

SANTA CLARA RIVER WATERSHED TIMES

What's happening around the watershed?

UC
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Fall 2008

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Autumn in the Watershed...

We have an information-packed fall issue of the *Santa Clara River Watershed Times* for you. Sabrina Drill follows up on the successful Watershed U. courses and discusses the survey results from the Santa Clara River and Arroyo Seco programs. This issue also highlights both endangered *and* invasive aquatic species in the watershed. Readers will find a summary of Elise Kelley's recently released steelhead smolt study, as well as a report by Steve Howard on steelhead fish passage in the Santa Clara River. Invasive species to watch for – New Zealand mud snails and quagga and zebra mussels – are covered by Sabrina Drill. This issue applauds the City of Santa Clarita on its innovative environmental programs, which garner a Clean Air Award. Also, John Krist reviews the landmark water quality program for the agricultural industry in Ventura County. We have an update on the Santa Clara River watershed planning process by Lynn Rodriguez and a discussion by Jeff Ford on the Upper Santa Clara River Integrated Regional Water Management Plan. Vincent Su explains the upcoming revised digital flood insurance rate maps and their significance for future land use planning, while Catherine McCalvin describes The Nature Conservancy's current land acquisition goals. We hope that by providing this wide variety of articles, we encourage you to think about the broad view when making choices or decisions that affect your watershed.

Valerie Borel, UCCE Editor

Watershed U. Follow-up Survey

By Sabrina Drill, U. C. Cooperative Extension

Watershed U. – Santa Clara River, the course that preceded this newsletter, was held in 2005. A previous Watershed U. course, the first, was held in the Arroyo Seco tributary of the Los Angeles River in 2003. Together, the programs reached over 200 southern California stakeholders from over sixty agencies, elected offices, businesses, non-profits, and community and educational organizations who represented a variety of viewpoints. The programs garnered rave reviews, and several of our WSU-Santa Clara graduates are now involved in the Santa Clara River Watershed Committee.

In 2008 we conducted a follow-up survey to see whether participants had found lasting value in the Watershed U. experience. Of twenty-eight respondents who had participated in either program, 100% felt they had learned valuable information in the course, and 89% felt the information they learned would have been harder to find without the program, including historical information, an

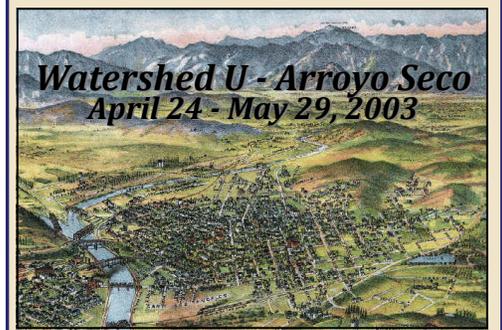
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The Santa Clara river estuary looking toward the Pacific. Photo courtesy of Steve Howard.

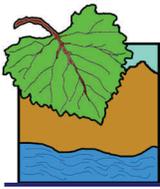


Graphic for Watershed U. - Santa Clara River. The Santa Clara River flows through both Los Angeles and Ventura Counties.



Graphic for Watershed U. - Arroyo Seco. The Arroyo Seco is a subwatershed of the Los Angeles River. It flows from the San Gabriel Mountains to Los Angeles.

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Watershed U Follow-up Survey cont.

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overview of the interaction between political, jurisdictional, and hydrological boundaries, and access to a wide variety of ideas and perspectives presented in a non-confrontational educational setting. Over 75% of respondents felt their effectiveness in watershed work had increased due to participation in the program, and 62% reported that the experience increased their ability to communicate with each other. Respondents said the program helped them get up to speed on the watershed and caused them to increase their focus on the ways that their own projects interacted with those of other organizations or agencies.

Sixty-two percent of those surveyed said they developed new relationships during Watershed U. that have helped them in their work, including finding new volunteers or volunteer opportunities, becoming involved in civic organizations, facilitating visits to on-the-ground projects, and generating collaboration between government agencies and non-profits. One discussed the value of meeting biologists, members of local Native American tribes, and people from far-flung parts of the large Santa Clara watershed. Another said that "the sense of community that these workshops created amounts to new relationships for me. I believe that a sense of community is another important ingredient for success."

Perhaps most telling, 90% of respondents would definitely or probably recommend participation in Watershed U. to colleagues. Sixty-nine percent would like to see the program repeated in their watershed sometime within the next 5 years.

One respondent said that Watershed U. was a life-changing event, and another said "I wish I had more time to say how much this program impressed me. I am deeply grateful to all who made it ... [our small organization] could never dream of doing such a program ourselves. Your work is a dream come true for local residents who realize what a natural wonder this watershed continues to be." A local government representative stated that after completing the course, "I'm more aware of how the different aspects of the watershed interact and am able to consider the impacts projects have on one another in a more meaningful way." Another said that since participating in the Watershed U. program, they "Founded committee to get pocket park of drought tolerants planted, got film made about local water sources. These activities supported, inspired by Watershed U". Outside of this formal survey, one Watershed U. graduate has told me that after her experience in the program, she worked with her neighbors to establish a local land conservancy, and several said they have used the Watershed U. notebooks many times since the course to refresh their own knowledge, look for contacts, or to train new employees.



The endangered Least Bell's vireo (*Vireo bellii pusillus*), which is found in limited areas along the Santa Clara River. Photo courtesy of U.S. Fish & Wildlife Service.

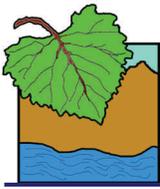


The Endangered Arroyo Toad (*Bufo californicus*). Photo: Chris Brown, U.S. Geological Survey.



Southwestern Pond Turtle (*Clemmys marmorata pallida*), a Federal Species of Concern and a California Species of Special Concern that has been found along the Santa Clara River. Photo: © 2005 Christopher L. Christie.





Update: Santa Clara River Watershed Planning Process

By Lynn Rodriguez

Overview of Santa Clara River Watershed Integrated Regional Water Management Planning and Implementation

In the previous issue of this newsletter we provided an overview of the Santa Clara River Watershed water management planning efforts and reported on the creation of the Santa Clara River Watershed Committee. As reported in that article, critical challenges along the watershed include increased salinity due to water softener and wastewater discharge, periodic flooding events resulting in property and environmental damage, and water quality degradation due to septic tanks and agricultural runoff.

To help address these issues the Santa Clara River Watershed Committee (SCRWC), was formed in July, 2006 under the auspices of the Watersheds Coalition of Ventura County (WCVC). The SCRWC continues its work as part of a region-wide effort to implement the Integrated Regional Water Management Plan (IRWMP). The IRWMP was prepared, in part, with grant funds from Proposition 50, which was approved by the voters in California in 2002.

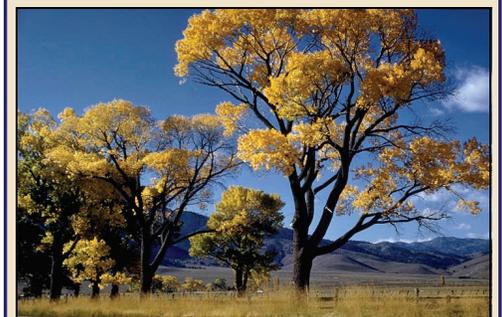
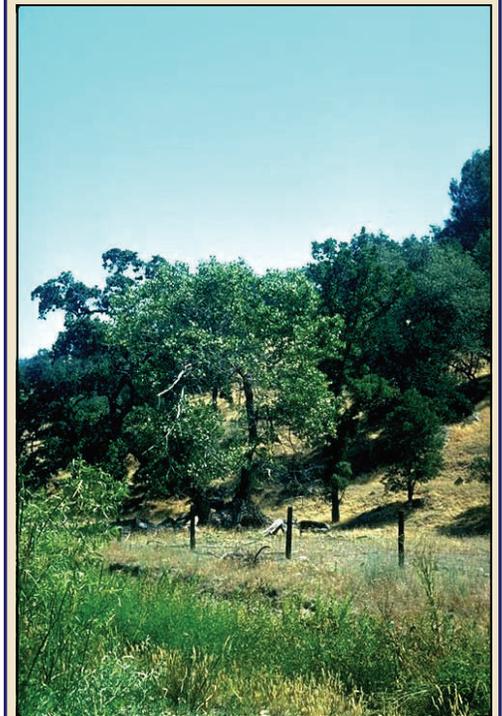
The objectives for the Santa Clara River Watershed, developed by the SCRWC include:

- Reduce dependence on imported State Water, protect, conserve and augment water supplies and improve water supply reliability
- Sustain, protect and restore ecosystem functions throughout the Watershed (includes upland areas down to estuaries/ ocean)
- Protect and improve water quality throughout the Watershed
- Provide compatible watershed related recreational, public access and educational opportunities
- Protect people, property and the environment from adverse flooding impacts (minimize damage from flooding)

The SCRWC meets regularly and has focused its efforts on developing objectives and future project concepts that will address water-related issues and problems in the Watershed. Participants in the Committee include representatives of state and federal agencies, local water agencies, cities, the County Board of Supervisors and public interest and environmental groups as well as interests in the upper Watershed located in Los Angeles County.

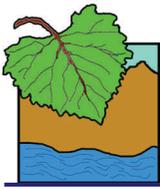
The efforts of the SCRWC build upon work previously conducted by the Wetlands Recovery Task Force, the Santa Clara River Enhancement Plan (SCREMP) Steering Committee (concluded in

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The Fremont Cottonwood (Populus fremontii ssp. fremontii) occurs in many locations along the Santa Clara River.

Upper two photographs by © Br. Alfred Brousseau, Saint Mary's College. Lower photograph by Charles Webber, ©California Academy of Sciences.



S. C. R. Watershed Planning Process cont.

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2005) and the Watershed University conducted in 2005 by the UC Cooperative Extension.

In 2007 the WCVI received a \$25 million Proposition 50 Implementation Grant; three of the eleven projects funded by that grant are located in the Santa Clara River Watershed. The three projects focus on water quality improvement, and they include: The El Rio Forebay Groundwater Contaminant Elimination Project (removal of septic systems), Oxnard Forebay Groundwater Contaminant Elimination Project (removal of septic systems), and the Fillmore Integrated Water Recycling Project. All three projects are in various stages of construction. In this article we have featured one of those projects; the Fillmore Integrated Water Recycling Project.

Fillmore Integrated Water Recycling Project

This project includes construction of a new wastewater treatment plant that will produce Title 22, unrestricted use recycled water, and a distribution system to put the recycled water to beneficial use. The grant will cover about 29% of the cost for pipelines, distribution facilities, irrigation systems, and percolation areas.

The project will distribute recycled water to school grounds, parks, agriculture, and landscaped areas throughout the community. Subsurface (underground) drip irrigation systems will water turf and landscaping from below, and at the same time dispose of recycled water to the underground water basin. The subsurface drip system will place recycled water in the top 10-inches of soil to maximize uptake by vegetation. The water is pulsed into the soil to preserve aerobic conditions to maximize further treatment. Subsurface drip systems for recycled water are believed to provide the best treatment process for human hormones and pharmaceuticals that cannot be removed even with reverse osmosis.

The project will eliminate wastewater discharge of effluent to the Santa Clara River, reduce demands on local groundwater supplies, distribute trace pollutants over a wider area, reduce use of chemical fertilizers by providing recycled water with nutrients and create and maintain a small demonstration wetland area.

The project will include 6775 lineal feet of recycled water distribution pipeline and will retrofit, modify and control turf and subsurface drip irrigation at seven recycled water use sites.

The recycled water distribution systems will cost \$10.5 million, of which this grant will pay for \$3.05 million. The overall project cost, including the wastewater treatment plant is approximately \$83 million. Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board.

Future Efforts of the SCRWC

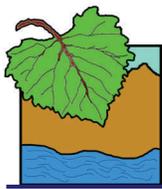
The SCRWC will facilitate continued collaboration along the Watershed and be ready to pursue future funds for planning and implementation of much needed projects to protect and enhance the resources in the Watershed. Future implementation actions and project concepts are being developed by the SCRWC, based on the agreed-upon objectives and preferred types of projects and programs, for inclusion in future updates to the IRWMP, and to be included in any watershed management plan developed in the future. Proposition 84, approved by the voters in 2006, will provide funds for additional IRWM projects and programs, though those funds have yet to be appropriated by the legislature.

For more information about the IRWMP or activities in the Santa Clara River Watershed contact Lynn Rodriguez at (805) 654-2455.



Construction of the Fillmore Integrated Water Recycling Project.

Photo courtesy of Lynn Rodriguez.



The Nature Conservancy—SCR Projects

Catherine McCalvin, The Nature Conservancy

The Nature Conservancy's (TNC) mission is to protect plants and animals around the world, including the land and water they need to survive. The Santa Clara River watershed is a priority place given this mission because the Santa Clara River system, from its headwaters to the Pacific Ocean, represents the last large, intact fresh-water system in Southern California. Protecting the Santa Clara River is a challenge, in part, because the riverbed and floodplain are fractured into thousands of parcels that are primarily owned by private entities and because the threats to the river range from invasive species to urban development.

To help guide the work of TNC and others to protect the biodiversity of the river and its watershed, TNC and key experts and partners completed two conservation plans (<http://conserveonline.org/library/santa-clara-river-upper-watershed-conservation/@@view.html> and <http://conserveonline.org/library/conservation-plan-for-the-lower-santa-clara-river/@@view.html>). Among other things, these plans identify priority areas for protection. Some of these properties are currently in agriculture production but would be restored once acquired. TNC, with the help of many partners, has acquired more than 12 miles and 2500 acres of the land along the Santa Clara River for habitat protection and restoration with the goal of acquiring 1500 more acres by 2010.

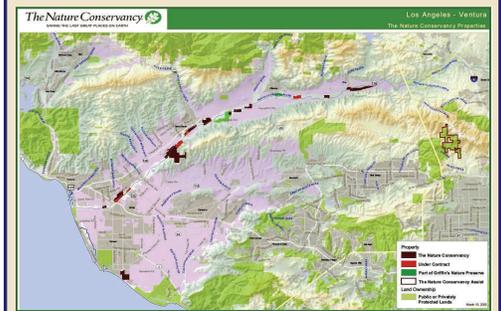
The plans also identify the preservation of agriculture in the floodplains and uplands as preferable over development of the lands for residential or industrial uses. Urbanization contributes to further habitat loss and degradation while agriculture, although not natural, can be done in such a manner that contributes to the health of the river. To help support agriculture in the county and promote compatible agricultural practices, TNC is a member of the Ag Futures Alliance. As an owner of agricultural lands in the watershed, TNC is also a member of the Farm Bureau.

TNC is actively managing the lands it owns to eliminate human disturbances such as off-road vehicle use and dumping of trash. TNC is also starting to undertake active restoration of its lands, including the removal non-native plants. In the coming years, these restoration efforts will extend to restoring floodplain habitat disturbed by gravel mining, agriculture, and other activities. TNC is also working with partners to promote more wide-spread restoration and protection of the river system.

Finally, this summer TNC hosted several groups of elementary-aged children on its property to learn more about the river. With limited resources, a lack of trails and a focus on further conservation, TNC's properties are not currently open to the public. However, individual access can be arranged by calling 805.642.0345, x. 512. For more information, please visit www.nature.org.



Rich Handley discusses Arundo with a group of students at a TNC property on the Santa Clara River. Photograph: The Nature Conservancy.



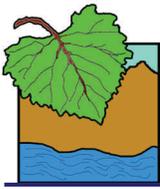
Map of TNC lands bordering the Santa Clara River. Map courtesy of The Nature Conservancy.



TNC lands in the Upper Santa Clara River. Photograph courtesy of the Nature Conservancy.

TNC is a private, 501(c)(3) nonprofit organization with operations in more than 30 countries and all 50 states. Over the past 50 years, TNC has protected more than 115 million acres around the world. TNC is a science-based organization that takes a non-confrontational approach to conservation, and only works with willing sellers. Locally, the LA-Ventura Project is based in Ventura and covers the Santa Clara River watershed, the Santa Susana Mountains and Ormond Beach.





Steelhead trout smolt from the Santa Clara River Estuary.
Photo courtesy of Elise Kelley, Ph.D.

Steelhead Smolt Study Completed

Elise Kelley, Ph.D. has recently completed a two year study for the California Department of Fish and Game entitled *Steelhead Trout Smolt Survival in the Santa Clara and Santa Ynez River Estuaries*. This investigation examines steelhead smolt survival and residence times in the estuaries of these two rivers.

Steelhead trout (*Onchorhynchus mykiss*) populations on the Santa Clara and Santa Ynez rivers were historically two of the largest runs in southern California. These two runs also represent some of the best possibilities for restoration and preservation for southern steelhead. Southern steelhead smolts were tagged with acoustic and PIT tags on the Santa Clara and Santa Ynez Rivers during the spring of 2008 to assess their survival and residence time in estuaries. There was a 59% emigration survival rate on the Santa Clara River, and a 25% emigration survival rate on the Santa Ynez River. Surveys of water quality, potential smolt prey, and cover in both estuaries revealed that the major potential problems for smolts are high turbidity, high water temperatures, insufficient cover to hide from predators, and resident populations of avian predators. Recommendations for improving and assessing the runs are proposed, including management actions such as increasing water releases, further monitoring of smolt survival and estuary conditions in conjunction with management actions (adaptive management), and further research into the life-history of this important and critically endangered, but poorly understood fish. Findings from this project are available on the Santa Clara River Parkway website at <http://www.santaclarariverparkway.org/wkb/scrbiblio/techreportreference.2008-09-15.2561780478>.

Placerita Canyon Nature Center Goes Green

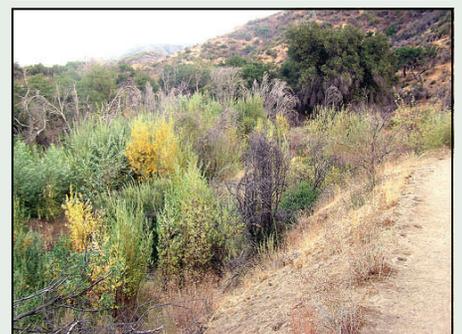
Placerita Canyon Nature Center is currently undergoing extensive renovations using the LEED (Leadership in Energy Environmental Design) Green Building rating system, and will re-open in Spring 2009. New construction will be of recycled building materials from local sources. In order to maintain certification, the Nature Center cannot use toxic chemicals or herbicides when they re-open.

The Nature Center offers a wide variety of environmental programs and is located within the Placerita Canyon Natural Area at 19152 Placerita Canyon Road in Newhall.

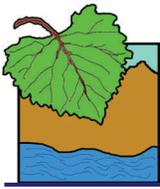
Placerita Canyon Natural Area contains a diversity of flora and fauna, an assortment of hiking trails, and Placerita creek. Placerita Canyon serves as an important wildlife linkage to other wildland areas as well.



New Entrance to Placerita Canyon Nature Center. Photograph courtesy of Placerita Canyon Natural Area.



Fall Color at Placerita Canyon Natural Area. Photograph courtesy of Placerita Canyon Natural Area.



Steelhead Fish Passage in the Santa Clara River

By Steve Howard

Steelhead migration monitoring has been conducted in the Santa Clara River since 1991 following the construction of the permanent Freeman Diversion Dam and Fish Passage Facility. Monitoring activities at the facility are a product of measures that were designed to avoid or minimize effects the diversion would have on migrating steelhead and Pacific lamprey as they passed through the facility. The efforts of these monitoring activities have produced some of the best information regarding steelhead migration in southern California. The monitoring results have helped manage the fish passage facility, assisted the formal consultation with the National Marine Fisheries Service, directed current and future research designs and helped provide a general knowledge of steelhead and Pacific lamprey migration trends in the Santa Clara River.

The monitoring scheme developed for the Freeman Diversion has two main objectives: 1) monitor upstream and downstream migration through the facility when feasible and 2) trap and truck steelhead smolts from the Freeman Diversion to the Santa Clara River Estuary when conditions between the dam and the estuary are poor when surface water is lost to groundwater or when diversions and pumping deplete the majority of surface flow. The monitoring results from 1991 to 2008 have varied considerably between wet and dry years. During wet years, the sandbar at the estuary is breached, the estuary is opened to the ocean and adequate surface flow in the mainstem Santa Clara River and tributaries is sufficient for upstream and downstream migration. During dry years, the sandbar can remain closed and surface flows in the mainstem and tributaries can be

insufficient for steelhead migration. Steelhead smolt migration results between 1995 and 2008 from trapping and trucking range between 2 smolts during the 1998 and 2004 dry years to 413 and 839 smolts during the 1997 and 2000 wet years. Steelhead adults pass the facility on average two fish per year during the wet years and no fish during the dry years. The more adults that pass the Freeman facility, successfully migrate to spawning sites, and successfully spawn raises the potential for increased smolt production which in turn will produce more adults.

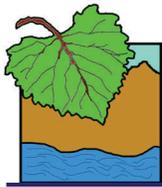
More research and monitoring is needed to better understand steelhead migration, spawning and rearing success farther up the watershed especially within tributaries such as Santa Paula Creek and Sespe Creek. Current research activities include a tagging study that was conducted in 2008 to understand how steelhead smolts utilize the Santa Clara River Estuary and when they emigrate to the ocean and a review by a panel of fish passage experts of the adequacy and the efficiency of the Freeman Diversion Fish Passage Facility. Future research that is in the planning stages include trapping and tagging of smolts in Santa Clara River tributaries, monitoring rainbow trout dispersal and utilization of thermal refugia within habitats with groundwater seeps during the hot summer months and downstream migrant rainbow trout trapping in Piru Creek above Piru Lake.

For information regarding steelhead monitoring and research please visit the United Water Conservation District website at: www.unitedwater.org or contact Steve Howard (district fisheries biologist) at steveh@unitedwater.org.

Freeman Diversion Facility.

Photograph courtesy of Steve Howard.





Aquatic Invasive Species to Watch Out For

By Sabrina Drill

The Ventura County Cooperative Extension office's Natural Resources and Sea Grant programs have recently been involved in monitoring efforts for two aquatic invasive invertebrates of concern in California – the New Zealand mudsnail and the quagga mussel.

The New Zealand mudsnail, *Potamopyrgus antipodarum*, is an aquatic invasive species that was first found in the United States in 1987 and in California in the late 1990's. In 2006, they were detected in Piru Creek in the Santa Clara River watershed. New Zealand mudsnails are tiny, with adults only reaching 3-5 mm and juveniles about the size of a grain of sand. They may have detrimental effects on native fish and wildlife. New Zealand mudsnails reproduce fast and can reach incredibly high numbers rapidly. They are able to survive out of water for several days, and can stick to fishing gear, shoes, and clothes. Taken together, their small size, ability to stick and survive out of water, and their high fecundity, make them excellent at invading new systems. We know of no way to get rid of them once they invade a river system, but researchers at UCSB are investigating the use biological control methods. In 2008, with funding from the US Fish and Wildlife Service, a team of researchers from UCCE, UCSB, CSUCI, and UCLA began mapping the current distribution of New Zealand mudsnails throughout the Santa Clara River watershed. Preliminary field work found the snails only at Frenchman's Flat, at the base of Pyramid Lake in the Piru Creek drainage. This is where they were first identified in 2006, so hopefully this means the infestation has not spread beyond this area. Sample analysis and field work will continue in fall 2008 – check the Ventura County Cooperative Extension web site at <http://ceventura.ucdavis.edu> for updates.

Quagga and zebra mussels, *Dreissena bugensis* and *D. polymorpha* were originally introduced into the United States in the 1980s. In 2007, quagga mussels were found in Lake Mead and they spread throughout the Colorado River, its aqueduct, and into several reservoirs in Southern California. Quagga and zebra mussels are small freshwater bivalves. Quagga and zebra mussels grow and mature within one year and a mature female is capable of producing a million or more eggs per year. Both quagga and zebra mussels can cause substantial ecological and economic damage. Through feeding and bioaccumulation, they can compete with native organisms and effect whole food chains. They can damage infrastructure, including water supply and cooling systems as well as docks, breakwaters, buoys and vessels themselves. The added cost to maintain water supply systems may be passed on to consumers, and lake managers

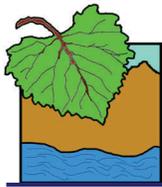
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Monitoring for New Zealand mud snails.
Photographs by Andrew Burgess.



New Zealand mud snails - the small black objects on the algae - compared in size to a quarter. Photograph by Andrew Burgess.



Farms, Ranches Fund Landmark Water Quality Program

By John Krist

Over the past two years, Ventura County's agricultural community has emerged as a statewide leader in the effort to measure and mitigate farming's role in the degradation of surface waters. The centerpiece of that effort is an unusual cooperative effort known as the Ventura County Agricultural Irrigated Lands Group (VCAILG). Administered by the Farm Bureau of Ventura County, the program enables local growers to comply with some of the nation's toughest water-quality regulations in the most efficient and cost-effective manner possible.

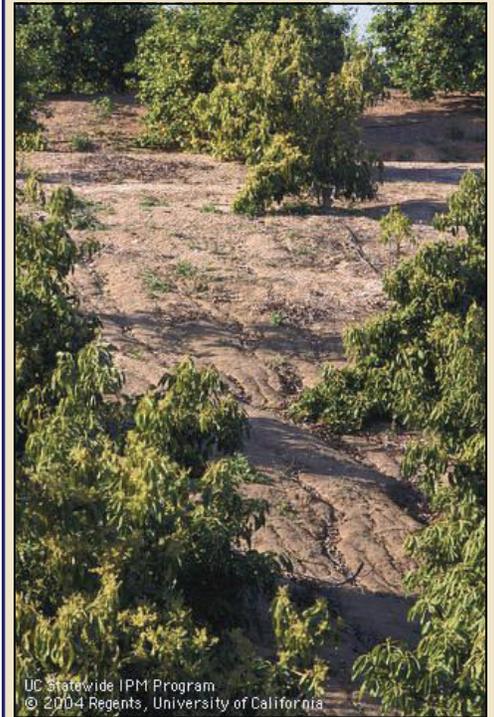
The federal government adopted its first broad anti-pollution legislation in 1948, supplanting it with a tougher law in 1965 and then adopting the most-far-reaching law of all, the Clean Water Act, in 1972. Yet not until 1987, under amendments to the 1972 act, did anti-pollution regulations apply to nonpoint sources — the diffuse runoff from rural fields and urban storm drains that, unlike emissions from factories and sewage treatment plants, lacks an identifiable discharge point where pollution controls can be installed and monitored with relative ease.

California's Porter-Cologne Water Quality Act — the state equivalent of the federal Clean Water Act — began addressing nonpoint sources in 1988. Yet even then, irrigated agriculture in the state remained exempt from the requirements applied to other dischargers, which were required to obtain costly permits that prescribed limits and remedies for harmful emissions. The regional water quality control boards in charge of enforcing state anti-pollution standards generally waived the requirements for farms, deeming it in the public interest to do so.

A 1999 state law banned this practice, requiring that all such blanket waivers expire on Jan. 1, 2003, and directing the nine regional boards to come up with an alternative. The boards governing the Central Valley, San Diego and the Central Coast went first; the Los Angeles board, which oversees Ventura County, adopted its program on Nov. 3, 2005.

The new rules still allow farmers to avoid the cumbersome and costly process of applying for individual discharge permits like those required for factories and sewer plants. But to do so, they must obtain a Conditional Waiver of those requirements from the regional board. To obtain such a waiver, which is good for five years, they must agree to set up a monitoring program to test for contaminants in waterways downstream from their fields, develop management plans to reduce or eliminate contaminated drainage

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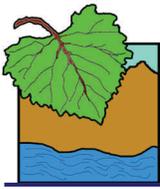


UC Statewide IPM Program
© 2004 Regents, University of California

Avocado groves in Ventura County. Soil erosion due to irrigation and runoff into nearby stream demonstrates need for water quality monitoring. Photograph by David Rosen.



Microsprinkler irrigation under avocado trees in Ventura County. Photograph by David Rosen.



FEMA Flood Insurance Rate Map Updates in the Santa Clara River Watershed

By Vincent Su

The Santa Clara River flows approximately 100 miles from its headwaters near Acton, California, to the Pacific Ocean, passing through six cities and communities in Los Angeles and Ventura Counties. The 1,640-square-mile watershed is one of the largest river systems in Southern California that still remains in a relatively undeveloped state. A comprehensive watershed protection plan is essential for local communities and government agencies to plan for future land uses, preserve natural habitat, protect endangered species, and reduce potential loss of life and property from flooding. The Ventura County Watershed Protection District (VCWPD), in conjunction with the U.S. Army Corps of Engineers and the Los Angeles County Department of Public Works, is striving to develop such a plan for the Santa Clara River watershed. Updating the outdated (dated back to early 1980's) flood hazard maps is an important component of the plan.

Several floodplain management efforts are being undertaken concurrently in the Santa Clara River watershed:

- Santa Clara River and Tributaries Flood Insurance Restudy
- Levee Certification
- Digital Flood Insurance Rate Map (DFIRM) Updates

Santa Clara River and Tributaries Flood Insurance Restudy

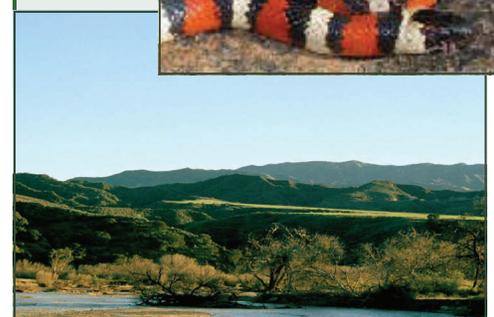
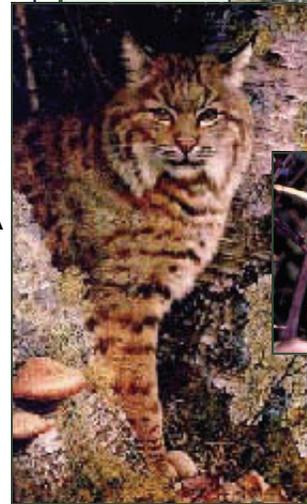
Under the Cooperating Technical Partners (CTP) Program, FEMA and VCWPD initiated a flood insurance study for Lower Santa Clara River and nine of its tributaries in Ventura County in 2006. FEMA released a preliminary study result in May 2008. VCWPD and local communities have hired consulting firms RBF, PACE and Kasraie Consulting to review the study and provide comments. FEMA estimated that the study results will be incorporated into DFIRM for Ventura County in early 2010.

Levee Certification

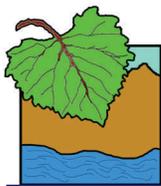
FEMA has implemented a policy to verify the certification status of all levees currently depicted on the effective FIRM as providing protection from the base (1% annual chance) flood. Major levees in the Santa Clara River watershed include levees on the Santa Clara River as well as the Sespe Creek levee in Fillmore. Levee owners have until November 30, 2009 to prove whether or not these levees are certifiable.

PHOTOGRAPHIC EXHIBIT: Wildlands of the Santa Clara River Watershed

This traveling exhibit, presented by *Science & Collaboration for Connected Wildlands* and *Visual Journeys*, depicts a breathtaking visual journey through the Santa Clara Watershed. It highlights the importance of preservation efforts in the watershed and also illustrates many species that live in and depend on the natural habitat in the watershed. Both Acton Community Center and Fillmore Library hosted the event in October and early November. For those unable to view it this year, the exhibit will be held in other cities along the river next year.



(Continued on page 11)



FEMA Flood Insurance Rate Map Updates cont.

(Continued from page 10)

Digital Flood Insurance Rate Map (DFIRM) Updates

Under the Map Modernization Program, FEMA is updating and modernizing flood hazard maps for most communities across the nation. In September 2005, FEMA released a preliminary DFIRM for Ventura County. In May 2008, a revised preliminary DFIRM was released to reflect changes resulting from appeals and Provisionally Accredited Levee (PAL) evaluation. The following is a tentative schedule to adopt the DFIRM.

- May 30, 2008 – Revised Preliminary issued; comment period initiated.
- October 30, 2008 – Comment period to the Revised Preliminary FIS and DFIRM expires.
- December 30, 2008 – Letter of Final Determination issued by FEMA.
- June 30, 2009 – Effective date of Ventura County and Incorporated Areas for new maps.

On the revised preliminary DFIRM maps, one should expect reasonable changes in floodplain/floodway determinations. Some of the changes are the results of changes in hydrology, river morphology, and land uses over the course of a quarter of a century. VCWPD and local floodplain management agencies will work together to make sure the new floodplain/floodways are determined based on solid scientific foundation and are in accordance with appropriate federal and state policies and regulations. For more information on FEMA flood insurance rate map updates, please visit http://portal.countyofventura.org/portal/page?_pageid=876,1324092&_dad=portal&_schema=PORTAL.

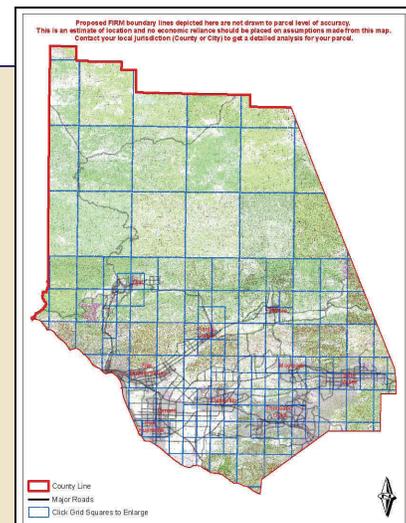
Get Involved in the Watershed!!

Hedrick Ranch Nature Area

For more information, contact Jackie Worden at jaybeew@avenuecable.com.

The Hedrick Ranch Nature Area is a 220+ acre preserve owned by the Friends of the Santa Clara River (FSCR), located on the south side of the Santa Clara River near Santa Paula. We have an active group of volunteers working to restore the HRNA, via regularly scheduled workdays once per month fall through spring. Our efforts include weed abatement, planting of native plants, and establishing trails. We also spend time bird watching and looking for other wildlife. We start at 9:00 am and finish by 11:30 or 12. Wear long pants, boots, and sun protection, and bring water. We have some tools and gloves, but it's always nice to bring your own.

Future workdays for 2008-2009 will be: Saturday, December 6th; Sunday, January 11th; Saturday, February 7th; Sunday, March 8th; and Saturday, April 4th.



Index of preliminary 2005 FEMA DFIRM Maps of Ventura County to be updated by June 2009. Map courtesy of Ventura County Watershed Protection District.



Yerba Mansa (*Anemopsis californica*) growing near the Santa Clara River at Hedrick Ranch Nature Area. Photograph: Jackie Worden.

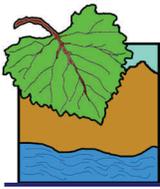
Hedrick Ranch Nature Area Directions

From Ventura:

- East on Hwy 126.
- Exit 10th Street (Santa Paula).
- Left at end of off ramp.
- Right on Harvard (first light).
- Right on 12th St. (first intersection). 12th Street turns into South Mountain Road.
- Go 3.7 miles to 20395 South Mountain Road on the left.
- Turn left onto dirt road; drive ~1/2 mile to end.

From Fillmore:

- West on Hwy 126.
- Left on Hwy 23.
- Slight right onto Bardsdale Ave.
- Left onto S. Sespe St.
- Continue on South Mountain Road
- Go 3.4 miles to 20395 South Mountain Road on the right.
- Turn right onto dirt road; drive ~1/2 mile to end.



Santa Clarita wins 2008 Clean Air Award

The South Coast Air Quality Management District presented an award this month to the city of Santa Clarita for its innovative and aggressive approach to improving the air quality in our region. Some of the programs presented in the winning award application include Bike to Work Day, Transit Oriented development plans, an environmentally preferable purchasing policy, air quality advocacy, a community energy partnership, facilities energy efficiencies and the City's urban forestry programs.

Bike to Work Day held in May is part of the City's rideshare program. The City has been providing rideshare incentives for a decade to show its commitment to air quality. Overall, 23 business teams, totaling 268 employees, participated in this year's Bike to Work Day. The City of Santa Clarita alone had a total of 33 riders. The number of participating businesses and bicyclists increases every year.

Santa Clarita's Bike Friendly Community program began in 2007, when the League of American Bicyclists selected the City of Santa Clarita for a Bike Friendly Community certification. A community must demonstrate achievements in each of the five categories in order to be considered for an award.

Transit-Oriented Development, strategically incorporated into the City's Newhall neighborhood, has been master planned for redevelopment. The Downtown Newhall Specific Plan, adopted in 2005, has a guiding principle of transit-oriented development. In the 1990's, the City secured three Metrolink stations within City limits. The Newhall Station is in the heart of Newhall. The redevelopment plan calls for infill and mixed use development near the Newhall Metrolink station to encourage residents to reduce, if not eliminate, car use in day-to-day living.

With the City's Facilities Energy Efficiency program, the City worked to develop its Transit Maintenance Facility (TMF) as a high-quality project. It is environmentally sensitive by using state-of-the-art energy efficiency and sustainable building methods. This project was the first, but not the last, Leadership in Energy and Environmental Design (LEED) Certified building in the City and received a Gold rating by the United States Green Building Council (USGBC).

Santa Clarita's Environmentally Preferable Purchasing Policy calls for phasing out vehicles with less polluting alternatives such as low sulfur or bio-diesel, compressed natural gas, other bio-based fuels, hybrids, hydrogen fuel cells, and electric batteries. All interior paint shall contain the lowest concentrations practicable of volatile organic compounds (VOCs). A recent janitorial supplies' contract has resulted in significantly more environmentally friendly cleaning products. This policy also sets a LEED Silver standard for new and redeveloped City buildings.

(Continued on page 13)



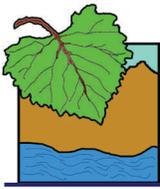
Santa Clarita resident participates in "Bike To Work Day". Photograph courtesy of Los Angeles County MTA.



The Metrolink Station in Newhall encourages residents to reduce car use. Photograph courtesy of the City of Santa Clarita.



The Downtown Newhall Specific Plan demonstrates transit-oriented development. Illustration courtesy of the City of Santa Clarita.



Clean Air Award cont.

(Continued from page 12)

For the City's 'On Road Heavy Duty Fleet Particulate Traps,' the City invested over \$50,000 to retrofit all the heavy-duty diesel vehicles in the fleet with particulate traps. This far exceeds the regulation required number of retrofits. The City plans to purchase a CNG *vactor truck* in the next year to more efficiently clean out storm water catch basins and protect water quality in the Santa Clara River.

Through Santa Clarita's Urban Forestry program, the City has been awarded a *Tree City USA* designation for eighteen consecutive years. Each year, the Neighborhood Leaf Out (NLO) program undertakes an extensive outreach effort by providing educational opportunities to all citizens. The Neighborhood Leaf Out public outreach program organizes volunteer tree plantings throughout the City and arranges educational programs at local schools. The program reduced the City's dependency on tree planting services, while educating citizens on proper tree planting and maintenance as well as the annual Oak Tree Day celebrations each year. The City regularly conducts public outreach programs, such as Arbor Day, River Rally, Oak Tree Day, and Make a Difference Day. Volunteers who contribute their time and effort to beautify our community through tree plantings promote environmental awareness of trees.

Through the City's Air Quality Advocacy program, the City works with the SCAQMD on air quality concerns in the Santa Clarita Valley. In 1991, the City adopted its first Air Quality Chapter of the General Plan; it was updated in 2000. As a result, in 2004, the group embarked on a *Sub-Regional Plan* for the Santa Clarita Valley. The town hall meeting that the SCAQMD held in Santa Clarita, was one of the best-attended town hall meetings the SCAQMD has ever hosted. Some of this was related to the CEMEX gravel mining concern, while others had concerns about the ozone pollution in the Santa Clarita area. The City supported 1157 and other rules and laws the SCAQMD has worked to pass.

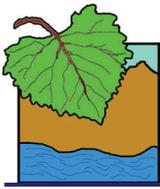
The City of Santa Clarita has an air quality chapter in its General Plan. Cities rarely have an air quality chapter and this effort was visionary. During Bike to Work Day, Santa Clarita boasted four pit stops, which is the largest number for any city in Los Angeles County. Our Bike to Work Day efforts won awards from Metro. The TMF rice straw bale construction was unique and required leadership from our staff and management, as building codes were only recently inclusive of straw bale construction. Lastly, the City is unique in that 98 percent of the ozone air pollution sources come from areas outside the City's control, while having some of the worst ozone air pollution in the nation.



Santa Clarita's Transit Maintenance Facility, constructed with straw bale technology. Photo courtesy of HOK Sustainable Design.



Girl Scouts plant a tree at Central Park in Santa Clarita as part of the Arbor Day sponsored by the city's Neighborhood Leaf Out program. Photograph courtesy of the City of Santa Clarita.



The Upper Santa Clara River Integrated Regional Water Management Plan

By Jeff Ford

The Upper Santa Clara River Integrated Regional Water Management Plan (IRWMP) was adopted on July 30 by the agencies that comprise the Regional Water Management Group for the area per the State Water Code. The IRWMP is a document that identifies and plans for the water resource-related needs of the Upper Santa Clara River Watershed. The IRWMP examines current and future water-related needs, identifies regional objectives for water-related resource management, develops strategies to address identified needs and then evaluates and offers various projects to meet the regional objectives. The IRWMP identified objectives of (1) reducing water demand, (2) improving operational efficiency, (3) increasing water supply, (4) improving water quality and (5) promoting resource stewardship. Additionally, one of the primary goals of the IRWMP is to provide prioritization and ongoing guidance for projects and programs funded under Propositions 84 and 1E. A collaborative stakeholder-driven process was used to develop the IRWMP and the effort was funded entirely by local participating agencies. The IRWMP will be periodically updated to reflect future regional water-related resource needs.

The Region included in this IRWMP is the Upper Santa Clara River Watershed. The Upper Basin of the Santa Clara River is bounded by the San Gabriel Mountains to the south and southeast, the Santa Susana Mountains to the southwest, the Liebre Mountains and Transverse Ranges to the northeast and northwest, and westward to the Ventura County Line. The Region is diverse, with both urban and rural areas as well as National Forest land. The Region encompasses the City of Santa Clarita, the towns of Castaic, Stevenson Ranch, West Ranch, Agua Dulce and Acton in unincorporated Los Angeles County, various other unincorporated community areas in Los Angeles County and is home to more than 250,000 people.

The same Stakeholder process used to identify regional needs and objectives was used to develop implementation strategies to meet the IRWMP objectives. Projects are the specific means for implementing strategies and the way objectives are ultimately achieved. To identify the many potential projects in the Region and to assess the collective contribution of these projects towards meeting the IRWMP objectives, development of this IRWMP included a "Call for Projects" which gave Stakeholders the opportunity to directly submit their projects and project concepts for consideration. The Call for Projects provided a mechanism to engage Stakeholders in the process of sharing project information and discussing the issues related to the integration of projects. The Stakeholders developed a process to prioritize

(Continued on page 15)



Elizabeth Lake, located in the Upper Santa Clara River watershed.

Photograph courtesy of Los Angeles County Department of Public Works (LADPW).



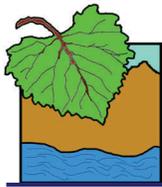
The Santa Clara River running through Valencia.

Photograph courtesy of LADPW.



The Santa Clara River as it flows through Soledad Canyon.

Photograph courtesy of LADPW.



Integrated Regional Water Mgmt. Plan cont.

(Continued from page 14)

projects, with the intent that highest-ranked projects be put forth in applications for funding.

The IRWMP will now be sent to the State Department of Water Resources (DWR) for their review and approval. Ultimately, after DWR prepares new Guidelines for IRWMPs under Proposition 84, the plan will be updated and a grant application for the implementation programs in the IRWMP will be submitted to DWR. In the meantime, the stakeholders and the Regional Water Management Group will continue to meet to prepare for the plan update and to revise the programs in the IRWMP. Any appropriate grant funding that becomes available during the interval prior an application for a Proposition 84 implementation grant will also be applied for.

Aquatic Invasive Species cont.

(Continued from page 8)

are exploring preventative options, including greatly decreasing access for recreation. UC Cooperative Extension - California Sea Grant, with funding from the California Department of Fish and Game, are developing an early detection monitoring manual for quagga and zebra mussels – you can get more information at <http://groups.ucanr.org/quagga/>.

The best way to manage aquatic invasive species is to try and prevent them from spreading. Boaters, fishers, and other recreational users should stay out of infected water bodies if at all possible, and NOT bring wet gear from one water body to another. Scrub all gear with a stiff brush before you leave an infected site; mudsnails and mussels are experts at hiding, so you can't trust a visual inspection. Let all gear dry completely between visits, or freeze for a minimum of six hours between uses. Follow instructions from the California Department of Fish and Game's New Zealand mudsnail and quagga mussel programs for information about disinfecting gear and watercraft.

For more information about invasive species in California, visit <http://www.dfg.ca.gov/invasives/>, and for general information about aquatic invasive species throughout the United States, visit the USGS web site for information about distribution, <http://nas.er.usgs.gov/taxgroup/mollusks/>, the US Interagency Aquatic Nuisance Species Task Force at <http://www.anstaskforce.gov/> for information about management efforts, and the collaborative program on prevention Protect You Waters at <http://protectyourwaters.org/>

If you think you have seen New Zealand mudsnails in a southern California stream please contact Sabrina Drill at sldrill@ucdavis.edu.



ABS pipe encrusted with Quagga Mussels. Photograph courtesy of California Department of Fish and Game.

INVASIVE EURASIAN (QUAGGA & ZEBRA) MUSSEL IDENTIFICATION CARD



QUAGGA MUSSEL



ZEBRA MUSSEL

Byssal Threads - used for attachment
Color Pattern - highly variable
Size - microscopic to approx. 2 inches
Shells pivot at point of attachment
Shell Shape - ovoid, asymmetrical with one pointed end

- Quagga: thin, rounded hinged side, paler
- Zebra: broad, flat hinged side, darker

Don't confuse with Asian Clam at left

- No byssal threads (never attached)
- Symmetrically round shell with concentric ridges

What To Do If Found

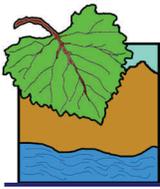
- Take mussel(s) and preserve immediately in rubbing alcohol - DO NOT throw mussel(s) back into the water;
- Note the date and precise locations where the mussel(s) or shell(s) were found;
- IMMEDIATELY contact the Quagga/Zebra Mussel Watch Program at the hotline below, or by email at www.dfg.ca.gov/invasives/quaggamusel.



Illustration: Ball Museum of Natural History

Quagga/Zebra Mussel Hotline in California (toll free): 866-440-9530

Identification card for Quagga and Zebra Mussels used for early detection monitoring. Graphic by Valerie Borel.



Lake Piru Inspections Help Prevent Quagga and Zebra Mussel Invasions

Just a couple of years ago, if you wanted to go fishing or boating, you hitched up the trailer, drove to the lake, and launched your vessel. Now, an extra step is involved - the dreaded boat inspection.

Since January 2007, when quagga mussels were found in Lake Mead, many Southern California lakes have been taking action to prevent quagga and zebra mussels from invading their waters. Protocol varies from lake to lake. At some lakes, for instance, boaters are merely asked if they know about quagga mussels. Lake Piru, on the other hand, takes a more proactive approach and subjects all vessels to a stringent inspection prior to launching. Signs are posted around the lake informing visitors of the boat inspections. If a vessel is suspected of contamination by quagga or zebra mussels, it will be turned away and put on a quarantine list for 28 days. In order to enter the lake, all vessels must be **clean and dry** - dry bilges, dry wet wells, etc., and they must have clean undersides. Lake Piru has a zero-tolerance policy for any water, debris, or growth found on any boat. Adherence to these inspections by visitors helps keep the water supply safe and the lake open for all to enjoy. If you are planning a visit to Lake Piru or would like some more information on the vessel inspections, please visit <http://www.lake-piru.org> or call 805-521-1500.



HELP PROTECT LAKE PIRU

QUAGGA AND ZEBRA MUSSELS RUIN BOATS, DESTROY FISH POPULATIONS, AND DAMAGE WATER CONVEYANCE INFRASTRUCTURE

DON'T MOVE A MUSSEL - STOP AQUATIC HITCHHIKERS

ALL VESSELS ARE SUBJECT TO INSPECTION

Any vessel suspected to be contaminated by Quagga/Zebra mussels or Quagga/Zebra mussel larvae will be turned away

PRIOR TO LAUNCH:

All compartments in vessels must be dry for at least 5 days after any launch into other fresh waters



Thank you for your cooperation

UNITED WATER CONSERVATION DISTRICT

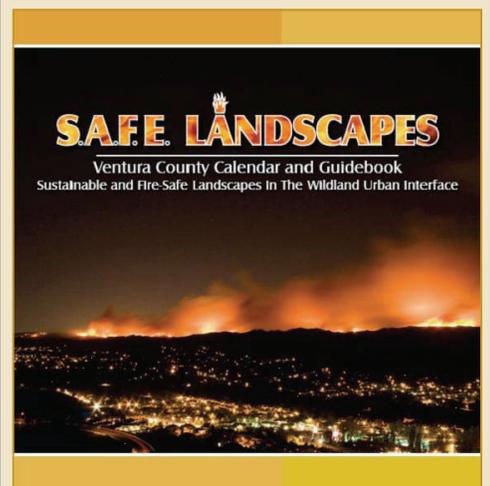
Aerial view of Lake Piru and signage displayed at the lake. Photo courtesy of Lake Piru Recreation Area.

2009 Ventura County SAFE Landscapes Calendar & Guidebook

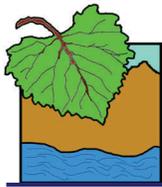
The 2009 SAFE Landscapes (Sustainable and Fire Safe) Ventura County Guidebook and Calendar is here! This beautiful calendar assists wildland-urban interface homeowners create and maintain fire-safe, environmentally-friendly landscapes throughout the year.

SAFE Landscapes not only helps improve fire safety, but also shows homeowners how to be good neighbors to surrounding wildlands by eliminating invasive plants from their landscapes. Most plants don't escape our yards and gardens, but the handful that do can cause serious problems. Invasive plants can fuel wildfires, contribute to soil erosion, increase flooding, and degrade habitat.

To get your own calendars, or a box of them to distribute, contact Valerie at vtborel@ucdavis.edu, or visit the Ventura County



Cover of 2009 SAFE Landscapes Ventura County Calendar & Guidebook.



Farms, Ranches Fund Landmark Program cont.

(Continued from page 9)

from their land, and submit periodic reports to the regional board about the test results.

Owners of irrigated agricultural land may do all that on their own, or they may join a group to share the costs and the paperwork. Most of the county's agricultural landowners have chosen to join VCAILG, the group established to achieve compliance with the Conditional Waiver. So far, 1,420 of Ventura County's 1,646 agricultural landowners have enrolled, representing more than 90 percent of the county's assessed agricultural acreage.

Members pay annual assessments, which are used to cover program expenses. These expenses include hiring consultants to establish water-monitoring sites, collect samples, submit the samples to labs for analysis and report the results to state regulators. The cost, which varies by watershed, is divided among growers on the basis of acreage. The average bill for 2008 was about \$8 per acre — still substantial, but far cheaper than it would be for every landowner to set up individual monitoring and reporting programs.

The group recently completed its first full year of monitoring. Samples collected in 2007 showed levels of certain contaminants that exceed regulatory limits. Those contaminants include pesticides that are no longer in use, such as DDT, chlordane and dieldrin; organophosphorus pesticides, specifically chlorpyrifos and diazinon; salts; and nitrogen. Most of these contaminants were detected at extremely low levels, and it is likely that they can be eliminated or reduced to acceptable levels by improving irrigation efficiency and controlling erosion. Those will be the focus of VCAILG's efforts over the next two years.

— *John Krist is chief executive officer of the Farm Bureau of Ventura County. More information about VCAILG and local water-quality issues is available at www.farmbureauvc.com.*

SAFE Landscapes Calendar cont.

Cooperative Extension Office at 669 County Square Drive. To learn more about SAFE Landscapes Program, or to download an electronic version the calendar, visit <http://ucanr.org/safelandscapes>.

SAFE Landscapes is a collaboration between University of California Cooperative Extension, the Renewable Resources Extension Act, the Ventura County Fire Department, the National Park Service, and numerous other fire and natural resources-related governmental, non-profit, and business organizations.



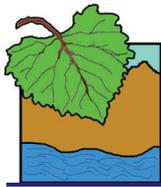
Watershed U - Ventura River Slated for Spring 2009

SAVE THE DATES - Watershed U. is coming to the Ventura River! As we did with Watershed U. – Santa Clara, we are seeking to provide a diverse group of stakeholders a background in the wide range of issues that need to be addressed and balanced as we seek to sustainably manage our watersheds.

Watershed U. - Ventura River is a course for those who live, work, or spend time in the Ventura River Watershed and are interested in understanding how the river works for you, and how you can help improve the river. Each session will focus on different topics including history, geology, water supply and quality, ecology, conservation, land use, and floodplain and watershed management.

Watershed U. is being presented by University of California Cooperative Extension and the Ventura River Watershed Council, with support from the Ventura County Watershed Protection District and U.C. Hansen Trust. Continuing education credits will be available.

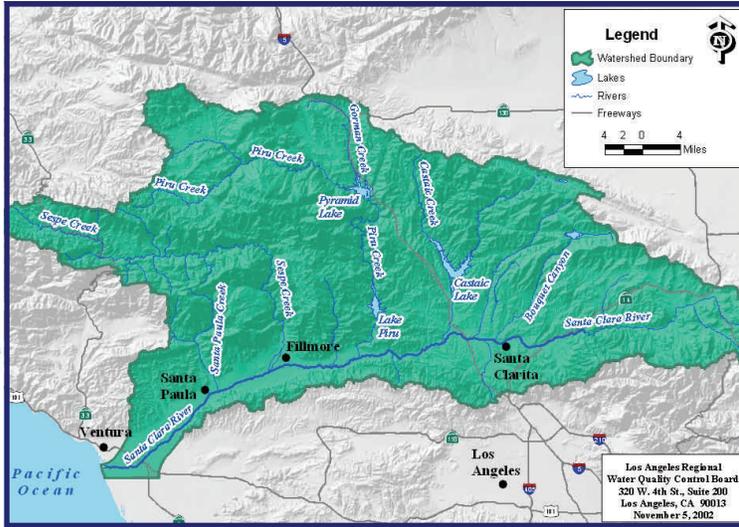
Sessions will take place every Thursday afternoon for six weeks, Apr. 16th - May 21st, 4:00-7:00pm, somewhere in the watershed! Watch for more details coming soon at http://ucanr.org/watershed_u.



SANTA CLARA RIVER WATERSHED TIMES

Fall 2008

The Santa Clara River Watershed



The Santa Clara River Watershed Times is supported by the Santa Clara River Trustee Council, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game.



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