

## Case Study: Sacramento River Watershed Program

**Watershed:** Sacramento River Watershed

**Researcher:** Lauren Miller

Year	Grant Program	Project Title	Watershed	Award Amount	Additional Funding
2005-2008	CalFed Watershed Program	Sacramento River Watershed Program- Program Support	Sacramento River	\$2,262,760	

This case study assesses one grant received by the Sacramento River Watershed Program for a CalFed Watershed project grant. The findings of this research are based on interviews with stakeholders involved in processes covered by the grants as well as a review of documents produced for the grants.

### Project Overview

The “Sacramento River Watershed Program- Program Support” project was funded by the CalFed Watershed Program. Project implementation began in 2005 and the final report was submitted in 2008. Program elements included support for watershed efforts, public outreach and education, and watershed monitoring and assessment across the expansive area that comprises the Sacramento River Basin. Encompassing 19 Californian counties, the SRWP developed partnerships with a large number of organizations and agencies across the Sacramento watershed. A few major project partners are the Tehama County RCD, Nevada County RCD, Dry Creek Conservancy, and the U.S. Geological Survey. The State Water Resource Control Board (SWRCB) administered this grant under Proposition 50.

### Sacramento River Basin

The Sacramento River Basin is the largest river basin in California, consisting of 27,000 square miles with the Pit, Feather, and American Rivers as primary tributaries. The headwaters of the Sacramento River are the Klamath Mountains, flowing 400 miles to the Sacramento-San Joaquin Delta and San Francisco Bay. The Sacramento River Basin drains the western slopes of the southern Cascades and Mount Shasta, the eastern slopes of the Coast Range, and the northern Sierra Nevada carrying thirty-one percent of the state’s surface water runoff. The Sacramento River provides drinking water for two-thirds of California’s residents and habitat for hundreds of species of fish and wildlife.

Due to the sheer size and diversity of the river, management challenges vary across the basin. To address these challenges, the Sacramento River Watershed Program divides the basin into six subregions structured by geography, landscape, and management issues (see Appendix D). Common management challenges across subregions include: health and fuels management, aquatic and riparian habitat, and salmon and steelhead populations. Challenges with erosion, natural stream function, and open space and land conservation affect about half of the sub-

watersheds throughout the Sacramento River Basin. Less common management challenges across the region include wild trout habitat, flood management, water supply, and invasive species. Owing to the vast geography and breadth of watershed management, a number of organizations and agencies have established widespread networks to address concerns.

## **Organization**

The Sacramento River Watershed Program (SRWP) is a nonprofit organization that brings together various groups across the watershed to address watershed-related challenges in the Sacramento River watershed. The missions of the SRWP is “to ensure that current and potential uses of the watershed resources are sustained, restored, and where possible, enhanced, while promoting the long-term social and economic vitality of the region.” The SRWP takes a collaborative approach to watershed health improvement, utilizing consensus-based partnerships, coordinating research and monitoring, and enhancing education among Sacramento River watershed stakeholders. Local efforts and local participation are emphasized as mechanisms for resolving watershed challenges from a watershed-wide perspective.

## **Organizational History**

Prior to the formation of SRWP, three organizations partnered in managing water quality in the Sacramento River – Central Valley Regional Board, Sacramento Wastewater Plant, and Sacramento Regional County Sanitation (Sanitation). Driven by a lawsuit related to meeting Environmental Protection Agency requirements related to wastewater, Sanitation hired Dennis Bowker to establish a nonprofit -SRWP- to work with communities across the Sacramento River watershed. Sanitation provided the majority of initial funding for the transition of water quality management from the three organizations to the Sacramento River Watershed Program. This made the program eligible for funding. The SRWP pursued efforts to unite water quality monitoring and establish a uniform methodology for monitoring across the entirety of the Sacramento River watershed, working at the watershed-level both upstream and downstream. Previous efforts targeted localized point-source issues, e.g., discharge, the original motivating factor that spurred the original partnership.

## **Project Grant**

The purpose of the project grant was to provide funding for the Sacramento River Watershed Program’s three main pillars: 1) support for local watershed efforts; 2) outreach and education for the public; and 3) monitoring and assessment of the watershed. Project goals were divided between long-term goals and short-term goals. Short-term goals included: 1) sustain effective processes to improve water quality and safeguard beneficial uses of water for Sacramento basin watershed stakeholders; 2) provide accessible and reliable scientifically sound information; 3) provide support for community-based, locally-led environmental management; 4) provide sound information to watershed stakeholders; and 5) promote watershed-level management with stewardship and collaboration. The long-term goal was to sustain, restore, and enhance the current and potential uses of the Sacramento River Watershed and the social and economic vitality of the region.

## **Project Grant Process and Outcomes**

The SRWP received \$2,262,760 in CalFed project funds to link watershed management efforts across the Sacramento River watershed. The CalFed grant was the largest grant ever received by the SRWP and supported their programs for nearly 3.5 years. Prior to receiving the grant, the organization developed four subcommittees, including: the Monitoring Subcommittee, the Delta Tributaries Mercury Council, the Agriculture (“Ag”) Issues Subcommittee, and the Public Outreach and Education Subcommittee. The grant financially supported the committees, primarily expanding the scope of the water quality monitoring work. Minimal information was available for the Agricultural Issues and Public Outreach and Education Subcommittees.

### ***Monitoring Subcommittee***

The Monitoring Subcommittee focused on water quality and was the impetus and primary focus of the grant as the SRWP wanted to understand the overall health of the watershed, determine a baseline measure, and understand the seasonal and locational variability across subwatersheds, according to informants. In the early 2000s, consultant Larry Walker Associates worked with SRWP to initiate a program in the Sacramento River watershed to understand the impacts of human activities on water quality of the American River. Six monitoring sites across the Sacramento River watershed were established launching efforts to monitor upstream and downstream, extending previous water quality monitoring efforts. This effort was the first comprehensive and continuous monitoring program to encompass the entire Sacramento River watershed.

Several informants viewed the grant program as “quite successful” in coordinating organizations in the watershed and encouraging agency interaction across the watershed. The program allowed for comparability of methods and indicators watershed wide. However, the Department of Water Resources (DWR) and the SWRCB continued to independently monitor water quality in the Sacramento River watershed. The grant supported coordination efforts, conducted by SRWP that laid the foundation for securing federal funding to integrate methods and water quality data across the watershed. Organizations across the watershed met annually, developed an annual report, and maintained an adaptive approach to water quality metrics as to account for the diversity across the watershed. One informant attributed participation in collaborative monitoring and information sharing efforts to the CalFed Watershed Program funding and the voluntary opportunities it created as opposed to forcing stakeholders to the table due to regulatory requirements. Through these efforts, the groups created a standardized list of toxic metals and defined a baseline of water quality to understand seasonal and locational variability through tracking and characterizing water quality and, as a result, creating a better understanding of what flows into the Delta.

The Sacramento River Water Information Module (SWIM) was another major component of the monitoring program. Initiated with seed funding from a US Environmental Protection Agency grant in 2006, the CalFed Watershed Program expanded the SWIM effort for watershed data management in 2007. More recently, DWR’s Integrated Regional Water Management process

has provided funding for this effort. Presently the Cosumnes, American, Bear, and Yuba (CABY) and Pit River IRWMs are utilizing SWIM to manage their data and information. Post-grant, but emerging from SWIM, the SRWP created the Sacramento River Watershed Data Portal as an extensive online collaborative platform that allows users not only access to monitoring data, studies, and reports through an interactive platform. Users can compile maps and graphs with regional data, as well as data from a number of state and federal agencies (e.g., US Fish and Wildlife Service, California Fish and Wildlife Atlas of Biodiversity, DWR, National Oceanographic and Atmospheric Association, California Department of Forestry and Fire Protection). Data and information can be used to prioritize projects and connect partners. Today, this data portal is the primary focus of SRWP.

### *Delta Tributaries Mercury Council*

The CalFed project grant also contributed to sustaining the Delta Tributaries Mercury Council subcommittee (Mercury Council), one of the four subcommittees created prior to receiving the CalFed grant. The original motivation for the subcommittee stemmed from regulatory requirements. Informants stated that direct regulatory pressure has since diminished<sup>1</sup>. This was in part due to the monitoring program revealing acceptable water quality in the Sacramento River watershed. A diverse group has become interested in mercury “as it is not geographically restricted to the watershed,” as mentioned by a key stakeholder as the reason for the continued, active stakeholder participation in the subcommittee. The Mercury Council continues today, meeting every three months. Following the conclusion of the CalFed funding, one Mercury Council participant volunteered to lead the charge. Informants attribute the continuation of the Mercury Council to the volunteer efforts of this “highly functioning, very intelligent” individual who is “not just a facilitator, but leads efforts based on information, and is well connected and highly trusted.” This volunteer facilitator cites their personal interest in staying engaged with mercury challenges and a desire to maintain working relations as to why they continue to lead this group. SRWP remains a “backbone” for the group, according to one informant, through their efforts in hosting and maintaining the website for the Mercury Council.

### *Agricultural Subcommittee*

The Agricultural Subcommittee existed throughout the duration of the CalFed grant, but once funds were depleted, the agricultural program was dropped from the SRWP. During the CalFed support, the agricultural participants “were always with some suspicion,” in their participation with the SRWP subcommittee, according to one informant. The meetings focused on surface water and gaining a better understanding of Sacramento water quality. Following the end of the SRWP subcommittee, two agricultural groups, rice and a broader agricultural group, continued to meet. With regulatory requirements that emerged, the agricultural groups continued to work to meet these legal obligations outside the scope of the grant and SRWP.

---

<sup>1</sup> Measurable progress in water quality was one of the goals that SRWP have to achieve to sustain support from the lawsuit involving the Sacramento Regional Sanitation District that prompted the creation of SRWP.

### *Public Outreach and Education Subcommittee*

The Public Outreach and Education Subcommittee was not discussed by informants. However, according to the final report, SRWP increased public outreach and education through a number of avenues. SRWP expanded their television commercials which has previously been absent from the northern section of the watershed to include this region, produced three newsletters, launched an e-newsletter, and partnered with the Sacramento Bee Newspaper for a 16-page watershed education insert (October 13, 2007).

### *Challenges*

The intention for the SRWP's CalFed grant was to create a self-sustaining monitoring system. This was not accomplished according to several stakeholders. Following the conclusion of the grant, on-the-ground monitoring efforts diminished as SRWP did not receive another grant supporting those efforts. However, the SRWP has more recently expanded their role through other funding mechanism (e.g., IRWM, SRWCB) in data sharing and management in which stakeholders from around the Sacramento River watershed can share and access monitoring data through their online, interactive platform.

Seemingly insurmountable challenges led to the discontinuation of the monitoring efforts. Informants referred to the following challenges: 1) managing relationships with smaller watershed groups with limited watershed funding (in part due to the 2008/2009 bond freeze); and 2) overseeing such a diverse and expansive watershed under a single, umbrella organization (resource- management boundary mismatch). Managing relationships across the watershed had mixed results. While some organizations across the watershed were able to better connect with others to share water quality information, the SRWP was also seen as a "huge machine" and with "much of the grant funding [for watershed efforts] drying up, some of the smaller organizations were not happy that such a large amount of money was going to the umbrella organization." One informant described the organization as "quite influential for a long time until it became self-referential over mission referential." As alluded to by this informant, once grants for watershed monitoring efforts became scarce, the organization was fighting for survival. Nonetheless, the organization weathered the drought in watershed funding and continued coordinating data management and sharing across the Sacramento River watershed.

### **Key Findings**

The Sacramento River Watershed Program is the nexus for water quality data across the Sacramento River through their development and management of the Sacramento River Watershed Data Portal. While on-the-ground coordinating and monitoring efforts have subsided, the organization realized in their monitoring efforts that "the most important way to communicate and collaborate across the region is to use the data and information to prioritize programs and projects and get funding." The CalFed Watershed Program funding assisted in expanding their technologic pursuits supporting the continued development of SWIM, which is still used today and laid the foundation for the Data Portal.

## **Scale**

Managing a monitoring program across the entire Sacramento River watershed is an enormous endeavor geographically and financially. Through their efforts, SRWP and consultants were able to develop a long-term baseline understanding of ambient water quality and what was being brought into the Delta. The data collected helped to identify the most pressing water-related issues in the Delta. However, the expansive geographic scale of the Sacramento River compared to the single full-time employee of the SRWP illuminated a scalar mismatch. The mismatch between the resource boundaries and organizational capacity of the SRWP led to reliance on volunteer time. SRWP did not have staff, but the equivalent of 5-8 full-time employees of volunteer hours contributed to the project. One stakeholder reflected on how “SRWP was not sustainable with its size at the time” and was “unable to create a self-sustainable monitoring system.” Other variables contributing to the challenge of an expansive geographic area include: the diversity of issues, the concentrated population in Sacramento with pressure to focus in close proximity to the area (urban centric appeals), and coordination of two distinct state agencies tasked with monitoring water quality in parts of the watershed. One informant concluded that “a single entity cannot manage the entirety of the Sacramento River Basin.”

Nonetheless, a decade following the CalFed project grant funding, the monitoring program has taken a new form and continues to be the foundation of the organization. SWIM expanded during the CalFed Watershed Program grant, and was a stepping stone for the development of the Sacramento River Watershed Data Portal, which connects partners across the watershed, as well as partners to data, funding, projects, and is a central portal for information. The tool is sanctioned by the SWRCB and mandated to ensure data collected is available for use by stakeholders. Through technological advancement, SRWP has been able to better address the scalar mismatch of the monitoring program and provide a resource for all stakeholders to contribute to and access, as the portal approach is not reliant on a single person nor entity to manage data. SRWP is recognized today as a coordinating organization for the Sacramento River Watershed.

## **Leadership, Longevity and the Role of “Program Champions”**

A long-term outcome from the grant is its contribution to the SRWP framework, as informants noted how without base funding, the program would have fallen apart. The program did not dissolve, but has transformed. SRWP has greatly progressed data management and sharing for stakeholders across the Sacramento watershed. SRWP does not conduct on-the-ground monitoring, but connects the data collected and other watershed information on their publicly-accessible, interactive data portal.

While not currently funded through the SRWP, the Delta Tributaries Mercury Council continues to meet. Participants attribute the longevity of this group to a single individual who volunteers their time to prolong this effort. Without this “program champion,” there may not be a forum to discuss mercury among a diverse group of stakeholders in the watershed. One informant who is familiar with the Department of Conservation Watershed Coordinator Program likened this program champion’s role to that of a watershed coordinator as they not only facilitate the

meetings, but are a trusted and well-connected individual who provides reliable information and resources for the stakeholders.

### **Information-sharing**

While the SRWP did not succeed in developing a self-sustaining monitoring program across the Sacramento River watershed, it created an information-sharing platform that evolved into an extensive, interactive data portal that brings together data and partners from the entire watershed. The Sacramento Watershed Portal is a powerful tool for cooperative management in the watershed for collecting, displaying, and aggregating data and information, connecting a number of federal, state, and local watershed monitoring and data collection activities. The platform advances transparency through public access to data and encourages partnerships among various stakeholders, including a number of federal and state agencies, working in the watershed. Through increased access to information and augmenting partnerships, the Sacramento River Data Portal presents ample opportunities to reduce redundancies in watershed efforts, improving efficiency.

## **Appendix A. Methods**

One researcher conducted five phone interviews for the grant received by the Sacramento River Watershed Program with a diverse group of stakeholders, including numerous former staff, consultants, and a subcommittee member. All available documents were reviewed.

## **Appendix B. Participants**

Representatives from:

Sacramento River Watershed Program

Delta Tributary Mercury Council

Private Consultant

Larry Walker Associates

### Appendix C. Available Grant Documents

Council for Watershed Health	Individual Grant Proposal	Catalogued Description	Annual Update(s)	Individual Final Report	Catalogued Final Reports	Other	
2005-2008 (Project Grant)				x	x	x	Monitoring Plan

### Appendix D: Sacramento River Watershed Program Subregions and Management Challenges

Subregion	Watershed	Key Management Issues									
		Salmon/ Steelhead	Wild Trout	Forest Health/Fuels Management	Aquatic/ Riparian Habitat	Water Quality	Water Supply	Flood Management	Open Space/Land Conservation	Erosion/ Natural Stream Function	Invasive species
Northeast	Upper Sacramento River		X	X	X	X					
	McCloud River		X	X	X	X					
	Pit River		X	X	X	X	X			X	X
Westside	Clear Creek	X	X	X	X					X	
	Cottonwood Creek	X		X	X				X	X	
	Tehama West			X	X				X	X	X
	Stony Creek	X		X	X					X	X
	Cache Creek			X	X	X	X	X		X	X
	Putah Creek			X	X	X				X	X
Eastside	Tehama East	X		X	X				X		
	Stillwater/ Churn Creeks				X	X	X		X		X
	Cow Creek	X		X	X	X			X		
	Bear Creek	X		X	X				X		
	Battle Creek	X		X	X	X			X	X	
	Mill Creek	X		X	X				X	X	
	Deer Creek	X		X	X			X		X	

	Big Chico Creek	X		X	X	X			X		
	Butte Creek	X		X	X	X	X	X			
Feather	Upper Feather River		X	X	X	X				X	
	Lower Feather River	X			X	X	X	X	X	X	
American	Upper American River		X	X	X	X					
	Lower American River	X			X		X	X			
	Yuba River	X	X	X	X	X		X			
	Bear River	X		X	X	X					
Sacramento Valley	Sacramento River Mainstream	X			X	X	X	X	X		

