Santa Clara River Watershed Times

What's happening around the watershed?

UC CE

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In This Issue:

The Santa Clara River flows approximately 100 miles from its headwaters near Acton, California, to the Pacific Ocean, passing through six cities and communities of Los Angeles and Ventura Counties. The 1,640-square-mile watershed is one of the largest river systems in Southern California that remains in a relatively undeveloped state.

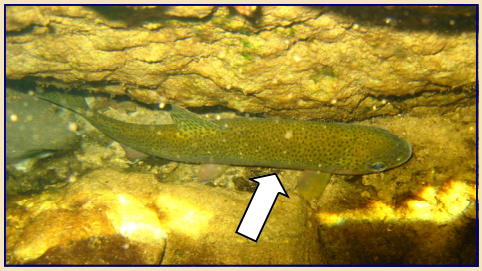
Southern California Steelhead Recovery Plan

By Sabrina Drill, Ph.D., U. C. Cooperative Extension

In July, the National Marine Fisheries Service released their draft recovery plan for southern steelhead. Southern steelhead are considered a distinct population segment (DPS) of *Oncorhynchus mykiss*, comprising the anadramous populations of this species found from the headwaters of the Santa Ynez River in Santa Barbara County to the portions of the Tijuana River watershed on this side of the US/Mexico border. The overarching goal of the recovery plan is to "prevent the extinction of anadromous steelhead in the wild and ensure the long-term persistence of self-sustaining, harvestable, wild populations of steelhead across the DPS by addressing factors limiting the species' ability to survive and naturally reproduce in the wild". The Santa Clara River is considered in the plan to be a high priority "core 1" population, one that is critical to the recovery of the DPS as a whole.

Threats in the Santa Clara were examined in each of the major sections and tributaries that can or do support steelhead populations – the mainstem, used primarily as an access area to higher elevation spawning grounds in tributaries, and Santa Paula, Sespe, and Piru Creeks. Threat sources in the first three were identified as dams and surface diversions, groundwater extraction, and urban and agricultural development. Non-native species, including Arundo, African clawed frogs, New Zealand mudsnails, and introduced sportsfish, were a source of threat throughout the watershed, as were wildfires. Flood control, levees, and channelization posed threats in Santa Paula and Sespe Creeks, and recreational facilities were identified as a source of threat for Piru Creek. Large, complete passage barriers, including Santa Felicia and Pyramid Dams on Piru Creek were also discussed as a source of threat.

(Continued on page 2)



Steelhead (Oncorhynchus mykiss). *Photograph courtesy of Sabrina Drill.*

Steelhead habitat in upper Piru Creek. *Photograph courtesy of Sabrina Drill.*

Freeman Diversion Dam. *Photograph courtesy of Sabrina Drill.*

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Steelhead Technical Recovery Plan cont.

(Continued from page 1)

Recovery actions were identified for each of the areas discussed above. In the mainstem Santa Clara, critical recovery actions include developing and implementing: a watershed-wide sediment management plan; land use planning policies and standards that protect hydrologic and ecosystem functions; monitoring, research on impacts, and prevention and control of non-native species, including public education. Additional measures include physical and operational modifications at Freeman Diversion Dam to support downstream habitat and migration flows, and to allow unimpeded passage over the structure; relocating agricultural and grazing activities; and retrofitting urban storm drains. In Santa Paula Creek, these issues were also important; additional actions include water management planning for both surface and groundwater, and both physical and operational modification of Harvey Diversion Dam to support habitat and allow migration up to and over the dam. In Sespe Creek, an additional recovery action is to restore natural channel features and protect and enhance vegetation on levees. Finally, in Piru Creek, the highest priority activity is to physically and operationally modify both Santa Felicia and Pyramid Dams to support downstream habitat and migration, and to allow passage to upstream spawning and rearing habitat in the upper watershed. In addition to these activities, in Piru Creek, the need to plan and manage recreational facilities and activities to support steelhead conservation was also identified as a high priority. Wildfire was not listed as a very high priority threat source for any of the Santa Clara watershed areas, but it is noted in the draft plan that recent fire activity could result in significant impacts to fish habitat.

In addition to the specific recovery actions noted above for the Santa Clara and its tributaries, region-wide recovery actions also include promoting and funding restoration, threat abatement, and the enforcement of existing and new laws and regulations, pollution reduction, and restricting stocking of hatchery reared fish and angling to protect individuals and the genetic integrity of wild populations.

The full text of the draft recovery plan, as well as a number of related research and summary documents, can be found at http://swr.nmfs.noaa.gov/recovery/So_Cal.htm. For more information, contact the NMFS Recovery Coordinator, Mark Capelli, at (805) 963-6478 x14.

Voter Approved Proposition 50 Funds Put to Good Use

Proposition 50, the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002, was passed by California voters in November 2002. It authorized the Legislature to appropriate $500 million for Integrated Regional Water Management (IRWM) projects. The intent of the IRWM Grant Program is to encourage integrated regional strategies for management of water resources and to provide funding, through competitive grants, for projects that protect communities from drought, protect and improve water quality, and improve local water security by reducing dependence on imported water. The IRWM Grant Program promotes a new model for water management.

The Watersheds Coalition of Ventura County, created in 2006 to oversee adoption and implementation of a local IRWM Plan, received $25 million in Proposition 50 Implementation Grant funds. This grant is helping local agencies to fund eleven high priority projects identified in the IRWM Plan; three of these projects are located in the Santa Clara River Watershed. For more information about the projects benefiting the Santa Clara River Watershed, see Bill Lykins' article on page 9 about the El Rio Septic-to-Sewer project.

Proposition 84
Region Acceptance Process

By Lynn Rodriguez, Watersheds Coalition of Ventura County – IRWM Program

In 2006 California voters approved Proposition 84, one of the largest water bonds in state history, to protect and enhance the state's water resources and continuing the precedent of integrated regional water management planning (IRWMP) established in Proposition 50 (2002). Over 1 billion dollars of state funds will be allocated through Proposition 84 to projects throughout California over the life of the bond, with local agencies investing billions more dollars in matching funds to implement these projects.

In 2007 ten agencies within Ventura County were allocated a total of 25 million dollars for implementation projects in Ventura County; three of those projects are located in the Santa Clara River Watershed (see article on page 14). As a result of Proposition 84, over $200 million dollars will be available for projects within the Los Angeles Funding Area, which includes the Watersheds Coalition of Ventura County (WCVC) IRWM region, the Upper Santa Clara River Watershed (USCRW) IRWM region and the Greater Los Angeles IRWM region. The California Department of Water Resources (DWR) will be administering those funds and managing the IRWM grant program.

As reported in previous issues of this newsletter – the WCVC and the USCRW IRWM regions each have their own regional water management groups, which serve as the stakeholder process for coordinating implementation of IRWM projects. The WCVC has three watershed committees, including the Santa Clara River Watershed Committee.

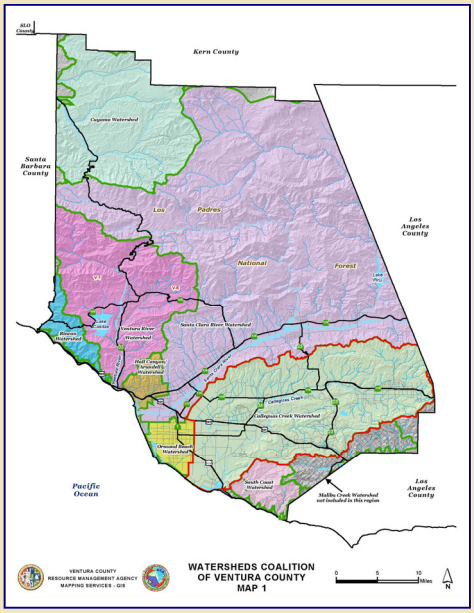
The first step in preparing for the appropriation and allocation of Proposition 84 funds was the requirement that all existing and potential IRWM regions apply to be accepted as a region by DWR. DWR has recommended that all three existing regions in the Los Angeles Funding Area be accepted for the purposes of Proposition 84, with no conditions. A final decision by DWR is still pending.

As a result of Proposition 84, IRWM regions within the Los Angeles Funding Area are working together to address IRWM issues across and between watersheds. New partnerships have been formed and joint projects are being considered. Along the Santa Clara River Watershed, which encompasses both the WCVC and the USCRW IRWM regions, stakeholders are working together to address water supply, quality, flood management and ecosystem issues. Representatives of the Santa Clara River Watershed Committee and the USCRW IRWM group have been conducting joint meetings and working together to implement projects and programs that benefit the watershed.

Prop 84 on the Way

Due to the state's budget crisis, funding for Proposition 84 has not yet been appropriated. However, the state plans to release draft IRWM Planning Standards and IRWM Grant Guidelines for review in December. Within two years of entering into a contract with DWR for projects funded under Proposition 84, regions receiving these funds must adopt or update their IRWM Plan.

Integrated Regional Water Management. *Logo courtesy of Roundtable of Regions.*



Map of Watersheds Coalition of Ventura County. *Map courtesy of Ventura County.*

Santa Clarita's Sustainable Programs

Casey Bingham, cbingham@santa-clarita.com or 661-286-4098, The City of Santa Clarita.

The City of Santa Clarita hosted its annual River Rally event on September 12, 2009. The purpose of River Rally is to invite the local community to help clean a portion of the Santa Clara River. Each year the City chooses a different section within City boundaries to concentrate the clean-up efforts. This is an excellent volunteer opportunity for scout troops, youth groups, and people of all ages.

The event was a large success and over 1,100 people showed up to assist with the clean-up. This year's site was Newhall Creek, a tributary of the Santa Clara River. Volunteers were strongly encouraged to carpool, bike, and walk to the event to reduce carbon emissions and save parking space.

Before entering the riverbed, participants completed a *tread lightly* training concerning the river, its inhabitants, and safety. This was to comply with the California Department of Fish and Game streambed alteration agreement for the event.

The City provided gloves, trash bags, snacks, and special giveaways to each participant. In total, the volunteers collected approximately 8,500 pounds of trash. Over the past 15 years, River Rally participants have collected over 294,000 pounds of trash!

In addition to the clean up, the City also hosted an Environmental Expo with over 20 exhibitors providing outreach on topics such as recycling, air quality, water conservation, pollution prevention, and open space preservation. The City had several of its own divisions host exhibitor tables to provide helpful information to City residents.

The City of Santa Clarita has implemented several programs over the past 20 years to ensure the community's health and cleanliness. The latest is the launch of www.GreenSantaclarita.com.

Recently, Santa Clarita residents' demand for a comprehensive guide on environmental issues has greatly increased. This new website aims to educate and inform residents and businesses of the many "green" programs, resources, and incentives available in Santa Clarita.

Visitors to the site will discover the site is made up of five user friendly categories. Some of the programs and resources available are listed in the sidebar.

Right: ***Volunteers lend a helping hand at Santa Clarita's annual River Rally.***
Photo courtesy of the City of Santa Clarita.

Green Store

Browse the EPA's **Green Vehicle Guide** where you can find the most fuel-efficient automobiles.

Visit the **Energy Star Products** page to see the numerous types of goods that reduce energy consumption while lowering your utility costs.

The **Residential Section** has tips on how to keep your home green and clean. Answer questions such as "what do I do with my old paint?", or "where can I recycle electronic waste (e-waste)?" There is also a large *Just for Kids* section designed for children and students.

The **Business Section** is a good source for businesses to find energy-efficient appliances, equipment, lighting, and buildings. This site directs you to rebates, incentives, services, and how to implement green business practices.

The **Green Calendar** indicates when the next green event is occurring locally and lists eco-friendly classes at the local community college. There is also information on how to become Green Building Certified.

The **Builders & Developers Section** provides a framework for sustainable development in our City. Find green building programs and standards, the latest State legislation, or information on Santa Clarita's Construction and Demolition Recycling Ordinance at www.GreenSantaclarita.com.

The Nature Conservancy—SCR Projects

Catherine McCalvin, The Nature Conservancy

The Nature Conservancy sponsored the inaugural meeting of the Santa Clara River Working Group on October 30, 2009. The Nature Conservancy now owns 13 miles, across 2600 acres, of the Santa Clara River and is actively pursuing additional acquisitions. The Conservancy, with the help of many partners, intends to undertake substantial floodplain restoration projects on these lands. In addition, the Conservancy wants to start to tackle conservation issues in the river system that cannot be addressed through acquisition. The Conservancy is convening this workgroup to bring together stakeholders and experts in a venue that fosters productive discussion that can be used in decision making and ultimately lead to conservation action on the ground. The working group can tackle challenges the Conservancy and others face as they undertake protection and restoration of the Santa Clara River system from headwaters to the estuary and encompassing its vast tributaries. The Conservancy plans to hold meetings of this working group at least quarterly and perhaps more frequently. The first meeting took on pressing issues for addressing the growing problem of invasive plants along the river and its tributaries. Subsequent meetings will continue to examine this issue as necessary and also deal with other challenges, such as recovering populations of protect species such as steelhead and least Bell's vireo, restoring floodplain habitat, and balancing.

The first meeting was attended by more than 35 people representing more than 20 organizations. The agenda for the first meeting focused on starting to tackle some of the challenges associated with controlling invasive plants in the Santa Clara River system. Noreen Murano, representing Ventura County Resource Conservation District, gave a presentation on the status of acquiring programmatic permits for the removal of arundo and tamarisk in the river system. These permits create an amazing opportunity for undertaking large-scale removal of arundo in the river system. During a brainstorming process, the group identified issues that need attention in order to take advantage of the permits and move forward with implementation. An overarching theme of many of the ideas generated centered on the need for a clearinghouse for setting goals, promoting and implementing invasive plant removal, seeking and managing funding, and holding the permits. The group then discussed possible approaches to address this need. The meeting ended with the group forming a committee tasked with flushing out a proposal on how to proceed from those draft approaches. The committee will be meeting and working on the proposal over through the end of the year and the working group will reconvene for its next meeting early in 2010. The agenda will include a presentation by the committee and additional items to be determined.

Giant Reed (Arundo donax) at roadside. *Photograph courtesy of Joseph DiTomaso.*

Tamarisk or Saltcedar (Tamarix ramosissima) in bloom. *Photograph courtesy of Joseph DiTomaso.*

If you are interested in joining the working group, please contact Catherine McCalvin at cmccalvin@tnc.org (805) 642-0345.

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.

Santa Clara River Habitat Conservation Plan

Linda Purpus, United Water Conservation District

United Water Conservation District is developing a Habitat Conservation Plan for activities in the Santa Clara River Watershed

United Water Conservation District is a public agency serving constituents within a large segment of Ventura County. United's mission is to manage, protect, conserve and enhance the water resources of the Santa Clara River, its tributaries, and associated aquifers in the most cost effective and environmentally balanced manner. In order to maintain a sustainable and reliable water supply for its constituents, United's primary objective is to preserve and protect local aquifers, particularly those located below the Oxnard Plain where threats of contamination by saline intrusion are greatest.

One of the most important roles of United's operations is providing recharge to local aquifers. This is accomplished by diverting surface water and placing it in strategically located spreading grounds where the water infiltrates through the subsurface to recharge, or replenish, the underlying aquifer. In addition to recharge activities, United also provides direct surface water deliveries to areas that are most susceptible to saline intrusion. These surface water deliveries are designed to replace groundwater pumping, and therefore result in a reduction of groundwater extractions from these sensitive regions of the aquifer.

Since its origination, United has constructed several conservation projects to meet the objectives of its mission. United developed Lake Piru as a water resource reservoir in 1955 with construction of the Santa Felicia dam. This reservoir is used to store water during wet periods allowing for it to be released in controlled amounts during dry periods when water demands are highest. In 1991, United constructed the Freeman Diversion Improvement Project to replace earthen berm diversion structures that had been in use since the late 1920s. The Freeman diversion is used to divert water from the Santa Clara River for groundwater recharge and to meet agricultural needs on the Oxnard Plain. The Freeman Improvement Project included construction of a fish ladder which is currently a subject of regulatory review. These conservation projects have successfully resulted in slowing and at times reversing saline intrusion to our local aquifers. Unfortunately, development of infrastructure within stream environments has also resulted in potential adverse impacts to sensitive species that either live in or use these environments to complete there life cycles.

(Continued on page 7)

The Santa Clara River floodplain provides habitat for the endangered Least Bell's Vireo (Vireo bellii pusillus). *Photograph courtesy of UWCD.*

The Arroyo Toad(Bufo californicus) makes its home in the floodplain of the Santa Clara River. *Photograph courtesy of UWCD.*

Steelhead (Oncorhynchus mykiss) habitat can be found in several places along the Santa Clara River and its tributaries. *Photograph courtesy of UWCD.*

Santa Clara River Habitat Conservation Plan cont.

In order to comply with environmental regulations of the Endangered Species Act, United is developing a Habitat Conservation Plan (HCP) and Incidental Take Permit application package. An Incidental Take Permit is required for any non-federal activity that may result in "take" of threatened or endangered wildlife. The definition of "take" in the Endangered Species Act includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species. The term "harm" includes impairment of essential behaviors such as reproduction. An example of how this criterion pertains to United's operations is related to the necessity to provide accessibility for steelhead migration to upstream spawning habitats.

A HCP must accompany an application for an Incidental Take Permit. A HCP is an evaluation and planning process that provides for an assessment of the activity being considered in conjunction with the potential for sensitive species to occur in the area, and therefore be impacted by the activity. The purpose of the HCP is to ensure that mechanisms are in place to minimize and mitigate for any identified adverse impacts to sensitive wildlife species.

United's HCP will assess all of United's facilities and operations. Although a key species of concern related to United's facilities is the southern California steelhead, the plan will be a multi-species HCP and will assess the potential for United's activities to impact any threatened or endangered species. Development of a HCP is an applicant driven process. Ultimately, the HCP must be approved by the resource agencies, but the HCP process allows the applicant to determine the direction for meeting regulatory requirements, and United intends to include a steelhead recovery element within the plan. During development of the HCP United will be consulting with the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game.

The HCP planning process includes multiple components and development of several products for review by the consulting resource agencies. United has drafted a detailed description of all covered activities and defined the project area for the HCP; and is currently performing an assessment of any impacts that may result from the covered activities. The next step will be to establish measures that will be incorporated in the plan to avoid, monitor, minimize, and mitigate for any identified impacts. This step must include an assurance that funding will be made available to implement each measure. As part of the HCP process, it will also be necessary to identify alternatives to each activity that may result in "take" of a species, and include an assessment of the identified alternatives and discussion related to why they will be, or will not be adopted for use.

United has fast-tracked this project, and is working to complete the HCP and Incidental Take Permit application by the end of 2010. The time required to complete the process after the application is submitted to the resource agencies will depend on the complexity of the issues identified. Additional considerations will be the detail involved for completion of the CEQA and NEPA documentation and assessment processes. The HCP process provides several mechanisms for the public to be involved. United held a public information meeting in May of this year, and has established a Stakeholder Advisory Committee to provide guidance throughout the planning process. There will also be CEQA and NEPA public scoping meetings in the future and a formal public review and comment period.

For the HCP to be successful and receive approval from the resource agencies, it must result in a finding that "take" will not appreciably reduce the likelihood of the survival and recovery of a species. Additionally, issuance of an Incidental Take Permit is based on the resource agencies determining that implementation of the measures identified within the HCP and application package will result in a net benefit to the wildlife species addressed within the conservation plan.

For questions regarding United's HCP, please contact Linda Purpus at (805) 525-4431 or lindap@unitedwater.org.

Santa Felicia Dam on Lake Piru. *Photograph courtesy of UWCD.*

A Haven for Wildlife: McGrath State Beach

McGrath State Beach was named for the McGrath family, which had extensive coastal land holdings in the Ventura area dating from 1874. Located on the western city limits of Oxnard, the two-mile-long state beach extends south from the Santa Clara River. A nature trail leads to the mouth of the Santa Clara River, designated as the Santa Clara Estuary Natural Preserve - the highest level of protection within the State Park system. The Santa Clara Estuary Natural Preserve offers a haven for birds and habitat for weasels, skunks, jackrabbits, opossums, tortoises and gopher snakes. Near the state beach entry kiosk, a small visitor center features exhibits about the area's plants and wildlife.

For thousands of years, native people, primarily the Chumash, lived in this area. In summer and fall, when the Santa Clara River slowed, the Chumash set up temporary camps and harvested the area's bounty. They used the local spiny rush plant to weave intricately crafted baskets. Human use of petroleum in this area was first documented when the Chumash used asphaltum deposits to caulk their tomol canoes, to waterproof baskets, and to affix decorative items to a variety of objects.

Nine separate ecosystems meet at McGrath State Beach: river, freshwater marsh, brackish marsh, coastal dune, ocean, sandy beach, estuary, coastal freshwater back dune lake (McGrath Lake), and riparian woodland**.** Water patterns on the land change constantly as the estuary and even some campsites are covered by water one day and left drying in the sun the next. As a result, visitors never see the same McGrath State Beach twice.

In spring and fall, visitors can see migrating and year-round native birds. Over 245 recorded bird species spend at least part of the year here. Among the rare, threatened or endangered animals protected here are the California least tern, brown pelican and least Bell's vireo. Native fish include steelhead trout and the endangered tidewater goby. Raccoons, gray foxes, great blue herons, weasels, brush rabbits, legless lizards and bobcats also live here. Plants blooming in the area are rare Ventura marsh milk vetch, once thought to be extinct, salt marsh bird's beak, arroyo willow, beach evening primrose and poison oak.

From March through September, beachgoers must watch out for the well camouflaged nests and chicks of the western snowy plover, a small endangered California shore bird. Some activities, like kite flying, are not recommended—nervous plovers may abandon their eggs or chicks if disturbed. Dogs are permitted in the campground on leash, but never on the beach.

McGrath State Beach has developed campsites with picnic tables and fire rings. Reservations can be made by calling (800) 444-7275.

McGrath Lake at McGrath State Beach. *Photograph courtesy of Calif. State Parks.*

The California Brown Pelican (Pelecanus occidentalis) can be found at McGrath State Beach. *Photograph courtesy of National Park Service.*

Ventura Marsh Milk-vetch *(Astragalus pycnostachyus var. lanosissimus)***.** *Photograph by Nick Jensen.*

El Rio Septic-to-Sewer Project

Bill Lykins, Ventura County Water and Sanitation Department

On August 12, 1999, the State of California Regional Water Quality Control Board, Los Angeles Region, adopted a resolution (No. 99-13), prohibiting the discharge of septic systems in the Oxnard Forebay. This resolution was adopted due to contamination in the groundwater supply, most notably pathogens and nitrates. To facilitate abandonment of septic systems by the homeowners in the unincorporated area of El Rio, the County of Ventura is constructing a conventional sewer system, in phases as funding became available. The work is already under way and should be finished by the end of 2011, said County Supervisor John Zaragoza, whose district includes El Rio. Failing to connect to the completed sewer system could expose homeowners to a $5,000 daily penalty.

The septic tank Prohibition affects approximately 1,600 property owners in the El Rio and Strickland Acres communities, and in the City of Oxnard city limits. The total estimated cost of the public sewer system in the unincorporated area of the El Rio community is $35.0 million. To date the project is fully funded with approximately $26.0 million in federal, state, and local funding, and the remainder in State Revolving Fund financing for 30 years. The Project is divided into eleven (11) phases. Seven (7) phases have been completed. One phase is scheduled to be completed in early 2010, with the other three phases completed before the end of 2011.

Regular public meetings are held to assist homeowners to navigate the permit process to construct sewer laterals within their private properties, said Reddy Pakala, Ventura County's Director of Water and Sanitation.

The County of Ventura Board of Supervisors have approved Community Development Block Grant (CDBG) funding to provide very low income families financial assistance to construct private sewer laterals and abandonment of the septic tank on their properties. This Grant will provide up to a maximum of $5,000 for families meeting household income limits and the property is owner-occupied. For example, a family of four with an annual family gross income of $26,250 or less would be eligible to apply for the grant funding. The property owner must also make sewer connection fees arrangement to be considered for the grant.

The County of Ventura was recently awarded $8 million in Federal American Recovery and Reinvestment Act (economic stimulus) funding distributed through the State Water Resources Control Board for the last three phases of construction.

When the entire El Rio Sewer System is completed, it will help to improve the water quality for more than 160,000 persons in the Oxnard Plain, and to help El Rio property owners to comply with the State septic tank prohibition in the Oxnard Plain.

Announcement of Phase 7 of the El Rio *Photograph courtesy of Ventura County Water and Sanitation Department.*

Trench excavation for the El Rio Project. *Photograph courtesy of Ventura County Water and Sanitation Department.*

Sewer pipe installation. *Photograph courtesy of Ventura County Water and Sanitation Department.*

University of California Research Station and Reserve on the Santa Clara River

By Tom Dudley, Ph.D., Marine Science Institute, UC Santa Barbara

Scientists from many UC campuses have conducted studies in the Santa Clara watershed for years, but there has been no dedicated facility in the area for carrying out such work nor for integrating natural resource conservation and sustainability issues…but that will soon change. A consortium of researchers and natural resource managers has proposed the concept of a UC research station on the River, and the SCR Trustee Council is moving forward with funding to develop this concept into a real facility, starting in January of this coming year. Intended to complement existing land protection and conservation efforts by The Nature Conservancy, the Coastal Conservancy and others, the objectives of this program will be to: Develop a site and administrative support for a dedicated research station and ecological reserve; Conduct collaborative research, monitoring and educational initiatives to promote biodiversity conservation and agro-ecosystem sustainability; and, Carry out ecological restoration projects that reduce the impacts of invasive species, like *Arundo donax*, and enhance habitat for native terrestrial and aquatic species.

Several locations are being evaluated for siting the station, one favored option being between Santa Paula and Saticoy, enabling a partnership with the nearby Hanson Agricultural Center managed by UC Cooperative Extension. An advisory council will soon be formed as a sounding board for building the program, with a 5-year goal of establishing a permanent facility and surrounding habitat under the aegis of the UC Natural Reserve System. This would provide the capacity to gather and analyze data for the watershed, and be a science-based resource available to managers, policy-makers and the public. The station is being proposed through a partnership between UC Santa Barbara and UC Los Angeles, and it would be formally affiliated with UCSB's Cheadle Center for Biodiversity and Ecological Restoration and the Marine Science Institute, which also conveniently administers the Santa Barbara Coastal Long-Term Ecological Research (LTER) program, which includes the Santa Clara River within its geographic extent.

More information will be forthcoming soon as we formalize the research station concept into a real program, and we will provide a detailed update in the next issue of the Watershed Times.

For further information or to become involved in this program, please contact Tom Dudley (UCSB Marine Science Institute; tdudley@msi.ucsb.edu) or Phillip Rundel (UCLA Ecology & Evolutionary Biology; rundel@lifesci.ucla.edu).

Habitat to be included in the UC Natural Reserve System.

Potential sites for the UC Research Station on the Santa Clara River.

The UC Research Station will promote agro-ecosystem sustainability.

Restoration projects that will enhance habitat for aquatic species such as steelhead will be carried out at the UC Natural Reserve.

Get Involved in the Watershed: Support California Native Plant Society's Channel Islands Chapter

For more information, contact CNPS president David Magney at president@cnpsci.org.

Get involved with the **California Native Plant Society** and make a difference. The **California Native Plant Society** is a non-profit organization largely run by volunteers. CNPS works to protect California's native plant heritage and preserve it for future generations. CNPS promotes sound plant science as the backbone of effective natural areas protection. They work closely with decision-makers, scientists, and local planners to advocate for well-informed and environmental friendly policies, regulations, and land management practices. Their nearly 10,000 members work to promote native plant appreciation, research, and conservation through 33 chapters located statewide. The CNPS Channel Islands Chapter has several notable upcoming events:

- On Saturday, November 14 from 9:00 am to 2:00 pm, the Chapter will host its Fall Native Plant Sale with guest speaker Carol Bornstein giving a talk on native plant landscaping. The sale will be held at Plaza Park in downtown Ventura.
- The CNPS Channel Islands Chapter is undertaking an initiative to inform the public about the globally significant hotspot of biodiversity that we all live in right here in the Ventura/Santa Barbara County Area, develop opportunities for people to directly contribute to the conservation of this hotspot, and provide local planning authorities and decision makers with data necessary to conserve overlooked but biologically important elements of the California Biodiversity Hotspot. On Wednesday, December 2 at 7:30 pm at the E.P. Foster Library Topping Room, biologist David Brown will give a talk on *Exploring Our California Biodiversity Hotspot*. David will describe the proposed initiative and the opportunities for exploration, celebration, and conservation of our local part of the California Biodiversity Hotspot that it will hopefully provide.
- On Saturday Nov. 7, 8:30 am - ~2 pm CNPS will be holding one of their monthly *Walk and Talk* hikes to Tangerine Falls and West Fork Cold Springs Trail in Montecito. William Abbott will lead the hike. The group will explore the burn area and look for any early fire-followers from either the Jesusita or Tea Fires. For more information on monthly *Walks and Talks*, please visit the website at http://cnpsci.org.

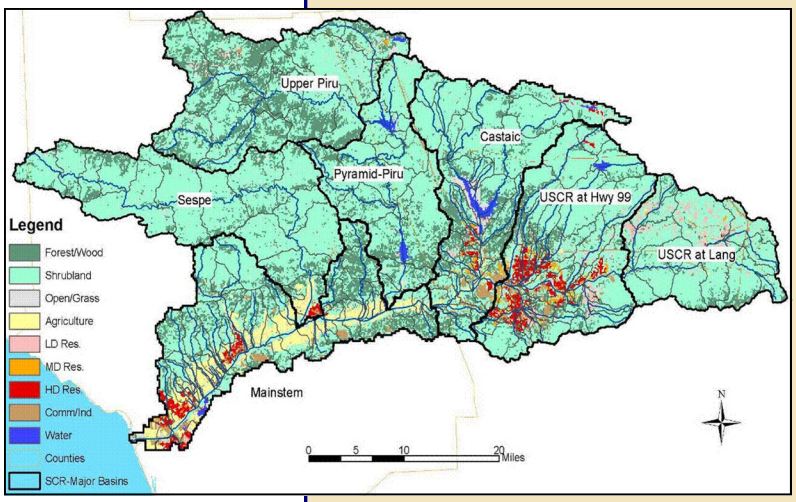
Beach Primrose** (Camissonia cheiranthifolia), **a California native, can be found at the Santa Clara River Estuary.

The mission of the California Native Plant Society is to increase understanding and appreciation of California's native plants and to conserve them and their natural habitats through education, science, advocacy, horticulture and land stewardship.

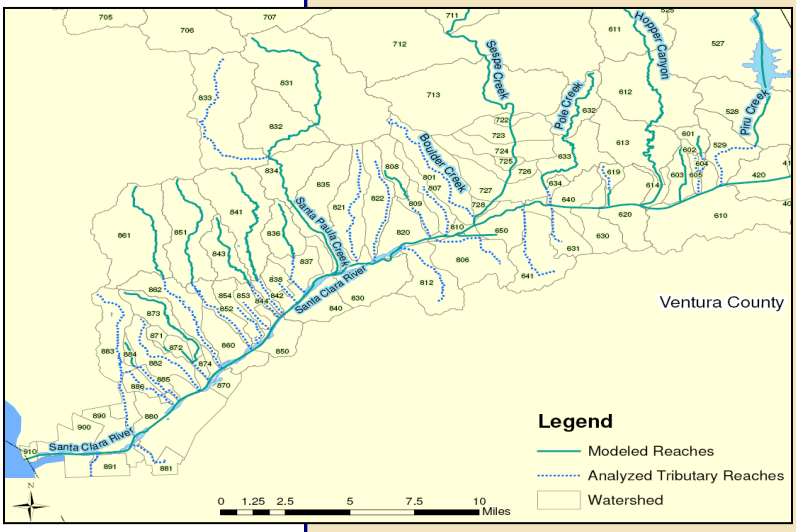
Santa Clara River Watershed Feasibility Study – An Update

Zia Hosseinipour, Ventura County Watershed Protection District.

A comprehensive watershed protection plan for the Santa Clara River 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 properties from flooding. Ventura County Watershed Protection District (VCWPD), in conjunction with U.S. Army Corps of Engineers and Los Angeles County Public Works Department, have developed a Project Management Plan (PMP) for Santa Clara River watershed that includes a feasibility study as one of its major components.



The purpose of the SCR watershed feasibility study as described in the 2003 Project Management Plan is to determine the impact of the upstream developments, specifically in LA County on the present natural state of the river in Ventura County. To this end, a number of studies have been initiated and are currently underway or will be conducted within the next couple years to develop the necessary baseline data and analytical tools that can be used to support the feasibility study goals. These studies include:



Development of a comprehensive hydrologic model that uses the latest topographic, monitored meteorology and hydrology data, stream geometry, and land use information to assess the existing, natural and future conditions of the watershed. The hydrology model can be used to evaluate the baseline and changes to the water quality and pollutant loadings as a result of developments or any proposed regional solutions to flooding and water quality/habitat issues. This model will also provide the flow data needed as input for the hydraulic and sediment transport models to be developed later. The hydrology model has been in development since 2007 and was recently completed and a draft report released. The draft report is posted on the VCWPD web site for download. The software used to develop the hydrology model is the US EPA

(Continued on page 13)

As shown in the figures above, the recently completed hydrologic model of the SCR watershed uses the latest land use information and hydrologic/ meteorologic data collected by the VCWPD and other agencies including USGS and NWS. *Illustrations courtesy of Ventura County Watershed Protection District.*

Santa Clara River Watershed Feasibility Study – An Update cont.

(Continued from page 12)

sponsored code HSP-F (Hydrologic Simulation Program-Fortran) that has been widely used in the US for watershed modeling and stream water quality assessment in the past 20 years. The consultant provided 2-day training/workshop on the model database and simulation results to the VCWPD and ACE staff on October 20 and 21, and subsequently presented an overview of the modeling results to the SCR watershed council meeting on October 22, 2009 in Santa Paula. This study was managed and funded by the VCWPD.

Development of a hydraulic model of the SCR to simulate the behavior of the river during storm events (flooding) and the efficacy of the flood control facilities as well as the operations of the water supply/storage facilities. This model will use the information generated by the hydrology model described above. The Army Corps of Engineers (ACE) will sponsor the development of the hydraulic model using the HEC-RAS code developed and maintained by ACE. The hydraulic model is expected to be completed by the fall of 2010.

Geomorphology study of the watershed to study the dynamic processes of land surface formation, erosion and sediment transport mechanics. The study will focus on the character, dynamics, and variability of sediment generation and transport/ storage, and channel change under historic and current conditions. It will also shed light on how between-reach differences in geology, channel morphology, and sediment transport control the channel system? Finally, human development impacts on river morphology and implications of the impacts for future river management will be evaluated. This study is broken up into two components. The lower SCR geomorphology study that was funded by the nature conservancy and managed by WPD and was completed in 2008. The upper SCR geomorphology study that is funded by the Los Angeles County Flood Control District and being managed by WPD and is currently underway expected to be completed in the fall of 2010. The findings from these studies are useful for the riverine sediment transport modeling of the SCR to be initiated in late 2010.

Development of the Sediment transport model funded by the Los Angeles County Flood Control District and expected to start sometime in mid 2010. Upon completion of these studies all the necessary tools for the feasibility study will be available including the framework for water quality assessment and TMDL development for constituents of interest to stake holders.

Olivas Adobe: *Historic Hacienda on the Santa Clara River*

Olivas Adobe, Ventura California.
Photograph courtesy of Los Angeles.

Near the mouth of the Santa Clara River in Ventura sits the Olivas Adobe Historical Site situated on the historic land grant of Rancho San Miguel. This site includes a 160-year-old adobe hacienda completed by local Chumash people in 1849 during the California Rancho period. The home was fashioned after the old Monterey style and is decorated with period furnishings. The grounds include a rose garden, an herb garden, and several 110-year-old fuchsia plants that adorn the adobe front.

The Olivas Adobe was the home of Raymundo Olivas, who was born in 1809 in Los Angeles. The seventh child of a poor family, Raymundo joined the Mexican Army in California at the age of sixteen and was assigned to the Presidio of Santa Barbara as a Lancer. Raymundo met his future wife, Teodora Lopez, in Santa Barbara. They were married on November 6, 1832, and together they had 21 children - eight girls and thirteen boys. In return for their service to the State, Raymundo and his friend, Felipe Lorenzana, were granted 4,670 acres by Mexican Governor Juan B. Alvarado. Raymundo began ranching on his land in 1847.

The main house for the Rancho San Miguel was one of the few two-story haciendas in Southern California and one of the most impressive homes in the Santa

(Continued on page 16)

Santa Clarita Valley Sanitation District's Alternative Compliance Program

Following scientific studies and the reduction of chlorides from automatic water softener removal, the Santa Clarita Valley Sanitation District will implement the Alternative Compliance Program to reach state-mandated chloride levels for the Santa Clara River. The program will reduce chloride levels in the river to protect aquatic life, salt sensitive agriculture and groundwater and also provide regional benefits to the Santa Clara River watershed, promoting increased water reuse in Los Angeles County and providing increased water supply and preventing sea water intrusion in Ventura County.

The Alternative Compliance Program includes a number of elements: (1) a new water disinfection process at the WRPs, (2) a small-scale desalination facility to remove salt at one of the WRPs, (3) supplemental groundwater pumping to the river to reduce chloride levels, (4) support for water recycling, and (5) the implementation of new water supply wells and pipelines.

The current chlorine-based disinfection process used at the WRPs contributes about 10% of the chloride in the recycled water. In order to remove this source of chloride and reduce the chloride levels in the recycled water, the Sanitation District will be changing the recycled water disinfection process to ultra violet (UV) light disinfection.

As part of the program, the Sanitation District has committed to constructing and operating a small-scale desalination facility. Limiting the size of the facility will allow for local disposal of the resulting brine waste produced during the desalination process through deep well injection into old oil fields. A larger desalination facility would have required an expensive 43-mile brine line from the WRPs to the Pacific Ocean. The small desalination facility will still allow the Sanitation District to remove a significant amount of chloride from the recycled water, allowing the Sanitation District to comply with chloride standards in the river during normal conditions. When not needed to comply with the chloride standards in the river, the high quality water produced at this facility will be used in Ventura County to blend with extracted high chloride groundwater from the impacted downstream groundwater basin, which will in turn be used to provide a water supply benefit to Ventura County.

Under normal conditions, the small desalination facility will be enough to help the Sanitation District comply with chloride standards in the river. However, during periods of extreme drought conditions, the water quality in the river could still exceed the new standards. During these infrequent times, the Sanitation District will procure supplemental local groundwater that is low in chloride that will be used to further reduce the chloride levels in the river. The Sanitation District will enter into agreements to participate in a water banking project (s) to import potable water to the Santa Clarita Valley water suppliers to replace the local water supply needed for supplemental water.

The Sanitation District will support the expansion of recycled water reuse in the Santa Clarita Valley by working with the local water purveyors. The Sanitation District will initiate recycled water contracts with the water purveyors and make available high quality recycled water that meets Department of Public Health requirements for reuse. Due to increasing demands for water, limitations on imported supplies and persistent droughts, recycled water reuse is becoming an integral part of the water picture for Los Angeles County. The goal of the Sanitation District is to recycle as much water from its treatment plants as possible to meet the region's water needs.

As mentioned above, when excess high quality water from the desalination facilities is available, it will be used in Ventura County to blend with extracted high chloride groundwater and export it from the

(Continued on page 16)

A small-scale desalination facility similar to this example will be installed in the Santa Clarita Valley Sanitation District. *Photograph courtesy of LACSD.*

Valencia Water Company – Water Quality Improvement Program

By Keith Abercrombie, Valencia Water Company

Valencia Water Company has over 30,000 metered connections and provides its customers a mix of groundwater and imported State Water Project water. Valencia has been serving customers since the mid 1960s. Consistently, its single greatest water quality complaint is that of 'hard water.' Typical total hardness levels exceed 400 mg/l as calcium carbonate in Valencia's groundwater and the hardness levels of the imported surface water are around 120 mg/l.

To address customer concerns over hard water, Valencia has developed and is implementing a Water Quality Improvement Plan. Valencia has been looking for a process to soften groundwater that would not have many of the drawbacks of existing technologies. For instance, reverse osmosis treatment, while very effective, has two major issues; the process is extremely energy intensive, and it generates a relatively high volume of waste – 'brine.' For many inland communities, the brine disposal is oftentimes the most significant issue. Likewise, Ion Exchange systems also create a 'brine' waste stream.

In 2004/2005, Valencia learned of a technology called "Pellet Softening." The process which had been used in The Netherlands for over 30 years looked promising. Fairly simple, the technology involves raising the pH of the water through a fluidized bed of sand. The calcium in the water then precipitates out of solution and crystallizes onto the grains of sand, forming "Pellets." The 'softened' water then has its pH lowered and is filtered before being sent to customers. The pellets are periodically removed and have reuse potential in industries from steel, to textile, to agriculture. The process also uses a very minimal amount of water, delivering over 99.8% of the treated water to customers.

Valencia conducted a small scale pilot study on two of its wells in 2005 to successfully confirm the effectiveness of the process with Valencia's groundwater. Valencia next requested and obtained approval from the California Public Utilities Commission (CPUC) to install a full scale Pellet Softening plant at one wellsite. This 'demonstration project' was placed into service in September, 2008 and the pre-softened water was delivered to a neighborhood of approximately 430 homes. Throughout this still ongoing project, Valencia has evaluated customer acceptance, optimized the treatment processes, and evaluated the benefits and costs of the project. The favorable results have led Valencia to seek approval from the CPUC to expand the project to include two more softening plants within the next three years. Valencia's request is currently working its way through the CPUC approval process. Full build-out over a ten year period, will result in a total of 7 additional plants beyond the existing demonstration site.

Valencia's Pellet Softening Project has proven that the process will deliver water that is desirable to customers at a reasonable cost. The process uses little energy and is very efficient, delivering 99.8% of all water pumped to end-users. Broader environmental benefits include chloride reduction in wastewater as customers switch off their individual self-regenerating softeners in favor of Valencia's pre-softened water, which results in improved water quality of discharges from local wastewater treatment plants. This improved water quality further benefits recycled water use. Valencia's Pellet Softening Project will provide improved water quality to its customers and will further enhance the region's efforts to improve overall water quality.

Relative size of calcium pellets which are byproducts of Valencia Water Company's Pellet Softening technology.

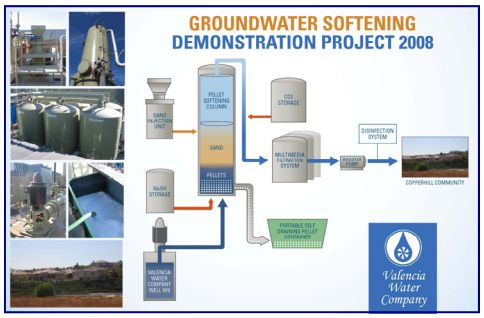
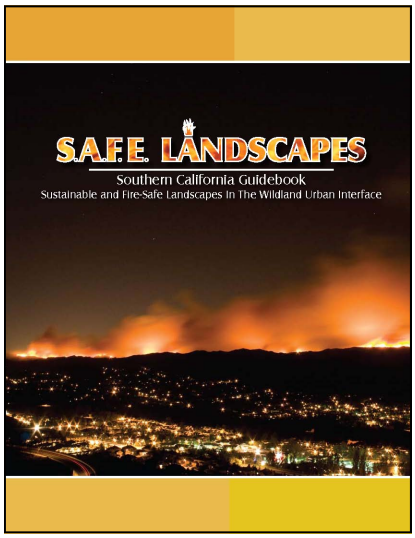


Diagram of the pellet softening process. *Graphic courtesy of Valencia Water Company.*

SAFE Landscapes on the Web

The SAFE (Sustainable and Fire SafE) Landscapes Southern California Guidebook, and our overhauled SAFE Landscapes website are now online! The website and guidebook assist wildland urban interface homeowners create and maintain fire-safe, environmentally-friendly landscapes throughout the year by starting with the structure, choosing fire-resistant plants, and arranging and maintaining vegetation properly.



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 learn more about the SAFE Landscapes Program and download the Guidebook, please visit http://ucanr.org/safelandscapes.

Alternative Compliance Program - cont.

(Continued from page 14)

basin. The Sanitation District will construct the necessary facilities, water conveyance pipelines and groundwater extraction wells, to facilitate this project. By building these facilities, the Sanitation District will create the ability to maintain a long term salt balance in the basin by removing the high chloride groundwater, and allow the basin to quickly recharge with higher quality surface water resulting from the higher quality recycled water discharged at the WRPs as well as local storm flows. The blended extracted groundwater and desalination water will then be conveyed further downstream in the river where it will be used to offset groundwater pumping in the Oxnard Plain that is currently leading to seawater intrusion problems in its underlying groundwater basins. Ultimately, the cumulative benefits provided the Alternate Compliance Program would provide greater overall benefits to all Santa Clara River stakeholders and provide considerable savings to the Sanitation District's ratepayers.

Olivas Adobe cont.

(Continued from page 13)

Clara River Valley. In 1848, when gold was discovered in California and the population exploded, Raymundo's cattle herd became extremely profitable. Raymundo was able to finish the second story of his home and became known for his elaborate parties. For many years the Rancho prospered. Droughts in the 1860s destroyed many of the cattle empires, but Don Raymundo survived by raising sheep. In 1864, his partner Felipe Lorenzana sold his half of the Rancho. The death of Don Raymundo in 1879 was the beginning of the end for the Olivas' fortune. Rebecca Olivas, youngest daughter of Don Raymundo, was the last member of the family to live at the adobe. Though some family members retained pieces of the land grant until as late as 1968, the house was sold in 1899. After passing through many hands, the adobe was purchased by yeast king Max Fleischmann, who restored the building in 1927. Upon his death, Fleischmann deeded the adobe and a large land parcel to the City of Ventura. This parcel included 450 acres that extended from the Olivas Adobe to the ocean, where the Olivas Golf Course, the San Buenaventura Water Reclamation Facility and the Harbor are now located. It opened as a museum in July, 1972.

The Olivas Adobe Historical Park is operated by the City of Ventura and is serviced by the Olivas Adobe Historical Interpreters. It is on the National Register of Historic Places and is State Historical Landmark No. 115. Olivas Adobe is said to be haunted by Doña Teodora. Is this true? Visit the Adobe and draw your own conclusions. Olivas Adobe is located at 4200 Olivas Park Drive, Ventura, CA 93003. The grounds are open daily from 10:00 a.m. to 4:00 p.m. The buildings are staffed and open for tours on Saturdays and Sundays. For more information, please call 805-658-4728.

University of California Ventura County Research Symposium

Join the University of California for a program of informative, thought-provoking presentations about research into the future of agriculture in Ventura County. Learn how the university and its research staff, in collaboration with other agencies and organizations, is helping local farming overcome significant challenges to its viability while remaining a thriving part of the county's landscape, economy and culture. The University of California Ventura County Research Symposium will be held on **Tuesday, Dec. 1, 2009** from **8:00 a.m. to noon** at **Oxnard Performing Arts & Convention Center,** 800 Hobson Way, Oxnard, CA 93030.

In addition to posters and displays describing numerous local research projects and investigations conducted by UC staff in Ventura County, the program will feature presentations on the following:

- A comprehensive analysis of the role of agriculture in Ventura County's economy, with projections for the future.
- New crop varieties that can help Ventura County growers keep their profitable edge in the global marketplace.
- Emerging pests and pathogens, and what is being done to combat them.
- Carbon dioxide: A new tool to increase the yield of red raspberries

The symposium is intended for growers, policy makers, community leaders, educators, journalists and anyone else who cares about the future of farming in Ventura County. It is sponsored by the University of California Cooperative Extension and UC Hansen Trust.

There is no charge to attend. **Pre-registration is required.** Please register at http://groups.ucanr.org/Hansen/Ventura_County_Research_Symposium. Please direct registration and general questions to Susan Latham at 805-525-9293 x205.

For more information, contact Jose Fernandez De Soto, UC Hansen Trust director, at (805) 525-9293, Ext. 208, or Rose Hayden-Smith, county director for UC Cooperative Extension, at (805) 645-1466.

UC Cooperative Extension Master Gardeners adjust irrigation at Hansen Agricultural Learning Center.

Spring 2010: Watershed U - Ventura River

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.

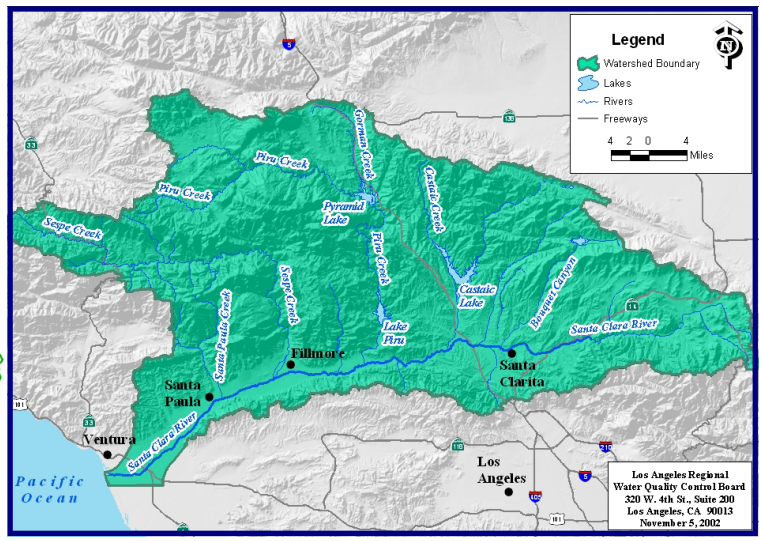
Watershed U. - Ventura River is a course for those who live, work, or spend time in the Ventura River Watershed and are interested in understanding how the river works for you, and how you can help improve the river. Each session will focus on different topics including history, geology, water supply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

Watershed U is a 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. 22 - May 27, 2010 from 4:00 - 7:00pm at Patagonia's Grand Ballroom. Watch for more details coming soon at http://ucanr.org/watershedu_ventura.

SANTA CLARA RIVER WATERSHED TIMES
Fall 2009

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.

In This Issue:

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