

Sacramento River Watershed Program 2013 Annual Summary and Report



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Introduction

The Sacramento River Watershed encompasses 27,000 square miles from the Oregon border to the Delta, covers most of northern California, and links every aspect of life in the region. It's one of the largest watersheds in the United States, and carries 31% of the state's total surface water runoff, provides drinking water for residents of northern and southern California, supplies farmers with the lifeblood of the state's agricultural industry, and provides vital habitat for hundreds of fish and wildlife species. It is also the home of more than 2 million Californians. From the forests, to the valley, from the small towns to the cities — it is the place where we live, work, and play. It is imperative that we protect this valuable resource to serve the diverse needs of today and those of future generations.

Founded in 1996, the Sacramento River Watershed Program (SRWP) brings together dozens of groups and thousands of people concerned about the health of the Sacramento River and its watershed. The program provides a network for building a basin-wide context to improve watershed health. It operates through consensus-based collaborative partnerships, coordinating research and monitoring, and enhancing mutual education among the stakeholders of the Sacramento River Watershed. SRWP supports and preserves the integrity of local efforts and adds innovation, connectivity, and presence on a statewide stage for those efforts. SRWP also helps disseminate information about the watershed and coordinates monitoring activities to continually assess water quality and other indicators of watershed health.

This is the first annual summary and report of this kind prepared and produced by the SRWP. Moving from headwaters forests and rivers, to the greater Sacramento Valley, this annual report summarizes current conditions and recent trends for selected watershed attributes including forest health and fire, water quality and quantity, fisheries, and agriculture. It further highlights programs and people working to promote watershed health in the basin along with some challenges to the continuation of that effort. Through this and subsequent annual watershed reports, SRWP will inform our watershed stakeholder community and fulfill our mission, below.

SRWP's mission is to ensure that current and potential uses of the watershed's resources are sustained, restored, and where possible, enhanced while promoting the long-term social and economic vitality of the region

From The Executive Director

2013 was a year of transition. After seven years as the Executive Director, Mary Lee Knecht accepted a position with the Bureau of Reclamation in December 2012. I assumed her duties while continuing to serve as the Watershed Coordinator, and in September 2013 I was made Executive Director. I am eager to guide this organization as it endeavors to bring stakeholders together and share information and resources to address all water-related issues within the Sacramento River watershed.

“The future of California is joined at the hip with the Sacramento River”

This quote by Jeff Mount, the Founding Director of the Center for Watershed Sciences at UC Davis, is used in many of our publications and is the driving force behind our watershed management efforts. As the Executive Director, I thought it was important to make certain that stakeholders know what we do and most importantly, ensure that what we do is truly benefiting the Sacramento River watershed.

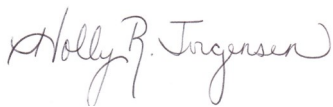
Throughout 2013, I discussed some of the most pressing issues facing the watershed with the board and how SRWP could best address those issues. The board and I took inventory of our strengths and our weaknesses and brainstormed how we can use our strengths to fulfill our mission. We concluded that we needed to spend the time and energy to develop a long-term strategy for identifying and securing funding for watershed management in the Sacramento River watershed for our organization and our partners. Our short-term goals include using our existing funding and strengthening partnerships as the seed for long-term goals, while continuing to serve watershed stakeholders through our three core programs. This was the impetus for our Partnership Initiative.

The Partnership Initiative (see page 21) was founded on the shared belief that stakeholder involvement and investment is critical to the success of our organization and watershed management efforts within the Sacramento River basin. It is simply an effort by SRWP to reach out to expand on and develop new partnerships and discuss what they see as the most important issues they're facing and identify opportunities to leverage resources and minimize duplicate efforts. The Partnership Initiative will renew efforts to showcase and coordinate successful watershed movements, communicate the significance of the Sacramento River Watershed and encourage investment in the region.

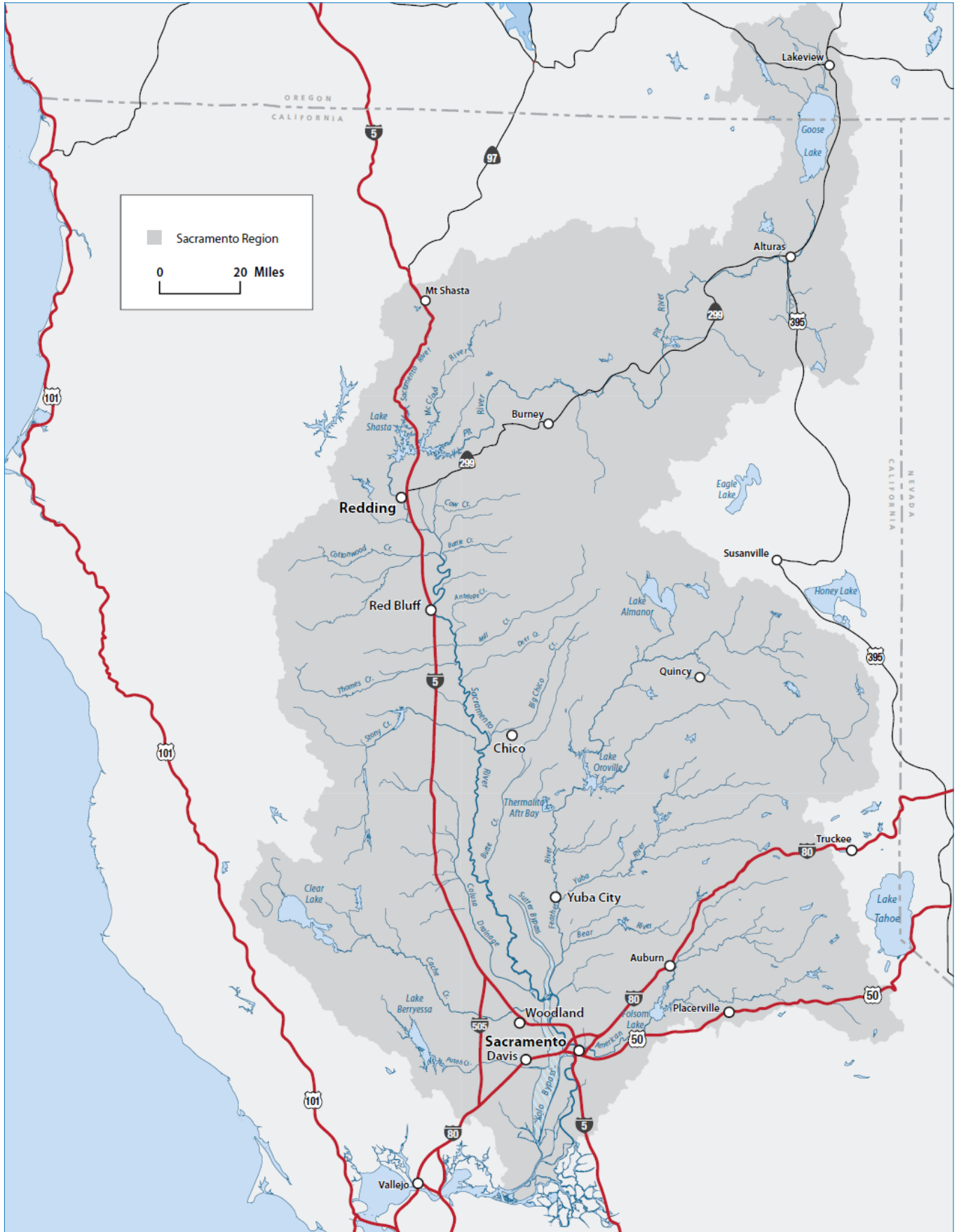
We continue to make progress in all three of our program goals: to provide resources and other forms of support for local watershed efforts, to coordinate monitoring in the Sacramento River watershed and to share those results, and to educate and inform those responsible for making watershed management decisions.

This report showcases Sacramento River watershed management efforts, describes current resource conditions and trends within the watershed, and promotes and shares information about SRWP and our partners. The report is a visual representation of SRWP's accomplishments and demonstrates our fiscal responsibility and ongoing commitment to highlighting and resolving watershed issues.

I look forward to working with you on these immediate and long-term program goals, and both I and our Board of Trustees welcome your questions, comments, and suggestions. Our goal is a program benefitting all inhabitants of the Sacramento River Watershed, and ultimately the entire State of California. We can't do that without you!



Sacramento River Watershed Map



Investment

Just as important as the need for water is the need for investment in watershed management. As stated by the California Department of Conservation (DOC), “a watershed approach relies on the premise that many water quality and ecosystem problems are best solved on a watershed level instead of focusing on an individual water body or the pollutant discharge level in a single location.” The source and amount of funding for watershed management is dependent upon both the economic and political climate and has continued to decline since the state funding freeze occurred in 2008. Existing watershed protection and natural resource conservation programs including those managed by the DOC, are facing declining and expended bond act funds which need to be replenished or replaced to prevent the wide-scale elimination of effective programs. In addition to overall funding shortages, the watershed community continues to face challenges including lack of funding for administrative costs needed to responsibly manage programs and projects, onerous reporting and invoicing requirements, and delayed payments.

Investing in watershed protection and natural resource conservation is critical for the realization of multi-objective actions that result in long-term water resource management. DOC Assistant Director John Lowrie spoke at SRWP’s January Watershed Management Round Table Meeting and shared his perspective on the current outlook for watershed investment. He stressed the need for incremental funding for communities and organizations to intervene and to assist with watershed management and restoration efforts. John also shared that he has seen a renewal in funding considerations for natural resources management in Governor Brown’s budget that has in recent years been severely cut or unfunded.

According to the US Environmental Protection Agency (EPA), “a watershed approach is the most effective framework to address today’s water resource challenges.”

Governor’s Budget

The Governor’s budget contains Cap and Trade funds totaling \$850 million and includes \$30 million for the California Department of Fish and Wildlife for wetlands and watershed restoration, \$50 million for the California Department of Forestry and Fire Protection for improving forest health and reducing the risk of wildfire, and \$20 million for the California Department of Water Resources (DWR) for water and infrastructure efficiency projects. The current budget also proposes \$619 million for DWR to implement key objectives in the California Water Action Plan. The plan identifies sustainable and integrated financing opportunities as a key action and designates \$473 million for Integrated Regional Water Management. Budget committee hearings are underway and the budget should pass and be signed by Governor Brown in June 2014.

California Water Bond Legislation

The Safe, Clean and Reliable Drinking Water Supply Act of 2014 is an \$11.1 billion general obligation bond proposal originally drafted by the state Legislature in 2009 and is aimed at providing funding for projects and programs to address the ecosystem and water supply issues in California. Several bills to amend the existing water bond have been introduced including Senator Lois Wolk’s \$6.8 billion SB 848, Assembly Member Anthony Rendon’s \$8 billion AB 1331, Assembly Member Dan Logue’s \$5.8 billion AB 1445, Assembly Member Henry Perea’s \$9.25 billion AB 2686, Assembly Members Frank Bigelow and Connie Conway’s \$7.9 billion AB 2043, Senators Anthony Cannella and Andy Vidak’s \$9.5 billion SB 927, and Senator Cathleen Galgiani’s \$5.1 billion SB 1370.

According to the Association of California Water Agencies, “substantial investments in ecosystem restoration and habitat improvements are needed if we are to meet the coequal goals of improved water supply reliability and ecosystem health.” A water bond passed by voters could significantly influence watershed management throughout the Sacramento River Watershed and the state. The California Urban Streams Program (CUSP) claims that “funding, as can only be provided by a statewide water bond, is the missing component necessary to successfully carry forward the landmark 2009 comprehensive water legislation.” We share CUSP’s hopefulness that the 2014 water bond could “regain some of the focus and socio-economic equity in water and watershed resources management.” SRWP encourages and optimistically awaits funding for watershed management activities that protect and improve California’s watersheds and address associated challenges.

More information is available on our website: www.sacrriver.org.

Forests: The Headwaters

Importance of the Headwaters

By Todd Sloat, SRWP Trustee and resident of the Headwaters



Discussion on the importance of the headwater areas within the Sacramento River Watershed is often relegated to the tail end of conversations. About 90% of the population in the watershed resides within the Sacramento Valley, yet it's the headwater areas that produce nearly all the watershed's wood products (e.g. lumber, wood shavings, posts and poles), electricity, and water. It would be difficult to imagine how the residents and producers in the Sacramento Valley would survive if the adjacent land mass was the Nevada desert rather than the majestic Sierra or southern Cascades.

Watershed health and the transport of water down to valley areas may be the least appreciated service provided by source water areas. In times of drought — such as the last several years — a functional watershed becomes even more important: California's water storage, in terms of snowpack, is almost entirely in the headwaters.

Like water, sediment flows downhill naturally from gravitational forces, largely brought with water flows. The amount and rate of sedimentation is greatly affected by the health of the upland areas (e.g. forests, meadows, and grasslands). Catastrophic wildfires, occurring more often in the past decade from climate change and the longer dry season, denude the forest of vegetation and create higher sedimentation rates than would occur if the forest structure was healthy and more resilient. Watershed function depends on the connectivity of ground and surface water flow, the uptake and release of water by meadows and grasslands, and the health of the soil and biota throughout the watershed.

Rural economies are facing difficult times. Dependent upon resource development and extraction, these economies have changed significantly since the 1960s and 70s, and the lumber mills that supported so many communities have closed or are facing shrinking budgets, thus shrinking the workforce. Mills once were common in small rural towns throughout the southern Cascades and the Sierra Nevada, but today it is more common to find abandoned mill sites than active ones.

The lack of active forest management makes it challenging to reverse the negative effects that fire suppression has had on forest health. There are essentially two choices for overstocked forests: 1) letting the forest burn through prescribed fire (requiring manpower and budgets) or accidental, catastrophic fire; or 2) mechanically removing wood volume and biomass to reduce fire fuels. The latter choice can add jobs to the region, resulting in energy production via biomass plants, and mitigating massive greenhouse gas emissions and negative effects on the watershed from catastrophic wildfires.

People visit the headwaters to recreate, find open space, and seek a place to rest and refuel. There are efforts afoot to ensure that all Californians understand the importance of the headwaters to their quality of life including [Carpe Diem's Healthy Headwaters Program](#), the [Mountain Counties Water Resources Association's Sierra Nevada Headwater Policy Principles](#) and the [Sierra Nevada Conservancy's Sierra Nevada Forest and Community Initiative](#). California's headwaters should be protected, enhanced, and maintained for all future generations within the watershed.

The headwater areas produce nearly all the watershed's wood products (e.g. lumber, wood shavings, posts and poles), electricity, and water.

Forests: The Headwaters

Sierra Nevada Forest and Community Initiative (SNFCI)

By Mandy Vance, Sierra Nevada Conservancy



The Sierra Nevada Conservancy (SNC) and its many partners have charted the course for bringing our forests, economies and communities back into healthy balance through the SNFCI. In 2009, the SNFCI was unanimously endorsed by all 22 Boards of Supervisors in the SNC region and more than 90 additional individuals and organizations. The SNC is deeply connected to the Sierra Nevada region, its communities and their needs, and serves in convener and mediator roles in the resolution of controversial issues.

Through SNFCI, the SNC has harnessed the power of collaboration to empower stakeholders and land managers to shape forest management and move beyond traditional ideologies and conflicts, leading to fewer lawsuits and appeals, and restoration activities occurring with broad support amongst a variety of stakeholders. SNC works with local collaborative efforts to support on-the-ground restoration efforts, such as the [Whiskey Ridge Ecological Restoration Project](#) in the Sierra National Forest. It was developed through a SNC funded and facilitated collaborative process, and received a Region 5 Forester's Honor Award in 2013. In 2012, two collaborative projects supported by the SNC were selected for Collaborative Forest Landscape Restoration Program (CFLRP) funding. The [Amador-Calaveras Collaborative Cornerstone Project](#) received \$730,000 and the [Burney Hat Creek Basins Project](#) received \$605,000. SNC was a contributing author of the Cornerstone proposal, and has engaged continually with stakeholders and coalitions to ensure ongoing funding commitments for the CFLRP.

Local collaboration can only be as successful as overarching policies allow, which is why the SNFCI also initiated and convenes the SNFCI Regional Coordinating Council, which works at the regional level with a focus on policy, investment, and science and research issues that affect forest health, fire and related economic development. This work supports and informs local collaborative efforts as they convene, identify issues, develop projects and secure funds to implement local projects and processes in support of SNFCI's goals. The Council's efforts are designed to support the whole Sierra Nevada region.

SNFCI promotes triple bottom line solutions. The fate of local communities and economies are inextricably intertwined with those of forested lands, though that has been traditionally difficult to define, measure and design. The SNC is moving this idea from conceptual to concrete, in the form of diversified forest-based economic activity that will ensure local businesses will be able to more effectively partner with the Forest Service to benefit the local economy. In 2013, the SNC was part of a collaborative awarded a \$250,000 Wood Energy Team grant, to be used to enhance education and technical assistance to communities pursuing bioenergy facilities and to coordinate bioenergy activities state-wide. This award was one of five awarded nationwide, and the only one in California.

In addition, the SNC's Proposition 84 Grant Program has awarded over \$50 million in funds to restoration projects, many of which reduced the risk of large damaging wildfires that threaten communities, water reliability and quality for Californians, and also created much needed jobs. While progress has been made in the region, there is the need for continued and increased investment of resources and broader stakeholder engagement to implement the solutions that will return the Sierra Nevada to a state of environmental, economic and community health and prosperity, to the benefit of all Californians.

For more information, visit our website: www.sierranevada.ca.gov/our-work/snfc-home.

Forests: Fire and Fuels

In the **Sacramento River Watershed**, fire is a natural part of the system. The annual number of fires and where they take place is an indicator of watershed health. Specifically, disease pressure, drought, no-burn management practices and timber harvest can directly impact the health of a natural landscape which can be observed in wildfire activity. Forests in a region damaged by increases in pest activity, dry from drought, and laden with excessive fuel can burn more frequently and in greater extent.

Fire suppression efforts over the past 100 years have resulted in an accumulation of fuels on the forest floor that pose a high fire hazard. With the help of Fire Safe Councils, residents living in high risk areas receive education and resources to help them adapt to living in fire prone areas, including creating and maintaining defensible space, developing firewise landscaping and preparing plans for safe and efficient evacuation.



2013 Northern California Wildfire Season

By Zeke Lunder, Deer Creek Resources

While the 2013 northern California wildfire season was extraordinary for its length, the total number of acres burned within the Sacramento River Watershed was not above average. Statewide, about 120,000 acres (70% of the five year average) burned on private lands while fires on Northern California public lands burned about 60% of the 10 year average. Northern California fires of note in 2013 include:

Panther Fire

- Started in early May and burned approximately 7,000 acres in Tehama County
- Brush fuels were moist and much of the spread was due to high/dry north winds
- Sierra Pacific [clear cuts](#) created control problems by allowing spot fires to [spread rapidly](#)
- Much of the area burned experienced [high-intensity fire](#)
- Most of the burned private timberland has been logged

Swedes Fire

- Started in August and burned approximately 2,400 acres in Butte County
- Fuels primarily consisted of lower-elevation brushlands managed by CAL FIRE
- CAL FIRE focuses more on protecting life and property than managing ecosystems
- Growth of [marijuana farming](#) has impacted wildfire protection
- No timberland burned and most of the vegetation that burned is fire-adapted
- Has little negative effect on the watershed

Deer Fire

- Started in late August and burned approximately 11,000 acres in eastern Tehama County
- Access to the area was very difficult and the Lassen Foothills have a [history of large rangeland fires](#)
- The fire burned primarily in grass, blue oak woodland, and brush
- Fires here regenerate brush that provides an important food source for Tehama deer herds
- Initially difficult to contain as a small fire due to location under powerlines
- This fire occurred in an area that needs frequent fire and the fire itself caused little resource damage

Clover Fire

- Started in September and burned approximately 8,000 acres in Shasta County
- This fire was also driven by [high north winds](#)
- Burned 70 homes and 140 structures
- The area burned has seen a large amount of [pot farming-related growth](#) in the last 5 years
- Increased population = increased risk of fire ignitions
- Burned mainly in fire-adapted plant communities and did little lasting damage to the watershed

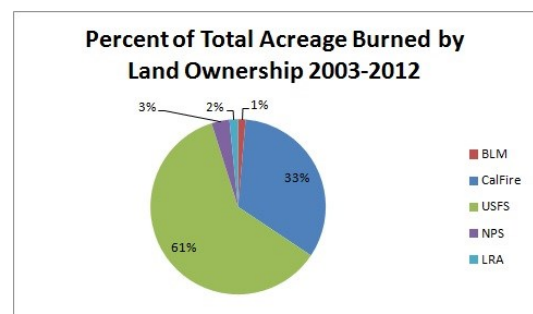
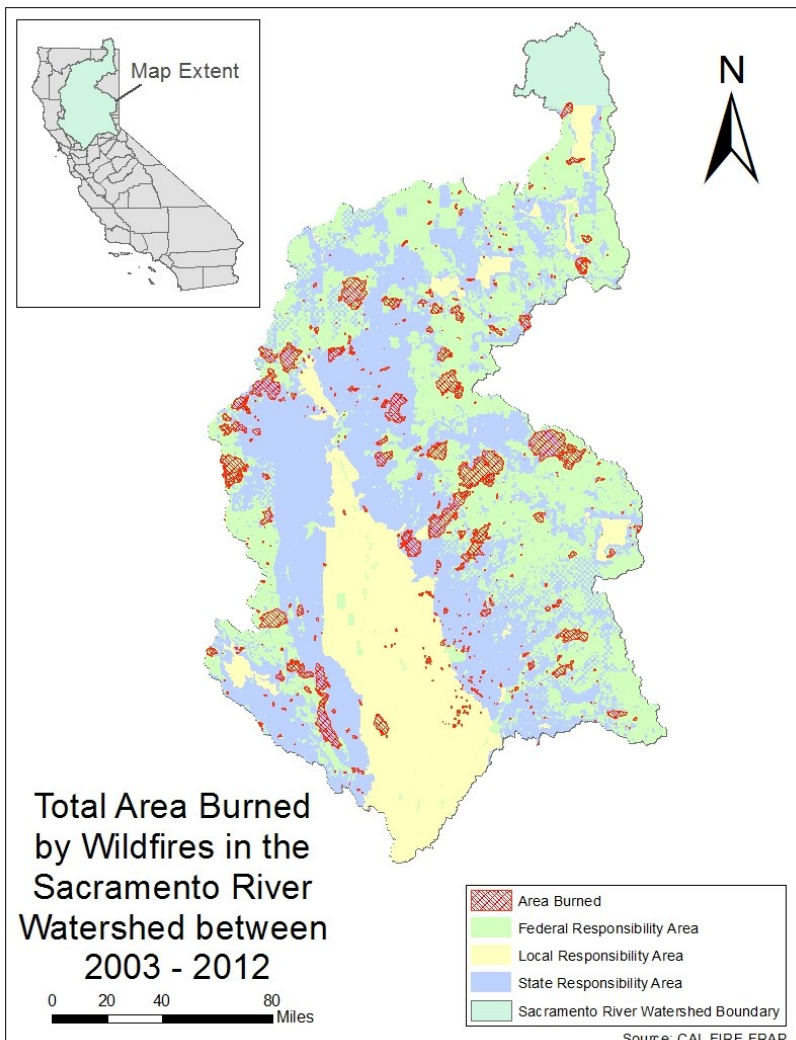
Forests: Fire and Fuels

The 2013 Rim Fire that burned more than 255,000 acres is now the largest fire in recorded Sierra Nevada history and serves as a harsh reminder that many of our watersheds are at high risk of severe wildfire and in need of vegetation management to reduce risk of catastrophic wildfire. Forest health and large fuel loads pose a large risk to the Sacramento watershed. Vegetation in the upper watersheds serves as fuel for fires. Watershed management efforts must address fuel loads in on forested lands.

The Viewpoints article by David Edelson, Patricia Megason and David Bischel titled *Rim fire shows we need to rethink how we manage forests* featured in the Sacramento Bee on September 15, 2013 suggests that “the Rim fire has shown that there are multifaceted impacts associated with rural wildfire” and states that “we must look at changes to policies and programs at the federal level.” Fire has been suppressed for years. While in the short term it makes sense, the long term effects are catastrophic. Suppression of fire has resulted in thick and overly dense vegetation, posing extreme fire risk, especially during dry years. The article states that “in 1986, 21 percent of the total acres burned statewide were rated high severity – basically, total vegetative destruction” and that “today that number is 33 percent.” The article also suggests that “this trend is likely to continue unless the density of vegetation is dramatically reduced.”

The authors remind us “that rural wildfire does not discriminate, and its impacts on our water, energy, environment and economy are felt by Californians throughout the state. It is time to take a serious look at current forest management policies, to accelerate efforts to reduce forest fuels, and to expand programs to improve forest health on federal lands” and suggests that “to protect our natural resources and infrastructure, we must change our strategy by pre-treating our forests before the fire start.”

Management Implications: What can we learn from the Rim Fire?



Rivers: Water Quality

The Sacramento River Watershed water bodies provide multiple beneficial uses, yet some of them are impaired by pollutants. Waterways were historically used as places to dispose of contaminants dating back at least to the gold rush era of the 1850s when miners dumped mercury-laden sediment and mercury into tributaries in their search for gold. The sediment clogged natural channels, sometimes making them too shallow for fish passage or navigation, and carried toxic heavy metals, with mercury being particularly problematic. After the gold rush, rivers and creeks became dumping grounds for human and animal waste, often untreated.

Cities and industries that dispose of wastes into the watershed must meet much stricter standards since enactment of the federal Clean Water Act in 1972, and California's Porter-Cologne Act in 1969. Both laws set pollutant-specific standards for discharges of contaminants into federal and state waters. In recent decades, treatment of municipal and industrial wastewater, and management of urban stormwater runoff, have improved greatly. Industries and municipalities now provide at least secondary treatment of wastewater and cities are implementing urban stormwater programs to reduce the impacts of urban runoff to adjacent waterways. In the past several years, agricultural runoff has come under state regulation. Agricultural groups like the Sacramento Valley Water Quality Coalition (SVWQC) have formed coalitions to work together to meet the new requirements.

2013 Surface Water Quality Annual Monitoring Report

By Bruce Houdesheldt, Sacramento Valley Water Quality Coalition/NCWA



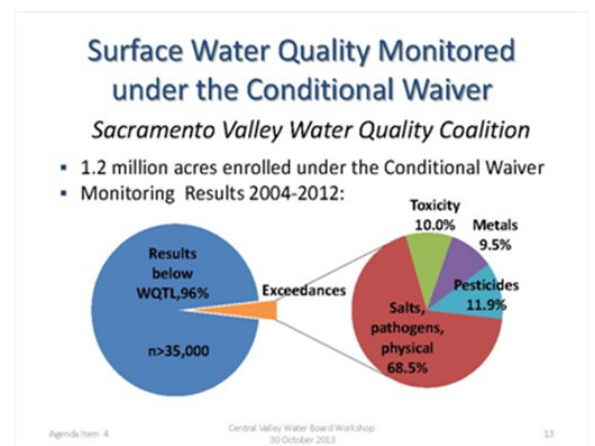
The Sacramento Valley Water Quality Coalition (SVWQC) helps landowners and operators with irrigated agricultural lands to comply with the State Water Board's Irrigated Lands Regulatory Program (ILRP). The 2013 Annual Monitoring Report (AMR) characterizes potential water quality impacts of agricultural drainage from a broad geographic area in the Sacramento Valley from October 2012 through September 2013. To date, a total of 91 SVWQC storm and irrigation season monitoring events have been completed, with additional events collected by coordinating programs and for follow-up evaluations. For the period of record in this AMR, samples were collected for 10 scheduled monthly events and two wet-weather ("storm") events.

The 2013 AMR once again underscores the actions of growers and ranchers to protect water quality. Pesticides were infrequently detected (~1.2% of 2013 pesticide results) and when detected, rarely exceeded applicable objectives in surface water monitoring. Three registered pesticides (chlorpyrifos, dimethoate, and malathion) exceeded applicable water quality objectives or "Trigger Limits" in a total of five SVWQC monitoring samples (including one field duplicate). In addition, two breakdown products of the legacy pesticide DDT [DDD(p,p) and DDE(p,p)] exceeded applicable water quality objectives in a total of six samples from two sites.

Many of the pesticides required to be monitored by the ILRP have rarely been detected in SVWQC water samples, including glyphosate, paraquat, and all of the pyrethroid pesticides. Glyphosate, one of the most widely used agricultural pesticides, has been detected in only seven samples to date and has never approached concentrations likely to cause toxicity to sensitive test species. Over 98.5% of all pesticide analyses performed to date for the SVWQC have been below detection. Similarly, the SVWQC has conducted more focused monitoring of the ILRP required trace elements (arsenic, cadmium, lead, molybdenum, nickel, selenium, and zinc), and has demonstrated that most of these metals rarely approach or exceed objectives and are not likely to cause adverse impacts to aquatic life or human health in waters receiving agricultural runoff in the SVWQC watershed.

The consistent yearly results are a direct outcome of SVWQC members use and implementation of management and cultural practices targeted specifically to improve water quality in the Sacramento Valley. To date the 13 subwatersheds of the SVWQC have secured nearly \$25 million in Natural Resource Conservation Service cost-sharing program funding, water quality funding from Proposition 50 and 84, plus 319(h) Clean Water grant funding to assist the 8,500 growers and ranchers enrolled in the SVWQC.

For more information on the SVWQC, visit: www.svwqc.org.

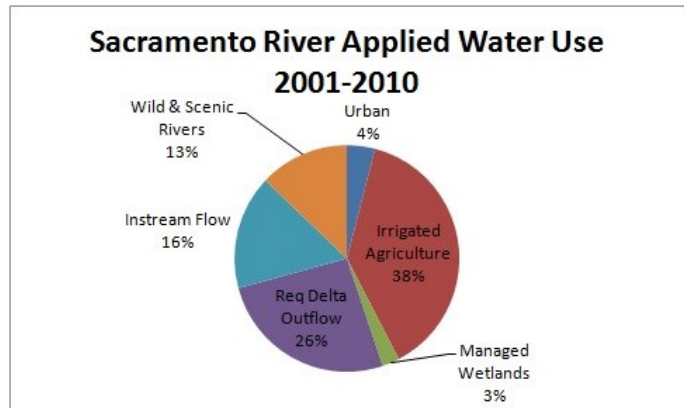
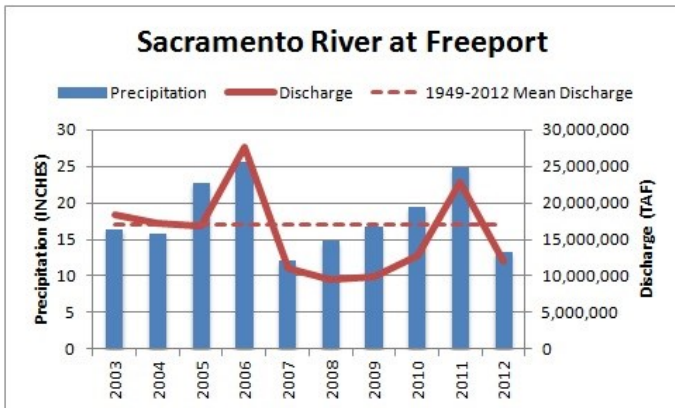
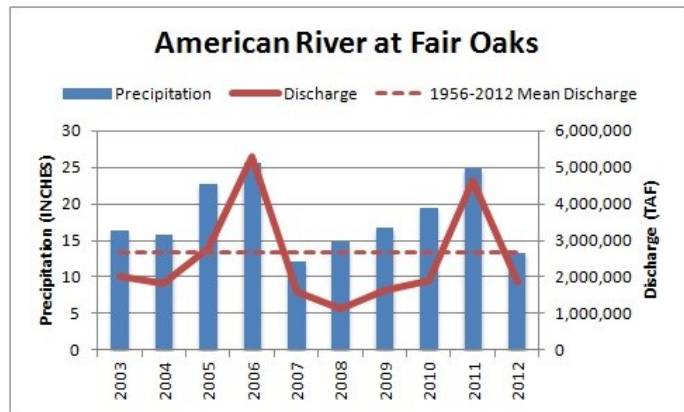
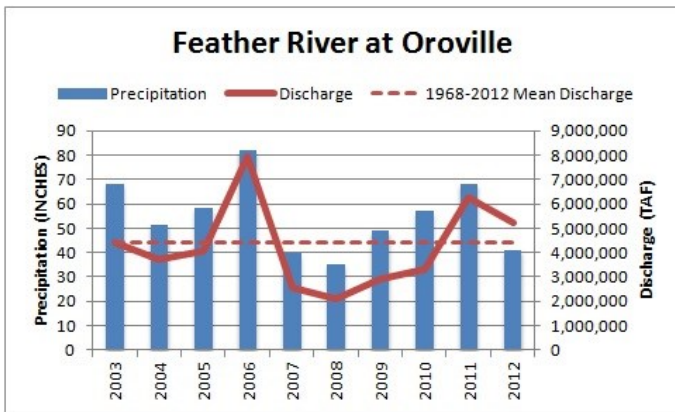
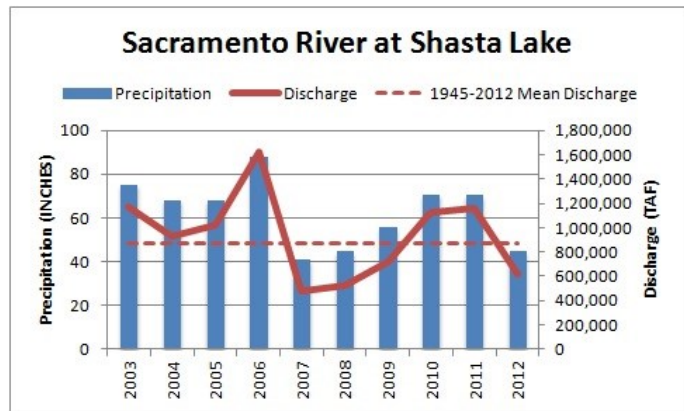
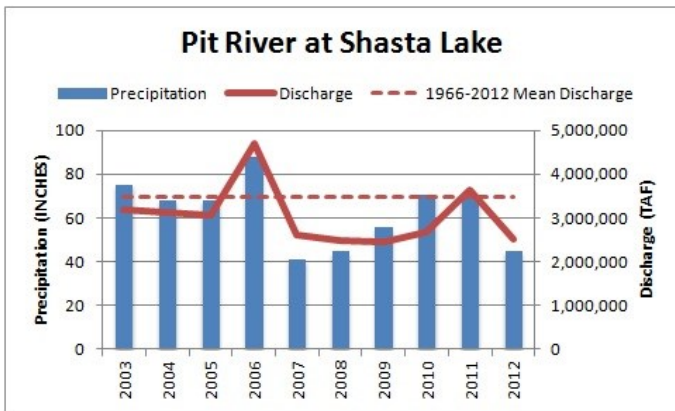


Rivers: Water Quantity

The Sacramento River is the principal water supply source for municipal, industrial, and agricultural users both within the basin and the state as a whole. The River also provides water for state and federal wildlife refuges and instream flow needs for fisheries, water quality protection, and Delta outflow requirements. Through a complex system of dams, storage reservoirs, and canals, most of the water needed for these uses



is provided via the federal Central Valley Project and the State Water Project. State and federal project facilities are fed by water from five separate river basins, the Upper Sacramento River above Lake Shasta, and the Pit, Feather, Yuba, and American Rivers. In addition, through the Trinity River Project, a significant volume of water is imported from the Trinity River to the Sacramento watershed just north of Redding.



Rivers: Chinook Salmon

The Sacramento River system is unique in that it supports four separate, distinct runs of Chinook salmon which are distinguished as follows:

Late-fall run: These salmon migrate to the upper Sacramento River and tributaries upstream of Red Bluff from early November through February and spawn from January through mid-April. Adults are generally larger in physical size than fall and winter run fish spawning in the same area.

Winter run: These salmon spawn almost entirely in the Sacramento River upstream of Red Bluff, arriving in early December with spawning occurring from April through August.

Spring run: Once widespread in throughout the Sacramento watershed, this run has been eliminated from upstream areas blocked by dam construction. Current migration (January through August) and spawning (August through October) occurs in hatcheries and eastside tributaries like Mill Creek, Deer Creek, and Butte Creek.

Fall run: These are the most numerous and widely distributed salmon in the watershed. They return from the ocean during June through November and spawn from October through December.

The Sacramento River watershed is home to a large population of Chinook salmon, a highly valuable resource for both recreational and commercial users. The river system is the principal producer of Chinook salmon caught in California's ocean fisheries and salmon population trends are an important indicator of overall watershed health. In recent years, public and private entities have made major investments in fishery improvement projects on the main stem of the Sacramento River and in major tributaries such as Clear Creek, Battle Creek and Butte Creek. Being anadromous, it is important to understand that salmon numbers in the Sacramento watershed are influenced not only by in-basin factors but also by events and conditions outside the basin, i.e. in the Delta, SF Bay, and the Pacific Ocean.

Population Trends

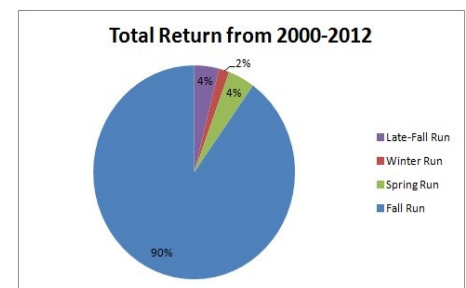
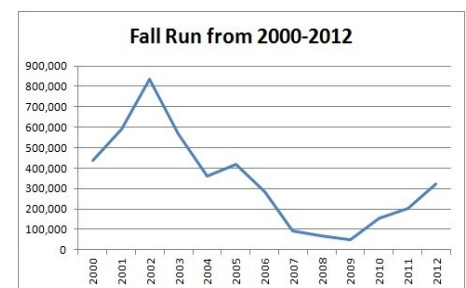
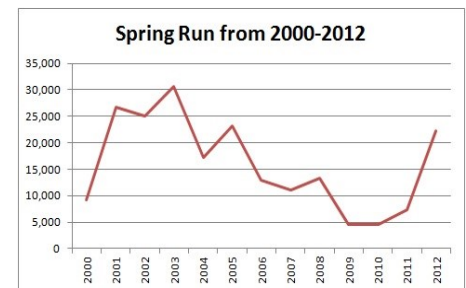
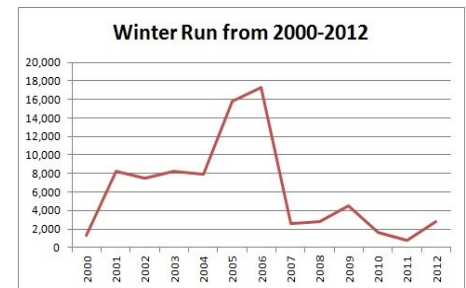
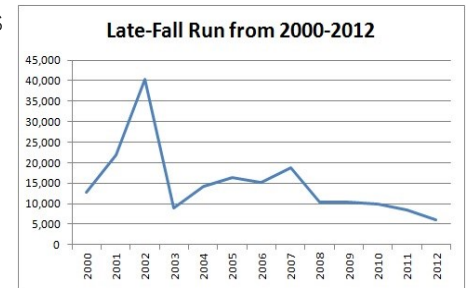
The CA Department of Fish and Wildlife (DFW), Anadromous Fisheries Branch compiles annual population estimates of Chinook salmon based on counts of fish entering hatcheries and migrating past dams, carcass surveys, live fish counts, and ground and aerial redd counts. The figures on the right display annual Chinook salmon populations of the four individual runs from the year 2000 to 2012.

Late-fall salmon numbers have remained relatively consistent through most of the past decade but currently are trending downward and have not shown the 2010-2012 rebound seen in fall run counts.

Winter run counts were strong through the 1970's (20,000 - 40,000 annually) but sharply declined since that time and in recent years have averaged around 2,000 fish. Winter run Chinook are currently state and federally listed as *Endangered*.

Spring run numbers were relatively low from 2009 through 2011 but rebounded in 2012 largely attributed to strong returns in Butte Creek. Spring run Chinook are currently state and federally listed as *Threatened*.

Since counts began in the 1950's, **fall run** numbers reached their highest levels through 2000 to 2006, averaging around 500,000 fish. After that, populations sharply declined and during 2008 and 2009, and both the commercial and sport salmon fishery was shut down. Fall run numbers have substantially increased over the past three years and this has allowed for a re-opening of the sport and commercial fishery.



Rivers: Monitoring

Monitoring in the Sacramento River Watershed

The Sacramento River Watershed provides most of the water to the Bay-Delta, so the watershed's water quality is vital to the Bay-Delta. Effective watershed management starts with assessing the state of our watershed as the basis for activities, programs and projects. If monitored and effectively managed, the watershed will adapt within the limits of its resilience. Effective governance and regulation must be supported by data and information.

SRWP conducted water quality monitoring on the Sacramento River mainstem and its major tributaries from 1998 to 2008. SRWP's monitoring program was one of the first ongoing monitoring programs for the Sacramento River Basin. Annual reports were developed for each monitoring year, and a [Monitoring Program Summary](#) was developed in Dec. 2006. This information helped establish a baseline for Sacramento River Basin water quality conditions until 2007 when monitoring funding ceased. Today, monitoring efforts are still being implemented in the watershed by project-specific monitoring programs:

- The [Sacramento Coordinated Monitoring Program \(CMP\)](#) is a joint effort of the Sacramento Regional County Sanitation District and the Sacramento Stormwater Management Program, and was implemented in 1991. CMP partnering agencies collect river water samples and test for a variety of water quality constituents and contaminants. The fundamental purpose of the CMP is to develop high-quality data to aid in the development and implementation of water quality policy and regulations in the Sacramento area.
- In 2003, the Central Valley RWQCB adopted the [Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands](#). These regulations provide for a watershed approach that includes a basin-wide monitoring program to assess impacts of irrigation water discharge. Since then, the Sacramento Valley Water Quality Coalition, with 13 individual subwatershed groups, has been conducting ambient monitoring throughout the basin at sites dominated largely by agricultural effluent.
- The [Sacramento Watershed Coordinated Monitoring Program \(SWCMP\)](#) is a coordinated monitoring effort between the Department of Water Resources (DWR) and Central Valley Regional Water Quality Control Board (CVRWQCB) Surface Water Ambient Monitoring Program (SWAMP) initiated in 2008. SWCMP monitors general water quality trends at many long-term stations and DWR is currently working on a summary report for the last six years worth of data they have collected under their contract with the CVRWQCB.

Sacramento River Watershed Regional Monitoring Program (RMP)

In 2008, SRWP launched an effort to investigate a long-term, sustainable RMP for the Sacramento River Watershed. Under contract to SRWP, Dr. Stephen McCord worked with stakeholders to investigate the feasibility of developing and implementing a sustainable RMP for the Sacramento River Watershed. The investigation culminated in 2009 with a stakeholder meeting, and production of an [Investigation Report](#) and a two-page [RMP Fact Sheet](#). In 2012 SRWP received funding from Regional San to build off the work performed in 2008-2009. McCord, with the support of the SRWP Executive Director Holly Jorgensen and SRWP's monitoring committee members, scheduled and conducted interviews through August 2013 and produced a [memo](#) that summarizes the results and synthesis of those interviews, recommends RMP functions, and suggests next steps in the pursuit of a functioning RMP.

The consensus for monitoring in the Sacramento River Watershed is that it should be continued, expanded, and integrated with other regional monitoring efforts. Regional monitoring is based on region-specific objectives, which should be conducted in a coordinated, compatible manner to effectively and efficiently address a broad range of issues and interests. Developing an RMP is one way to better understand watershed conditions and track changes over time to ensure watershed health. Several federal and state regulatory programs are encouraging RMPs, leading to improved communication, broad consistency, and a base of technical expertise.

While there are differences among some existing monitoring efforts in the watershed, there is also duplication. With scarce resources on local, state, and federal levels, now is the time to pool resources and share information. The RMP for the Sacramento River Watershed would improve available information to protect, manage and conserve its water resources. The future direction and success of this effort depends on regional support. SRWP invites feedback on the RMP and ideas for implementation. More information can be found on our website: sacriver.org/ourwork/monitoring-committee.

Rivers: Drought

The Sacramento River Watershed and the state as a whole are experiencing critical, perhaps unprecedented drought conditions. Calendar year 2013 went down as the driest on record and despite some relief in March, the trend has continued into early 2014.

On January 17th, the Governor officially declared a critical drought emergency for the state and ordered an immediate 20% reduction in water use.

Severe water restrictions will most certainly be imposed in the coming year. The California Department of Water Resources (DWR) has informed local water agencies that they will receive no water deliveries this year from the State Water Project. The State Water Resources Control Board has given notice to water right holders that they may be required to limit or stop diversions, potentially including riparian and pre-1914 water right holders. The drought will also have major impacts on the state's fish and wildlife populations. The following are some of the current water related conditions, as of April 15, 2014, for the Sacramento River watershed:

- Reservoir storage is at 52% of capacity and 68% of historic average (combined for the four major Sacramento watershed reservoirs)
- Snowpack is at 15% of the historic average (combined for the Northern Sierra)
- Precipitation is at 61% of the historic average (combined for the Northern Sierra)

Time will tell if the current drought conditions are the forerunner to a longer term, more persistent water crisis in California. In an article published on CaliforniaWaterBlog.com, scientists at the UC Davis Center for Watershed Sciences and at the Public Policy Institute of California (PPIC) forecasted a number of changes in California water policy and management that will be driven by long-term climate change and other social, economic, and environmental factors. The predicted changes include reduced diversions from the Delta and sources upstream, reduced per capita water use in urban areas along with increased wastewater reuse and increased stormwater capture, loss of some native aquatic species despite protective efforts, increased state and federal regulation on water management with groundwater use becoming more tightly managed and regulated, and funding for water system solutions becoming more local/regional.

Climate Trends in Northern California

By Kyle Merriam, U.S. Forest Service

Summary of *Observed* Climate Related Trends

- Earlier peak run-off
- Increased fire activity
- Shifts in species composition and distribution
- Denser forests with more small trees
- Increased mortality of large trees
- Increased insects and disease
- Wildlife species moving north/upslope and range contraction

Summary of *Predicted* Future Trends

- Increased temperatures
- Lower snowpack, earlier runoff, more extreme events
- Increased fire size and extent
- Increased drought stress
- Increased insects and disease
- Range contraction of wildlife species

Management *Options* to Reduce Non-climatic Stressors

- Decrease stand densities, particularly of small trees
- Reduce fuel loads
- Restore hydrologic systems, wetlands
- Restore stream bank vegetation
- Protect intact habitats and corridors, reduce fragmentation



Valley: Habitat

The Sacramento Valley floor consists largely of a mosaic of irrigated agriculture, wetlands, and riparian habitats. East and west of the valley, the foothills are primarily annual grasslands and oak woodland. The Sacramento River Basin was once rich with a multitude of avian and aquatic species. Modern-day development has reduced the populations of many species while some species have flourished under the changes in land and water use. Along the Sacramento River, the once-ample stretches of riparian and wetlands, supported by flooding and wide variations in flow, have mostly been replaced by agricultural lands and expanding urbanization.

Today, the Sacramento River Basin continues to support a diversity of fish and wildlife species, although the numbers are not as robust as they were historically. Located along the Pacific Flyway, the marshlands in the Sacramento Valley continue to be an important stop for migrating waterfowl. Both migratory and resident species rely on the complex of state and federal wildlife refuges that exist throughout the basin and on the vast acreage of irrigated agricultural land.



Sacramento National Wildlife Refuge Complex (NWR)

By Chris Barr, Sacramento National Wildlife Refuge

The Sacramento National Wildlife Refuge Complex (Complex) is administered by the U.S. Fish & Wildlife Service as part of the National Wildlife Refuge System. The Complex manages more than 65,000 acres in the Sacramento Valley. The units include Sacramento, Delevan, Colusa, Sutter, and Sacramento River National Wildlife Refuges and Butte Sink, North Central Valley (which includes the Llano Seco Unit) and Willow Creek-Lurline Wildlife Management Areas.

As seasons change, wildlife and habitats change at the Complex. In February, many waterfowl begin moving off the refuge before their migration back north. In March and April, shorebirds and songbirds begin to pass through. By mid-April vernal pools are filled with vibrant wildflowers and American bitterns are calling everywhere. By summer, birds numbers might be lower than during peak waterfowl migration, but there is always something interesting to be discovered. River otters, deer, resident bald eagles, coyotes, and more can be spotted during the cool morning and evenings of summer. Throughout the summer months the wetland units are actively managed to help grow waterfowl appropriate food plants and prepare habitat for the next winter migration of waterfowl that travel back down the Pacific flyway and into the northern Sacramento Valley.

In fall, winter, and early spring, those bird populations use flooded lands such as the National Wildlife Refuges, State Wildlife Management Areas, as well as wetlands on private lands and flooded rice fields. The establishment and maintenance of these varied habitat lands have had a positive effect on birds using the Pacific Flyway. The California Mid-winter Waterfowl Survey (an index) in the last five years document around 3.5 million ducks, with an average of 2.2 million of those in the Sacramento Valley. In addition the most recent fall goose surveys also indicated around 2.2 million geese for the state, with most of those occurring in the Sacramento Valley. There are also about 70,000-100,000 swans that winter in California, most in the Sacramento Valley and Delta.

Flooded habitats used by those birds and many other wetland species (shorebirds, egrets, turtles, etc.) can be significantly reduced during extended drought years. The result is less available habitat to support those population numbers on public lands (i.e. federal refuges, state wildlife areas), private wetlands, and the amount of rice grown. In a dry year like 2014, birds will be concentrated on what limited flooded habitat is available, and food resources for wintering waterfowl can become limited, the potential for disease outbreaks and overall bird losses can be higher, and increase in crop depredation by waterfowl on private lands can also occur in the fall and spring.



Learn more about the Complex at www.fws.gov/sacramentovalleyrefuges.

Valley: Habitat



The Nature Conservancy's (TNC) mission is to "conserve the lands and waters on which all life depends." Collaborations between TNC and numerous public and private partners including River Partners, the US Fish and Wildlife Service, and the California Rice Commission have resulted in resourceful conservation approaches in the Sacramento River region.

TNC and its partners have:

- Planted well over a million seedlings, using a broad mix of native plants.
- Created the Sacramento River National Wildlife Refuge - an important stopover for migratory birds on the Pacific Flyway.
- Protected a corridor of 24,000 acres of land, with a 2015 goal of 30,000 acres.
- Created education and incentive programs that encourage farmers to use land in more environmentally beneficial ways.
- Restored 6,000 acres of riparian habitat.
- Increased the amount of land available for public use.
- Worked with California Rice Commission to develop the BirdReturns program that incentivizes waterbird conservation practices.

TNC's acquisition and restoration work between Red Bluff and Colusa includes:

- Over 29,000 acres in conservation ownership in fee title and conservation easements. These are held by TNC, River Partners, USFWS, CA DFW, DWR, State Parks, Northern CA Regional Land Trust, and county governments.
- Over 6,000 acres of riparian habitat have been restored by TNC, State Parks, and River Partners.

TNC's Lassen Foothills Project has:

- Protected 100,195 acres of rangelands/oak woodlands with conservation easements including some riparian habitats along key Sac River tributaries (Battle Creek, Antelope Creek, Mill Creek and Deer Creek).
- Protected 5,872 acres in fee ownership (4,600 acres Vina Plains preserved and 1,272-acre Childs Meadow property).
- Provided on-site conservation management of the 37,540-acre Dye Creek Preserve on behalf of the State of California.
- Restored approximately 80 acres of riparian habitat on Dye, Mill and Deer Creeks.
- Acquired two Mill Creek surface water rights used for salmon migration flows.
- Conserved approximately 33 miles (65%) of Deer Creek's 51 miles (TNC & USFS) on both sides of the creek and approximately 9 miles (18%) on one side of the creek.
- Conserved approximately 32 miles (66%) of Mill Creek's 48 miles (TNC, USFS and NPS) on both sides of the creek and approximately 4 miles (8%) on one side of the creek.
- Conserved 8 miles on both sides of Battle Creek and an additional 3.5 miles on one side of the creek.



TNC's Sacramento River Project



TNC's Regional Ecologist, Greg Golet, is the lead author on a 2013 manuscript titled [2013 Successes, Failures and Suggested Future Direction for Ecosystem Restoration of the Middle Sacramento River, California](#) that describes the most relevant work TNC's Sacramento River Project Team has to share. The paper describes what restoration and protection work has been done, and the resulting changes in habitat conditions, threat abatement, and wildlife response. This information was synthesized and used to evaluate progress toward ecosystem restoration goals that were developed in the early 2000s by state and federal resource management agencies.

For more information, visit: www.nature.org.

Valley: Agriculture

Agricultural lands in the Sacramento Valley include approximately 60 commercial crops grown on approximately 2 million acres of irrigated farmland.

Rice is the number one crop in the Sacramento Valley Region, accounting for 26% of the total agricultural acres.

The next most prominent group is field crops (19%) followed by orchards (15%), pasture (11%), and grains (10%).

In general, the lowlands of the valley primarily are planted in rice, rotated into winter cereal grains, or are permanent wetlands.



California Rice Programs

By Paul Buttner, California Rice Commission (CRC)



There's quite a bit of current activity in the conservation area as CRC continues building its "wildlife resume" and delivering programs to Sacramento Valley growers that help fund wildlife conservation projects. Our work in-

cludes exploring public sector opportunities, primarily focusing on Farm Bill programs, as well as examining market-based ecosystem services opportunities to private entities interested in purchasing wildlife benefits.

Waterbird Habitat Enhancement Program (WHEP)

WHEP is a fairly new program that is uniquely well-suited for rice growers. WHEP was offered in eight rice-producing counties in the Sacramento Valley in 2013. The Natural Resources Conservation Service (NRCS) received about 65 more applications in that year and funded about 50 of them for a total obligation of \$1.3 million over three years. This brings the total number of active WHEP contracts to approximately 250. These contracts represent over 110,000 acres enrolled and are supported by over \$10 million in WHEP funding. WHEP primarily focuses on specific practices that fit well with rice cultivation and are beneficial to a variety of bird species and other wildlife, including:

- Promoting wildlife-friendly straw management practices and returning boards back into the rice boxes after harvest to hold more rainwater.
- Enhancements of nesting habitat by creating nesting islands.
- Enhancing duration and types of fall and early spring habitat created when intentionally flooding fields in the winter season.
- Installing nesting and roost structures for certain non-waterbird species such as hawks, eagles and owls.
- A suite of other traditional conservation practices offered by NRCS.

New Conservation Program Opportunity with The Nature Conservancy (TNC)

Currently called the BirdReturns, we recently worked with TNC to develop this new opportunity using private donor funds to incentivize growers to employ certain waterbird conservation practices. In this first pilot year, the BirdReturns program identified three conservation practice options for rice farmers to manage water to benefit a variety of shorebirds. The pilot focuses on the creation of spring habitat (February through March) on acres not currently enrolled in WHEP. TNC entered into conservation contracts with interested growers in a competitive bidding manner. This bidding and selection process took place in November 2013. TNC selected the most competitive bids, comparing participants in similar localities (by basin) and of equal habitat value. We appreciate the willingness of TNC and its private donors to invest conservation funding in ricelands to further enhance the value of rice fields as wildlife habitat.

Learn more about CRC at www.calrice.org.

Conservation: Programs

IRWM planning began in 2002 as the result of the passage of Proposition 50. The California Department of Water Resources (DWR) describes Integrated Regional Water Management (IRWM) as a collaborative effort to manage all aspects of water resources in a region. The plan or IRWMP is the comprehensive planning document to encourage regional management strategies. The success of IRWM lies in its potential to cross jurisdictional, watershed, and political boundaries and involve numerous and diverse stakeholders to negotiate mutually beneficial solutions.

DWR provides a variety of IRWM related resources to assist IRWM efforts including financial, technical, and facilitation assistance. IRWM grant programs include: planning, implementation, and stormwater flood management. Currently, DWR is developing a Strategic Plan aimed at describing DWR's future role and guiding its actions for improving its support of IRWM.

IRWM regions exist in 87% of the state's geographic area and include 99% of the state's population. The Sacramento River Watershed consists of eight IRWM regions as shown on the map sacriver.org/files/documents/2014/IRWM_Regions.pdf and are briefly described in the following summaries.

For more information on IRWM visit: www.water.ca.gov/irwm

American River Basin Integrated Regional Water Management Plan (ARB IRWMP)

The Regional Water Authority (RWA) Board, acting as the designated Regional Water Management Group, adopted the ARB IRWMP Update on July 11, 2013. To help realize the vision, the ARB stakeholders developed a series of regional goals:

- Provide reliable and sustainable water resources sufficient to meet the existing and future needs of the region.
- Protect and enhance the quality of surface water and groundwater.
- Protect and enhance the environmental resources of the watersheds within the region.
- Protect the people, property, and environmental resources of the region from damaging flooding.
- Promote community stewardship of our region's water resources.

More than 170 individuals have used the community site (irwm.rmcwater.com/rwa/), and there have been 182 ARB IRWMP projects entered to date through the site. Since RWA adopted the ARB IRWMP, six additional stakeholder groups have also adopted the plan. Many more are expected to adopt the IRWMP in 2014. Also during 2014, RWA intends to submit the ARB IRWMP to DWR for review to determine if the plan is in compliance with DWR IRWMP criteria. The final ARB IRWMP and much more information is available online at irwm.rmcwater.com/rwa/. Contact Rob Swartz at rswartz@rwah2o.org or 916-967-7692 for more information.

Cosumnes American Bear Yuba Integrated Regional Water Management Plan

The Cosumnes American Bear Yuba (CABY) region is in the final stages of updating the 2007 IRWMP, with DWR currently reviewing the updated plan for guideline compliance and plan adoption scheduled for April/May of 2014. The plan, originally adopted by 25 entities, now has the support of 45 groups across the region. The CABY membership determined early in the update process that the quantification of measurable outcomes for plan objectives should be an important focus of the work effort. The Plan contains 44 individual objectives with specific measurement metrics, gathered under these goal areas:

- Water Supply
- Water Quality
- Environment and Habitat
- Climate Change
- Human-landscape Interaction

The CABY Plan also included an extensive project integration process. The 6-month integration process involved consideration of over 150 projects and the participation of 30 stakeholder groups and resulted in a variety of fully integrated projects. The 30 ready-to-proceed projects that emerged from this process include components of nearly 50 of the projects that had originally been individually submitted. 6 of these fully integrated projects (which include 18 sponsors and what had been 23 individual projects) were recently funded in the Round 2 Implementation Grant funding cycle.

Please contact admin@cabyregion.org for more information.

Conservation: Programs

Northern Sacramento Valley Integrated Regional Water Management Plan

The six counties of the Northern Sacramento Valley (NSV) have been working together for over 10 years to lay the foundation for an integrated regional plan to address water-related issues. The NSV IRWMP project database includes both ranked projects and projects-to-be tracked. On June 3, 2013 the Board approved the inclusion of 113 ranked projects into the IRWMP with an additional 11 projects approved to be included in the IRWMP as "Projects-to-Track."

At a special meeting of the NVP Board on April 14, 2014, they voted unanimously to approve and support the revised NSV IRWMP and directed staff to move it forward for compliance review by DWR.

The following goals developed for the NSV IRWMP serve as the foundational elements from which the IRWMP will be shaped:

- Water Supply Reliability
- Flood Protection and Planning
- Water Quality Protection and Enhancement
- Watershed Protection and Management
- IRWM Sustainability
- Public Education and Information Dissemination

More information about NSV IRWMP is here www.nswwaterplan.org or contact Vickie Newlin: vnewlin@buttecounty.net.

Upper Feather River Integrated Regional Water Management Plan

**SRWP did not receive an update on the Upper Feather River IRWMP.*

Upper Pit River Watershed Integrated Regional Water Management Plan

Most of the Upper Pit River watershed (UPRW) is characterized by communities considered by DWR criteria to be either economically disadvantaged or severely disadvantaged, including Upper Pit Tribal communities. Population for the entire 1.5 million acre watershed is about 14,000, making it one of the most lightly populated regions in the state. Therefore, resources are limited and participation in ongoing process-intensive activities is problematic. Nonetheless, the UPRW-IRWMP enjoyed consistent and strong involvement in the Regional Water Management Group (RWMG) by area stakeholders, despite long travel distances and severe winter-time weather. As a region, this strongly agricultural area has experienced long-term levels of participation in watershed-based activities over the last 10 years and the Watershed Assessments that these efforts produced were founding documents for the UPRW-IRWMP.

Project development focused on meeting the critical water supply needs of Disadvantaged Communities (DAC), as well as addressing agricultural water efficiencies and projects aimed at reducing fuel loading/fire risk and restoration of critical habitats. The US Forest Service and Bureau of Land Management also participated consistently in the process, ensuring that all the primary water and resource managers were represented.

Please visit the www.upperpit.org for a full description of the IRWMP development process, the outcomes of meetings and project development activities, and other focused information.

Upper Sacramento, McCloud and Lower Pit River (USR) Integrated Regional Water Management Plan

The USR IRWM region worked diligently to draft an IRWM plan in 2013 and to finalize the Memorandum of Understanding (MOU) that formed the Regional Water Management Group (RWMG). 15 groups joined the RWMG in late 2013. The USR plan was adopted by the RWMG on November 25, 2013. Since then, four RWMG member groups have adopted the plan.

The River Exchange, being the grantee for the IRWM planning process, will close out the planning grant in 2014, and will remain the point of contact for the California Department of Water Resources (DWR) Plan Review Process, which has already been initiated. The RWMG plans to meet regularly in 2014, in order to further develop project proposals and funding solicitations, and to prepare for DWR's Round 3 Implementation funding cycle.

The USR region has established the website www.uppersacirwm.org where general information, reference library, meeting calendar, and final IRWMP can be found. Questions or comments about the USR region's IRWM efforts can be directed to The River Exchange at (530) 235-2012 or mail@riverexchange.org

Conservation: Programs

Westside Integrated Regional Water Management Plan

The Westside Region includes the two principal watersheds of Putah and Cache Creeks and other areas of land in the northern portion of Yolo and Solano Counties. The Westside Regional Water Management Group (RWMG) was formed to represent the Region Regional Water through a Memorandum of Understanding (MOU). The Westside Integrated Regional Water Management Plan (Westside IRWMP) was adopted by all the MOU agencies in July 2013. The RWMG appointed a Regional Coordinating Committee to guide development of and support implementation of the Plan and consists of one staff representative and an alternate appointed from each of the agencies and association that make up the RWMG.

The Westside IRWMP's vision is to address the major challenges and opportunities related to managing water and associated natural resources within the region, such as the following:

- Continue to provide safe and reliable water supplies for a variety of uses.
- Improve habitat and ecosystem health (including the monumental challenge of addressing effects caused by numerous invasive species).
- Manage a wide array of risks including public health, fire, flood, and potential disruptions to institutional services.
- Sustain and modernize water supply, water quality, and flood management infrastructure.
- Address many significant and long-standing water quality concerns.
- Foster the reasonable use of water and associated natural resources within the Region through the adoption of evolving technologies and best management practices.
- Further the collective understanding of watershed functions and groundwater basins.
- Improve education and awareness among citizens about the importance of sustainable water and natural resources management, and the crucial roles citizens play.
- Improve opportunities for water-based recreation.

The final Westside IRWMP and additional information is at www.westsideirwm.com. For more information, contact info@westsideirwm.com or (530) 661-8115.

Yuba County (YC) Integrated Regional Water Management Plan

The Regional Water Management Group (RWMG) of the Yuba County Integrated Regional Water Management Plan (YCIRWMP) is currently working to update the 2008 IRWMP. Since initial adoption of the IRWMP/Plan, the RWMG has expanded to include a variety of new entities, primarily non-profit organizations and additional disadvantaged communities. The group has engaged in a complete revision to the original Plan and has identified the following goals to focus both project development and Plan performance evaluation:

- Ensure adequate and reliable water supply that meets the diverse needs of the region
- Protect, restore and enhance water quality for water users and in support of healthy watersheds
- Preserve and restore watershed health and promote environmental stewardship
- Enhance regional economic development by supporting recreational opportunities and sustainable agriculture
- Protect public safety through emergency and drought preparedness and integrated flood management
- Address climate vulnerabilities and reduce greenhouse gas emissions
- Promote equitable distribution of resources to disadvantaged communities and tribes across the region

As the region is largely comprised of disadvantaged communities (several in remote locations) and has large populations of Latinos and H'mong, the RWMG determined in the early stages of Plan update (June 2013), to use a 'circuit-riding' strategy to accomplish outreach, engagement and cross-constituency collaboration. As a large group, the RWMG met roughly quarterly to engage in discussions, review and debate issues and chapter content, and advance document preparation through collaborative decision-making. As currently planned, the IRWMP update will be completed by mid-summer 2014 to enable submission of the revised document to DWR for compliance review by mid-August at the latest. The RWMG website is www.yubairwmp.org includes a timeline for completion of the update effort, chapters that are currently available for review, meeting notes from RWMG and circuit riding meetings, and other relevant information. For anyone seeking additional information please contact, admin@yubairwmp.org.

Conservation: Programs

Irrigated Lands Regulatory Program (ILRP)

In 2003 the Central Valley Regional Water Quality Control Board (CVRWQCB) adopted an order requiring waste discharge permits for all discharges (e.g., pesticides, sediment) from irrigated agriculture. This program, which also includes nurseries and managed wetlands, is called the Irrigated Lands Regulatory Program (ILRP). These regulations provide for a watershed approach that includes a basin-wide monitoring program to assess impacts of irrigation water discharge. As an alternative to issuing individual permits to several thousand owners/operators in the Region, growers were given the option to become members of a coalition which received a general order providing program compliance for all coalition members.

Sacramento Valley Water Quality Coalition (SVWQC)

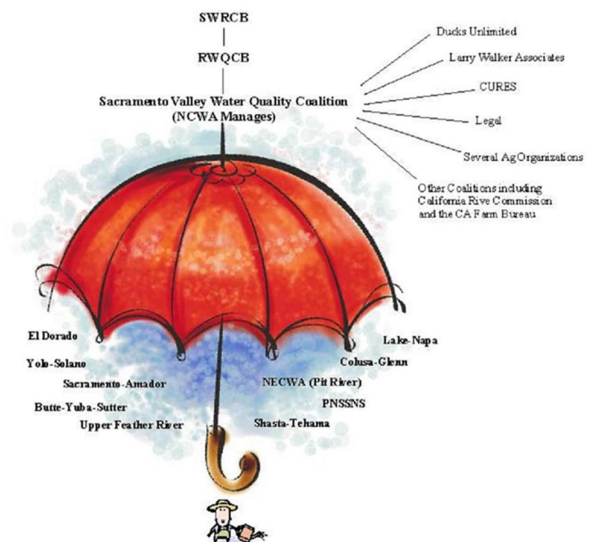
The [Sacramento Valley Water Quality Coalition](#) (SVWQC) was established under the lead of the Northern California Water Association (NCWA). The connection between the economic sustainability of Sacramento agriculture and water quality is ingrained in the legacy of family farmers who settled the Sacramento Valley generations ago. So in 2003 it was a logical extension of the NCWA mission to partner with over 200 agricultural representatives, natural resource professionals, wetlands managers and local governments throughout the region to improve water quality for Northern California farms, cities and the environment. The mission of the SVWQC is to enhance and improve water quality in the Sacramento River, while sustaining the economic viability of agriculture, functional values of managed wetlands, and sources of safe drinking water.

The SVWQC has been conducting ambient monitoring throughout the basin at sites dominated largely by agricultural effluent. Coalitions are required to submit to the CVRWQCB an annual report summarizing the monitoring program findings. If monitoring shows two exceedances of state water quality objectives (pesticides, dissolved oxygen, pH, etc.) within a three year period of time, coalitions are required to prepare a Management Plan which documents management practices used by growers in that drainage area and options to address the water quality issue. Within this basin-wide coalition there are 13 sub-coalitions that conduct outreach to growers and document agricultural practices at the regional and local level.

Sacramento River Watershed ILRP

Following nearly 4 years of meetings and discussions with agricultural leaders, environmental organizations, and other stakeholders, the CVRWQCB adopted an Environmental Impact Report for the Long Term ILRP. The SVWQC began discussions with CVRWQCB staff about the Sacramento Valley Waste Discharge Requirements (WDR) in 2012. In December of 2013 the CVRWQCB released its revised ILRP order for the Sacramento River watershed. The CVRWQCB adopted General Order R5-2014-0030 covering surface and groundwater quality on March 12, 2014. The new draft order includes most of the requirements currently part of the ILRP such as coalition membership and fees, water quality monitoring, and management plans for areas and constituents identified as problems. The draft order for the Sacramento watershed also includes some new program provisions which include the following:

- The ILRP will now apply to discharges to both surface and groundwater
- Submittal of an individual Farm Evaluation Plan by all coalition members
- Submittal of an individual Sediment and Erosion Control Plan in areas identified as erosion sensitive
- Submittal of an individual Nitrate Management Plan in areas identified as having potential groundwater nitrate problems in high vulnerability areas.
- Reduced Monitoring/Management Practices Verification Option for subwatersheds that are deemed to have lower potential impacts to surface waters from irrigated agriculture discharges.



Conservation: Programs

SRWP Partnership Initiative

In 2014, as one of the approaches developed during our strategic planning sessions, SRWP will embark on a renewed effort to expand on and develop new partnerships titled the *Partnership Initiative*. The key purpose of the Partnership Initiative will be to discuss and identify key concerns within the watershed along with potential management actions. We are currently developing a list of key stakeholders to meet with and a list of talking points and will begin scheduling meetings in the spring of 2014. We'll concurrently meet with potential investors and develop a list of priority actions based on their feasibility. Similar to the *Sierra Fund's Integrated Sierra Investment Strategy*, we'll explore how public and private conservation investments can be organized to best protect and restore the natural resources of the Sacramento River watershed.



Numerous groups and agencies are working to protect and improve their portion of the Sacramento River Watershed. SRWP recognizes that partnerships can be very effective in advancing and improving policies and programs. We strive to support and enhance the efforts of local watershed partners through a more unified organization and voice. We work to ensure that local management programs have a "seat at the table" and are represented in important regional and statewide policies and programs. SRWP worked with local groups and agencies throughout the year to share information and opportunities for collaborating to leverage resources and minimize duplicate efforts.

California Urban Streams Partnership

By Ariana Rickard, CUSP Program Manager



The California Urban Streams Partnership (CUSP) is an organization of local, regional and statewide groups working to protect, restore, and steward urban streams and watersheds in California. CUSP was formed in 2012 by the founders, former staff members, and past board members of the Urban Creeks Council to revitalize the urban streams movement in California. CUSP is a project of the Earth Island Institute and administered through a Statewide CUSP Steering Committee, a San Francisco Bay Area CUSP Steering Committee, the Sacramento Urban Creeks Council, and the Santa Barbara Urban Creeks Council.

CUSP advocates for the improvement of wildlife habitat, the return of functioning ecosystems, and the betterment of urban environments and quality of life. CUSP regularly tracks how funding is dispersed through the state budget and water bond bills and provides updates on what programs will be funded and is currently working with Vern Goehring of Natural Solutions for Advocacy to lobby in Sacramento for funding and policy changes related to urban watersheds.

We have met with key legislative staff, provided written and oral testimony at a Joint Senate Water Bond Hearing in September 2013 and signed AB 32 coalition letters regarding cap and trade funds. We have also authored a white paper on funding urban watershed projects in California, which we sent to eight key Assembly members and six key State Senators along with a comment letter on two proposed water bonds (AB 1331 and SB 848). Our outreach will expand to other legislators as appropriate. Lastly, CUSP distributed an Action Alert regarding the water bonds and cap and trade funds to Bay Area Watershed Network (BAWN) and Bay Area Flood Protection Agencies Association (BAFPAA) members.

Another mission of CUSP is to train community members on how to effectively lobby in Sacramento. In December 2013, Vern Goehring trained stakeholders on how to research relevant legislation, determine appropriate contacts, engage legislators and staff members, and how the budget process works.



Please visit our website for more information: www.earthisland.org/cusp/.

Conservation: Partners

Feather River Coordinated Resource Management (FRCRM) Program

By Dennis Heiman, SRWP Trustee and FRCRM Representative



Established in 1985, the FRCRM, is a partnership organization within the 3,000 sq. mi. upper Feather River watershed that includes 24 local, state, federal and private entities with a goal to “maintain, protect, and improve, where possible, water quality and quantity in the Feather River.” Excessive erosion and sedimentation, resulting from 140 years of logging, mining, grazing, road/railroad construction, and wildfires, was causing problems for water quality, aquatic habitat, and downstream hydroelectric operations. The FRCRM program focuses on plans and projects designed to restore the natural function of stream channels and meadows in the upper Feather watershed.

Projects

Over the past 27 years, FRCRM has implemented a total of 118 projects, including 68 on-the-ground restoration projects, 13 studies/strategies, 19 planning/coordination projects, and 18 education projects. This has resulted in approximately 47 miles of treated stream channels, directly restoring approximately 4,100 acres of meadow/floodplain and riparian habitat. Plumas Corporation, a non-profit NGO, has provided staff support to the FRCRM for the purpose of program administration, developing project plans and design, construction supervision, and follow-up monitoring. Funding has been via grants from a variety of public and private sources. In addition to the work within the upper Feather River, FRCRM program staff have provided technical assistance on problems and projects in other northern California watersheds.

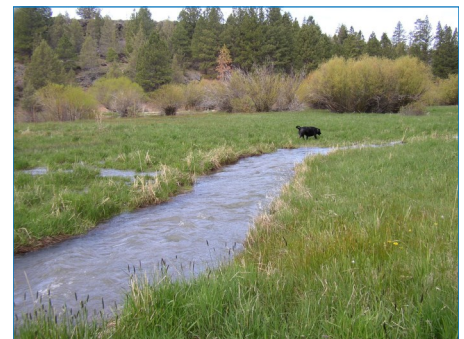
Monitoring

A watershed-wide monitoring program to examine effects of restoration efforts at varying watershed scales was started by the FRCRM in 1999. Thirteen years of data have been collected from ten continuous temperature and streamflow recording stations on both private and public lands. The program also monitors 22 stream condition inventory sites collecting data on channel morphology, substrate conditions, fish and macroinvertebrate populations. In response to questions and concerns about stream flow impacts from meadow restoration projects, a team of scientists in 2012 undertook an assessment of the FRCRM monitoring program data and also data from other stream/meadow restoration projects outside the watershed. Their report [Effects of Meadow Restoration on Stream Flow in the Feather River Watershed](#) can be found on the FRCRM website.

Education

The CRM Watershed Education Program focuses on two components: public outreach and school-based education. The K-12 education program includes field trips, hands-on projects, and an annual 'Plumas to the Pacific' field trip where students follow the path of water flow as it travels from the Feather River headwaters to the Pacific Ocean. On the public outreach front, FRCRM annually organizes the Great Sierra River Cleanup, works with Feather River College on World Water Monitoring Day, and hosts the annual Wild & Scenic Environmental Film Festival.

More information on the Feather River CRM program can be found on www.feather-river-crm.org.



SRWP: 2013 Year in Review

Education and Outreach

- As a member of the [CA Watershed Coalition](#), we continued to participate in meetings and joint efforts to improve watershed conditions including relaying the importance of funding for watershed management by **writing letters to senate and assembly members**, distributing the **Watershed Jobs** handout and participating in and helping to coordinate and promote [Watershed Day at the Capitol](#).
- Coordinated and facilitated [Delta Tributaries Mercury Council](#) Quarterly Meetings to work on strategies to reduce the level of mercury and methyl-mercury in the Sacramento River Basin.
- Created SRWP's **Waterways** e-newsletter that also showcases a local watershed partner, project, and/or event.
- Participated in regional **Integrated Regional Water Management** efforts to improve cooperation and coordination.
- Researched funding to reprint and distribute the [Journey through the Sacramento River Watershed](#) newspaper insert.
- Served as regional coordinator for the International [River of Words](#) contest, and promoted the event in the watershed.
- Hosted the **State of the Sacramento River Watershed Forum** which featured some of the region's most recognized professionals and their takes on hottest topics affecting the Sacramento River Watershed
- Planned the Annual Stakeholders Meeting to share SRWP's 2013 accomplishments and plans for 2014 and beyond, showcase other watershed management activities and present the Watershed Excellence Awards.



Watershed Monitoring

- Worked on developing a Regional Monitoring Program for the Sacramento River Watershed. More information can be found on page 9 of this report and on our website.
- Held Monitoring Committee and Nonpoint Source Workgroup meetings and shared information through the listserv and website.
- Completed the **Lower Sac River Water Quality Report Card**. More information can be found on page 9 and on our website along with the **Feather River Report Card** that was completed in 2010.
- Worked on developing a Watershed Mercury Improvement Program for the state's mercury-impaired reservoirs.

Local Watershed Support

- Participated in a variety of regional and state meetings to serve as a voice for local groups and ensure the inclusion of local watershed management activities in regional and statewide plans.
- Conducted **Watershed Management Technical Assistance Workshops** to improve participant's skills in community-based, locally-led watershed management that included hands-on activities and presentations that addressed: Strategic planning and adaptive management, watershed science and restoration techniques and monitoring program design and implementation.
- Worked with Resource Conservation District's (RCDs) to coordinate and facilitate **Watershed Management Roundtable Meetings** to present current information on issues, efforts and activities affecting watershed managers in the Sac R basin and provide an opportunity to ask questions and share information.
- Continued to maintain and update the [SRWP website](#) that includes upcoming events, the online permitting guide, SWIM and A Roadmap to Watershed Management.
- Worked on the conceptual design and development of the **Watershed Function Trend Monitoring Platform** to inform watershed management decisions.
- Continued to maintain and update the [SRWP website](#) that includes upcoming events, the online permitting guide, SWIM and A Roadmap to Watershed Management.



Sacramento River Watershed Program

Planning for the Future

In 2013, the our Executive Director (ED) and Board of Trustees prioritized the most pressing issues facing the watershed and how SRWP could address them. It was agreed that we should spend the time and energy to develop a long-term strategy that identifies and secures funding for watershed management in the Sacramento River watershed for our organization and our partners. After considering the length of time it will take to develop and implement this long-term strategy, the boards decided to focus on short-term goals, including coordinating events and establishing relationships and using our existing funding and partnerships as the seed for long-term goals. Below is the outline for our **12-Month Strategic Plan**.

1. Continue to serve watershed stakeholders through our three core programs

Watershed Health Monitoring

SRWP will continue to communicate and coordinate monitoring efforts via the Monitoring Committee, Delta Tributaries Mercury Council (DTMC), and the Non-point Source (NPS) Workgroup and develop a Regional Monitoring Program (RMP) for the Sacramento River Watershed.

Local Watershed Support

SRWP will continue to provide workshops and technical training to build local capacity via technical assistance workshops and online resources. We are working on an exciting website redesign/restructuring that will include additional information and materials to Roadmap, an interactive Google Watershed Partners map, and a Twitter to Watershed News along w/a FB feed. The redesigned website will organize content based on watershed regions and groups, rather than SRWP projects to improve navigation and access. It is under this core program that we are developing the Partnership Initiative. More information on the Partnership Initiative can be found on page 21.

Public Outreach and Education

SRWP will continue to educate decision makers via forums, meetings, workshops, and events including Annual Stakeholder Meetings, the Sacramento River Watershed Forum, Round Table Meetings and a Watershed Investment Summit. SRWP will continue to produce publications including the *Waterways e-newsletter* that will come out in the spring, comprehensive memos, and the *Annual Summary and Report*.

2. Develop Short-Term Funding

The ED and SRWP Development Committee will work with the Board to identify and secure short-term funding while developing a long-term funding plan for the organization. NOTE: The majority of SRWP's funding will end this year or early next year and while some long-term funding for the organization has been identified, nothing has been secured.

3. Build and Strengthen SRWP Board of Trustees

SRWP will work to ensure adequate representation and improve means of member communication and support and revisit our member's roles and responsibilities.

4. Build SRWP Membership Program

The ED will work with the Governance and Membership Committee to define stakeholder identities/roles for the organization and formalize relationships to leverage resources and reduce duplication of efforts. While our long-term goal would be to build financial support for the organization through membership fees, our short-term goal is to strengthen our relationships and establish our reputation.

5. Develop Long-Term Strategic Plan

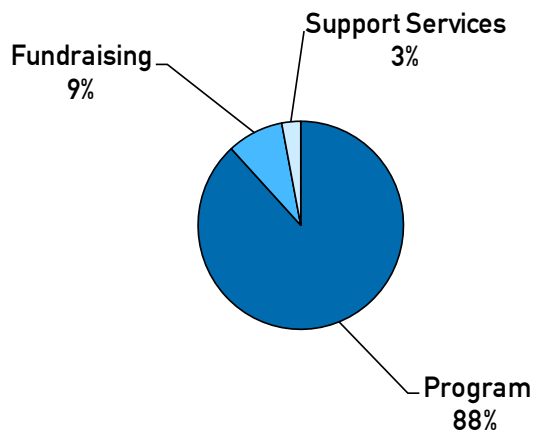
The ED will identify potential activities for SRWP and work with the Board of Trustees and bookkeeper to draft a long-term strategic plan (3 to 5 years).

Financial Report

2013 Annual Report:

Financial Information for the calendar year January 1, 2013 to December 31, 2013

Beginning net assets.....	47,182
Revenue	
Gifts and contributions.....	76,947
Grants and consulting revenue.....	270,481
Total revenue	<u>347,427</u>
Expenses.....	
Program.....	301,954
Fundraising.....	30,321
Support Services	10,212
Total expenses	<u>342,488</u>
Ending net assets.....	52,121
Assets	
Cash, investments and other assets.....	82,681
Equipment (Net of Depreciation).....	1,576
Total assets	<u>84,257</u>
Liabilities and net assets.....	
Liabilities.....	32,135
Net Assets	<u>52,122</u>
Total liabilities and net assets	<u>84,257</u>



Support SRWP's Efforts!

Join fellow community leaders to support the Sacramento River Watershed Program and help create a shared vision for the future

SRWP invites you to become a 2014 member or sponsor. Your contribution will help SRWP continue its great work in providing public outreach, watershed health monitoring, and providing support to grassroots organizations - all of whom are working to improve and sustain our quality of life in the Sacramento Watershed. SRWP relies on contributions from businesses, government agencies, and organizations to continue and expand the success of our efforts including the Annual Summary and Report and the following events:

State of the Sacramento River Watershed Forum – October 30, 2014

Our most popular annual event is held at the Sheraton Grand Sacramento Hotel and hosts the region's leaders and authorities on watershed management issues and provides an opportunity for an engaging dialog around the policies, programs, infrastructure projects, funding and trends affecting the watershed.

Watershed Investment Summit - Summer 2014

SRWP recognizes and promotes the importance of existing watershed management efforts and will coordinate with key stakeholders including legislative staff, policy consultants, RCDs, agency representatives, NGOs and other "out of the box" thinkers to brainstorm and deliberate on long-term funding and investment opportunities for watershed management activities.

Watershed Moment Dinner – Fall 2014

This event has served as the organization's primary outreach and fundraiser activity. We have not had the funding to coordinate this event for the past two years but we would like to modify it and hold it again this year. We are considering moving the event from the yacht club to a family farm and sharing information on foodsheds and the watershed benefits derived from a locally based self reliant food economy.

There are a number of ways that you can support SRWP from providing administrative and/or technical assistance, patterning with us on our efforts, to providing financial assistance. Please visit our website at www.sacriver.org for more information.

Thank You to our Contributors

Chris Barr, Sacramento National Wildlife Refuge

Elizabeth Betancourt, SRWP Board Trustee

Katie Burdick, CABY, Upper Pit R and Yuba IRWMPs

Paul Buttner, California Rice Commission

Bill Duarte, Nonprofit Grant Administrators

Donna Gentile, Westside IRWMP

Catherine Giordano, SRWP Scientific Consultant

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Robin Singler, USR IRWMP

Todd Sloat, SRWP Board Trustee

Mandy Vance, Sierra Nevada Conservancy



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A Special Thanks to our Outgoing Board Members

- Tad Alexander, River Partners
Tam Doduc, SWRCB
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Leo Winternitz, The Nature Conservancy