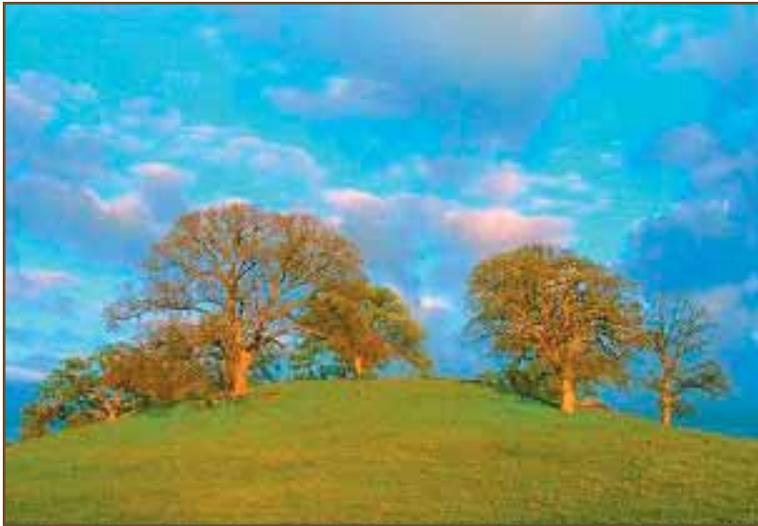
An essential component for success in nonnative invasive species control projects is post-removal management. The target weeds routinely shed hundreds of thousands of seeds per plant. Removal of invasive species will be followed by a resprout spray program. Follow-up spraying will continue at the sites as needed for the life of the grant. In addition, an ongoing endeavor to implement an integrated pest management program will be coordinated with the invasive species removal. The project will also be complemented by a monitoring program at 13 sites along the lower Cache Creek Watershed and a community outreach program.



Dedicated workers attempt to remove nonnative invasive species by hand.

Contact Information

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A sunny day in the Pleasant Grove/Curry Creek Watershed area.

Award Amount
\$425,764

Watershed
Auburn Ravine, Pleasant Grove, and Curry Creek Watersheds

County
Placer County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 4
State Assembly: 4
State Senate: 4

Purpose

Facilitate the development and implementation of a comprehensive resource management plan (CRMP) for the Pleasant Grove/Curry Creek Watersheds and refine an ecosystem restoration plan for the Auburn Ravine and Coon Creek Watersheds.

Project Goals

- Prepare a coordinated resource management plan for the Pleasant Grove/Curry Creek Watersheds.
- Refine an ecosystem restoration plan for Auburn Ravine and Coon Creek Watersheds.
- Develop a formal sampling and monitoring plan.
- Increase outreach and education efforts.

Benefits to the CALFED Program

Implementation of the Comprehensive Resource Management Plan will result in the reduction of a number of primary stressors, including alteration of flows and other effects of water management, channel form and floodplain changes, erosion, water quality, water temperature, and land use. Reduction and/or removal of these stressors will provide direct and indirect benefits to species of high priority to the Ecosystem Restoration Program such as steelhead, spring-run and fall-run Chinook salmon, splittail, delta smelt, and red- and yellow-legged frogs. In addition, increased citizen involvement and monitoring will enhance the community's ability to take care of and make decisions for the health of its own watersheds.

Project Overview

This project encompasses the Auburn Ravine, Coon Creek, Pleasant Grove, and Curry Creek Watersheds in western Placer County. The creeks, by way of the Cross Canal, are tributaries to the Sacramento River. The Pleasant Grove and Curry Creek Watersheds are the only watersheds in western Placer County that do not have a coordinated resource management program (CRMP) in place, yet they are experiencing the most significant changes as a result of a major population increase in the area. Currently, many decisions are being made regarding flood control, water supply, wastewater treatment, and erosion control with little or no knowledge of the implications for long-term watershed health. A comprehensive plan to address watershed issues is needed and will assist decision-makers in making more informed choices.

This project conducts the following tasks:

- facilitate and support the development and implementation of a CRMP for the Pleasant Grove/Curry Creek Watersheds in order to reduce the long-term sediment load carried by the creeks and to identify sources of water quality contamination;
- expand an existing citizen monitoring program to include all of the western Placer watersheds;
- increase citizen involvement and coordination of all activities in the watersheds through the utilization of a watershed coordinator; and
- refine an Auburn Ravine/Coon Creek baseline condition report presently under development.



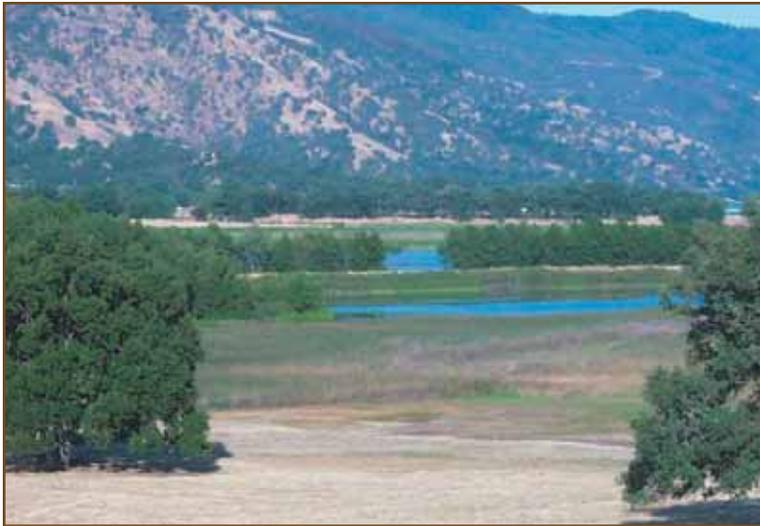
Members of the Placer County Planning Department analyze resource information.

Contact Information

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Middle Creek Ecosystem Restoration Project—Design Phase

Lake County Flood Control
and Water Conservation District



Rodman Slough and the south end of the project area.

Award Amount

\$135,818

Watershed

Clear Lake Watershed

County

Lake County

CALFED Region

Sacramento Valley Region

Legislative Districts

US Congress: 1

State Assembly: 1

State Senate: 2

Purpose

Preparation of a detailed plan with specifications and cost estimates to restore up to 1,218 acres of wetland and open water and 480 acres of floodplain of previously reclaimed land at the north end of Clear Lake.

Project Goals

- Restore wetlands and habitat.
- Reduce flood damage.
- Improve water quality in Clear Lake.
- Preserve existing resources.
- Enhance recreation and tourism.

Benefits to the CALFED Program

This project restores habitat and water quality at Clear Lake, the largest natural freshwater lake located entirely within California. Clear Lake is a naturally shallow lake and is the headwaters of Cache Creek, a tributary to the Sacramento River and Bay-Delta system. This project involves habitat restoration design for approximately 1,700 acres of wetland, open water, and floodplain habitats on Clear Lake. Completion of environmental documentation and design of the project will lead to implementation that will provide direct benefits to the Bay-Delta system. It meets CALFED Program goals to restore riparian, wetland, and open water ecosystems, and to improve water quality by improving flood control and reducing erosion and siltation to Clear Lake, which flows to Cache Creek and on to the Bay-Delta.

Project Overview

This project is the third of four phases in the Middle Creek Ecosystem Restoration Project. The overall project will restore up to 1,218 acres of wetland and open water and 480 acres of floodplain of previously reclaimed land at the north end of Clear Lake. Phase One, the Reconnaissance Study, has been completed and Phase Two, the Feasibility Study and environmental documentation, are underway. This project is Phase Three. It generates a detailed plan, specifications, and cost estimates of the selected construction alternative, in preparation for construction in Phase Four.

The project area was reclaimed from Clear Lake for agricultural and residential purposes between 1900 and 1958. Most of the land behind the levees is below the normal high water level of Clear Lake. Because of the soil type in the project area, the levees are subject to settlement and failure, and the U.S. Army Corps of Engineers estimates that the current levees provide only 4 years of protection.

Restoration in the project area includes acquiring property below the 100-year floodplain of Clear Lake, removing structures and unnecessary infrastructure, retrofitting roads and utilities that pass through the project area, constructing passive recreation opportunities, constructing channels to direct flows through the project area, planting native plants, and breaching levees to allow flooding and flow. The area will be allowed to revegetate naturally and will revert to natural habitat after the initial years of restoration, increasing the shoreline habitat around Clear Lake. Restoration of flows from nearby creeks into the project area will result in settling some of the suspended sediments prior to entering Clear Lake, thereby reducing the nutrient loading in Clear Lake, resulting in improved water quality.



Project site looking to the northwest.

Contact Information

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Spawning gravel is injected just below Whiskeytown Dam as the Dam prevents the natural flow from the upper reaches of the watershed.

Award Amount
\$378,899

Watershed
Sacramento River Watershed

County
Shasta County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2
State Assembly: 2
State Senate: 4

Purpose

Acquire, generate, analyze, and interpret watershed data needed by watershed groups, government agencies, and other organizations interested in watershed management.

Project Goals

- Acquire, analyze, interpret, and generate scientific data for use by citizens.
- Develop a WIM to help make sound scientific data readily available to watershed groups; local, state, and federal agencies; education institutions; and other interested citizens to help improve watershed management.
- Provide an online data catalog of GIS files with interactive viewing capabilities and real time updates.
- Include an outreach program to advertise the availability of the WIM.

Benefits to the CALFED Program

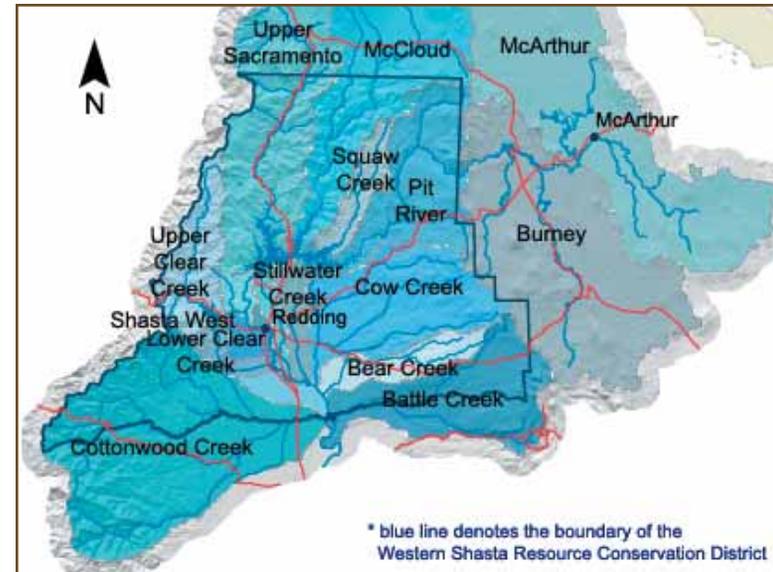
The WIM recognizes the importance of linking scientific research and scientific data to support watershed management decisions. Better informed decisions are crucial to achieving the CALFED Program goals of improving ecosystems and water quality. This project provides development and exchange of sound scientific data among citizen groups and organizations; local, state and federal agencies; and others interested in improving watershed management and the Bay-Delta system. The WIM is providing web-based data, including historical data, physical attributes of watersheds, and other information that will help meet current and future data needs. The available information ultimately will lead to improved understanding and management of the watersheds of the Bay-Delta system.

Project Overview

This project makes sound scientific data available through the Internet to watershed groups; local, state, and federal agencies; education institutions; and other interested citizens. The data are used to improve decision-making and adaptive watershed management intended to improve watershed health in the Western Shasta watersheds. The project helps to link scientific research with science education and science-based watershed management. It offers unprecedented opportunities for the scientific community to acquire, analyze, interpret, and distribute new science data to formal and informal learning settings for use by students, citizens, and watershed groups.

This project is developing a Watershed Information Model (WIM). A WIM is an information resource center that enables watershed-related data sharing. The data include historical information, physical features, and other watershed attributes. The WIM includes readily accessible web-based data, a data catalog of GIS files with interactive viewing capabilities, real time updates, and other features.

The WIM links agency and research data with education and land management activities, offering interactive information instead of a static website. The WIM also supports opportunities for student research, internships, and mentoring at the college level. The WIM adds support for decision-making in watershed management, including monitoring, research, and project planning and implementation. It enables feedback loops to integrate knowledge and experience to improve adaptive management. Information exchange also helps to improve communication among agencies, watershed groups, individuals, trade organizations, interest groups, and others active in the watershed. It provides a shared database of science information necessary for making responsible decisions on watershed issues.



Watersheds within the Western Shasta Resource Conservation District are detailed in this WIM.

Contact Information

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The Yuba River is a haven for recreationists of all types.

Award Amount
\$192,300

Watershed
Yuba River Watershed

County
Yuba County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2 and 4
State Assembly: 3
State Senate: 4

Purpose

Develop a community-based planning process and strategy for economically, socially, and environmentally sustainable natural resource and habitat management practices in the lower Yuba River Watershed.

Project Goals

- Develop a comprehensive, detailed plan to coordinate and facilitate acquisition of priority land and conservation easements from willing sellers.
- Conduct public participation and outreach to inform the local community about conservation of important heritage lands along the Yuba River.

Benefits to the CALFED Program

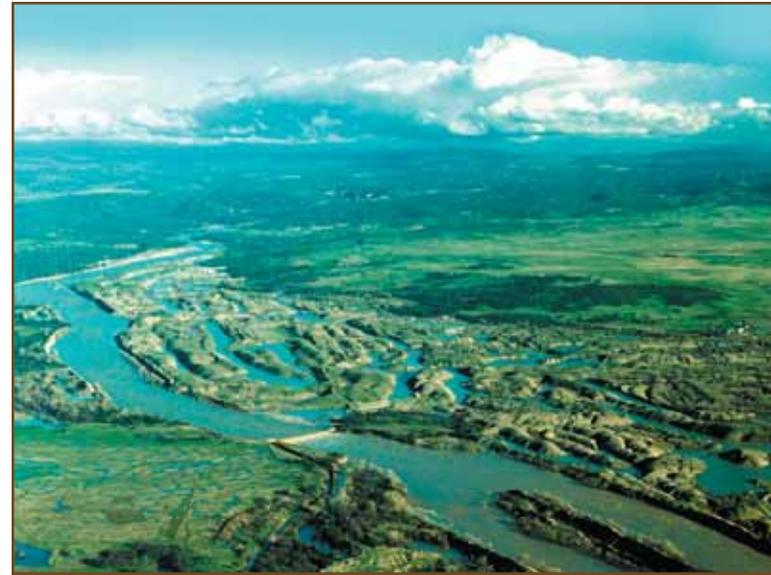
According to the Ecosystem Restoration Program Plan (ERPP), the Yuba River is one of the most important ecological management units in the Feather River Ecological Management Zone. The river supports highly valued populations of steelhead trout, resident rainbow trout, and fall-run Chinook salmon. The lower Yuba River also supports a seasonal American shad sport fishery. By protecting and conserving riparian areas in the lower Yuba River watershed, this project will help to ensure the survival of these highly valued species. In furthering the restoration of this ecosystem, this project also helps to protect water quality for beneficial uses.

Project Overview

According to growth projections for the Central Valley, population growth in the lower Yuba River Watershed is rapidly accelerating. While this population growth creates new economic opportunities, it also creates new challenges for managing natural resources—particularly for managing sensitive aquatic and wildlife habitat and water quality. Pressures to convert open space and working agricultural landscapes are increasing and will likely continue to do so.

The Yuba River Conservancy (YRC) is a collaborative alliance of public agencies, private organizations, businesses, landowners, and other citizens. The YRC is dedicated to conserving and restoring wildlife, aquatic and terrestrial habitats, and public access and recreation in the lower Yuba River Watershed. The YRC has begun a collaborative community-based planning process to identify high priority lands and riparian areas for protection and restoration through acquisition of habitat lands, conservation and agricultural easements, and conservation management practices. A key principle in this endeavor is that any land transactions planned or contemplated will be done only with willing sellers.

The goals of this YRC project include improving water quality in the Yuba River and Bay-Delta and enhancing ecosystem functions and terrestrial and aquatic habitats along the lower Yuba River corridor. The project supports sustainable and diverse plant and animal species as well as other beneficial uses, including agriculture and drinking water supplies. YRC is focusing this planning process on the lower Yuba River Watershed. Key members engaged in land acquisition and management are operating in the context of a watershed approach to their decisions and actions.



Daguerre Point Dam and the Yuba Goldfields in flood.

Contact Information

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Lower Putah Creek Watershed Assessment and Stewardship Implementation Program

Solano County Water Agency/Lower Putah Creek Coordinating Committee



Bird box program field work in progress.

Award Amount
\$600,000

Watershed
Lower Putah Creek Watershed

County
Solano and Yolo Counties

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 7 and 10
State Assembly: 8
State Senate: 5

Purpose

Restore ecosystem processes and aquatic and terrestrial habitats in Lower Putah Creek Watershed.

Project Goals

- Facilitate stakeholder process to identify issues of concern.
- Conduct a comprehensive biological and physical resource assessment.
- Develop a stakeholder-based Watershed Management Action Plan.
- Implement restoration and enhancement projects.

Benefits to the CALFED Program

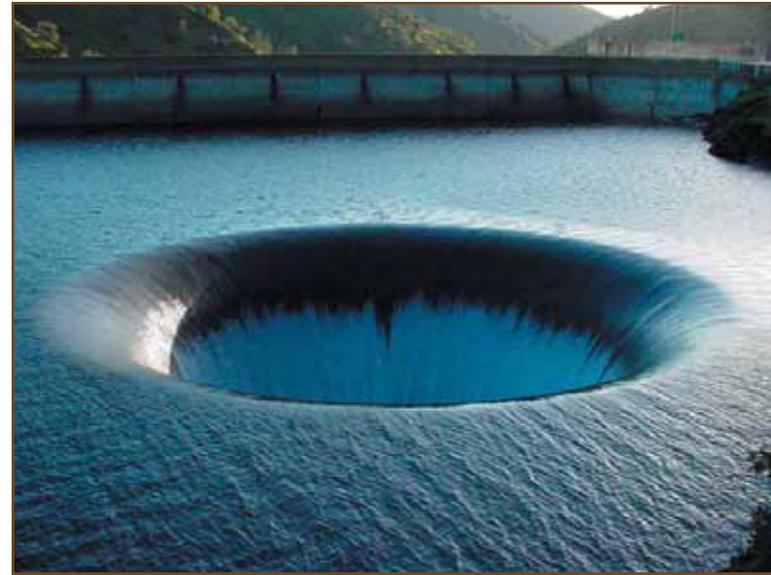
The Ecosystem Restoration Program Plan identifies improvements to streamflow and riparian habitats within the Sacramento Valley as critically important, and has set a priority for providing permanent connections between the mouth of Putah Creek and the Delta to increase opportunities for steelhead trout and fall-run Chinook salmon to use Putah Creek. This project is assisting with this goal and leading to a healthier, more intact stream system; providing high quality habitat for fish, wildlife and native plant species; and increasing recreational opportunities for the communities along the creek. This project also contributes to the goals and objectives of the CALFED Program by building local capacity to better manage the Putah Creek Watershed and achieve improved water quality within the Bay-Delta system.

Project Overview

This project is a component of a three-phased approach to restore ecosystem processes and aquatic and terrestrial habitats in the Lower Putah Creek Watershed, including Lower Putah Creek and its tributaries. The lower Putah Creek Watershed begins at Monticello Dam (Lake Berryessa) and continues 30 miles downstream to Putah Creek's confluence with the Yolo Bypass, which carries Putah Creek water to the Bay-Delta. Although the lower Putah Creek represents one of the most extensive remaining tracts of high quality wildlife habitat in Yolo and Solano Counties, and is home to a unique assemblage of fish and special-status wildlife species, it suffers from substantial infestations of invasive weeds, eroding banks and causing habitat loss and degradation, flood-related problems, and non-point source pollution. The three-phased approach includes:

- Phase I: Stakeholder facilitation and identification of issues
- Phase II: Development of a comprehensive biological and physical resource assessment and development of a stakeholder-based Watershed Management Action Plan
- Phase III: Implementation of technically defensible and sustainable restoration and enhancement projects.

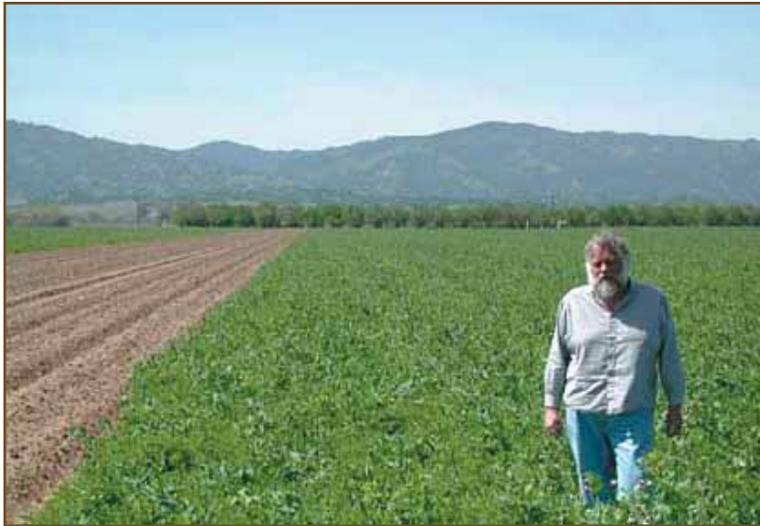
This project continues the progress made under Phase I and expands its geographic scope to include Pleasant Creek. This project also initiates and implements the Phase II comprehensive resource assessment of lower Putah Creek and its tributaries. As part of Phase III, this project implements the specific prioritized and urgent restoration and enhancement actions and continues projects already identified or underway. As the project progresses, additional Phase III projects will be identified that could be funded by other sources.



Lake Berryessa's morning glory spillway.

Contact Information

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Cover crop trials in progress.

Award Amount
\$118,000

Watershed
Cache Creek Watershed

County
Yolo County

CALFED Region
Sacramento Valley Region

Legislative Districts
US Congress: 2
State Assembly: 2
State Senate: 5

Purpose

Provide resources for outreach to diverse participants to coordinate activities in support of better management of the watershed.

Project Goals

- Educate landowners and support watershed stewardship through on-the-ground demonstration and education projects.
- Promote collaboration and partnerships between diverse stakeholders and agencies involved in activities in the watershed.
- Facilitate landowner conservation efforts.
- Monitor the project's effects and communicate results within the community and throughout the CALFED region.

Benefits to the CALFED Program

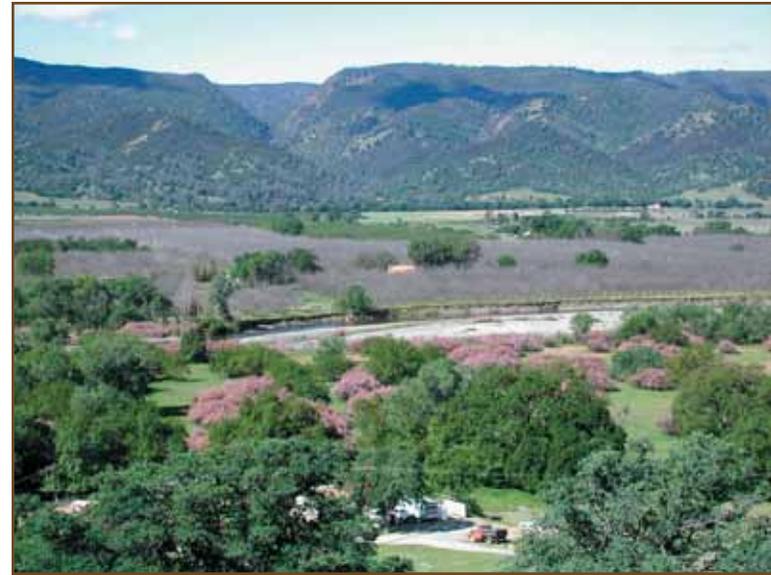
Cache Creek is part of the Ecosystem Restoration Program's (ERP) Yolo Basin Ecological Management Zone. The ERP Plan (ERPP) acknowledges the need to reduce mercury loads into the watershed, improve riparian habitat, and control streambank erosion within the watershed. The ERPP also states that supporting the involvement of local citizens and interested parties in existing organizations such as the Cache Creek Stakeholders Group would help to restore and maintain Cache Creek. Therefore, this project, which is being implemented in collaboration with the Cache Creek Stakeholders Group, is helping to achieve both the goals of the local community and those of the CALFED Program.

Project Overview

The Capay Valley subwatershed of Cache Creek in Yolo County consists of roughly 60,000 acres with 24 miles of meandering river. The upstream watershed's history of gold and mercury mining has left a legacy of high mercury levels in the creek. Upstream management practices as well as natural fluvial processes have also contributed to high sediment loads traveling downstream. Other issues of concern include invasive noxious plants and excessive streambank erosion in the Capay Valley.

In order to alleviate and reverse these problems, the Yolo County Resource Conservation District (RCD) and the Cache Creek Watershed Stakeholders Group (CCWSG) are working together on the Capay Valley Watershed Improvement Project (CVWIP). The goals of the CVWIP are to (1) educate landowners and support watershed stewardship, (2) facilitate landowner conservation efforts, and (3) develop a comprehensive watershed management plan to direct conservation efforts. The RCD and the CCWSG are working closely with Capay Valley Vision and the Cache Creek Conservancy to encourage collaborative watershed stewardship.

This project focuses on outreach to diverse stakeholders, watershed groups, agencies, and others to coordinate activities supporting better watershed stewardship. There are three primary tasks. The first task is to plan and implement hands-on demonstration projects in the watershed and create a framework to provide permitting assistance to landowners for restoration projects. The second task is to maintain and monitor the demonstration project sites for successful establishment, effectiveness, and watershed health benefits for use in outreach and adaptive management. The third task is to communicate project techniques and results within and beyond the watershed through an outreach program, regular stakeholder meetings, and coordination among various watershed groups.



A view of Cache Creek and the Capay Valley.

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