Spring 2006

The California
Runoff Rundown

A NEWSLETTER OF THE WATER EDUCATION FOUNDATION

Watershed Moments:
NPS Linkages with Watershed Management

By Glenn Totten

The emergence of nonpoint source water pollution as California's Number 1 water quality issue has coincided with another important trend: collaborative watershed management. As a result of the convergence of these two trends, nonpoint source water pollution problems in California increasingly are being viewed in a watershed context that allows diverse stakeholders to participate in development of collaborative solutions.

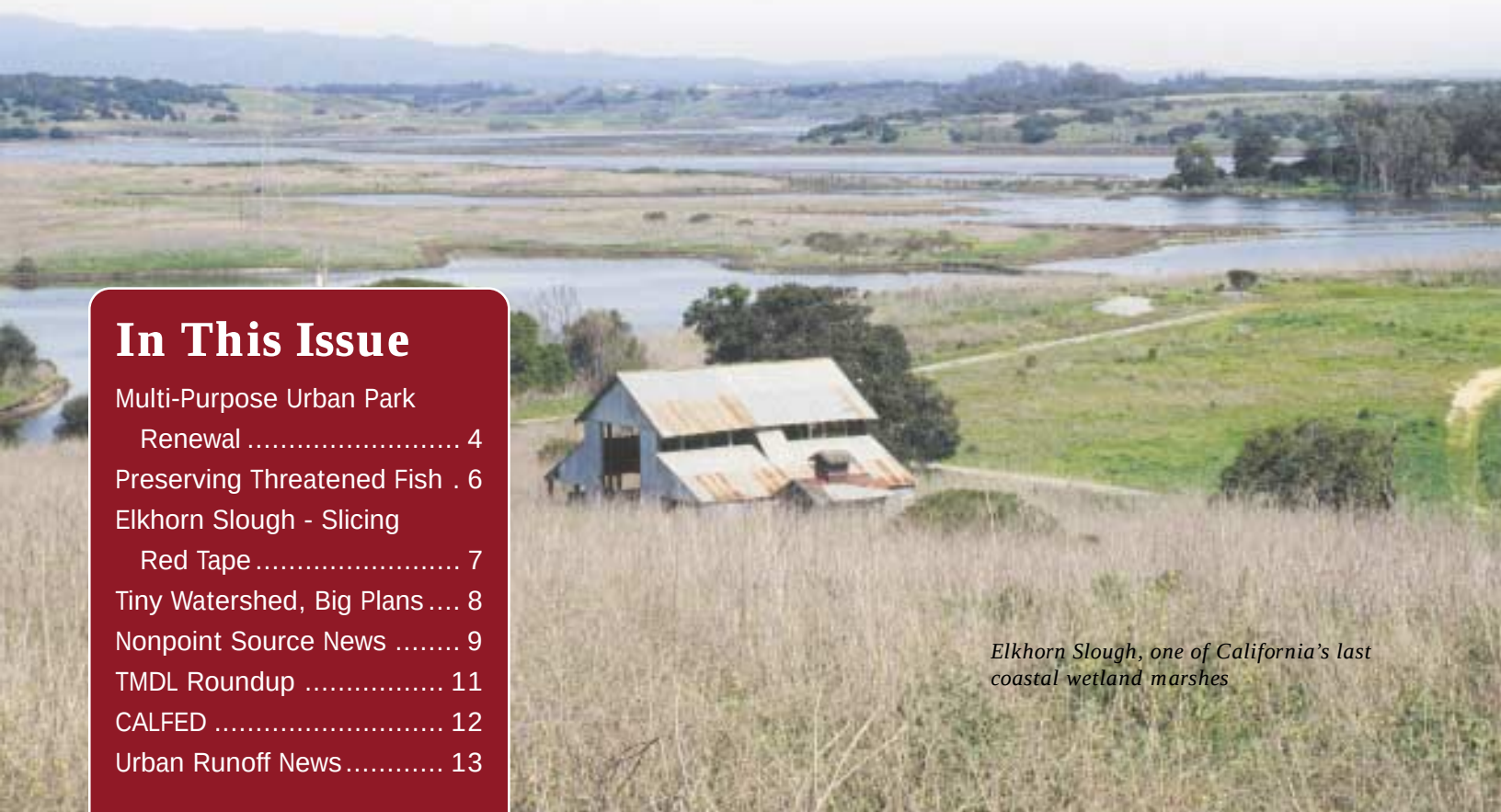
Traditionally, water pollution problems have been addressed on a piecemeal basis, often with attention focusing on individual contaminants from identifiable sources, known as point sources, such as refineries or factories. Once standards were put into place to regulate discharges of those contaminants, it became clear that there were other activities contributing to water pollution that didn't necessarily come from point sources. Those activities, such as urban and agricultural runoff, came to be known as nonpoint source water pollution, and today they are California's leading sources of water pollution.

By their diffuse nature, nonpoint sources are resistant to the traditional kind of regulation that emphasized control of specific sources of water pollution. How could these scattered sources that together constitute California's biggest water pollution challenge best be controlled?

Almost concurrent with the recognition of the importance of nonpoint sources was the emergence of collaborative watershed management strategies as a way of addressing many water problems

Continued on page 3

In This Issue



Elkhorn Slough, one of California's last coastal wetland marshes

Credits

Editors
Rita Schmidt Sudman
Sue McClurg

Writers
Glenn Totten
Gary Pitzer

Editorial Assistance
Diana Farmer

Photos
Jeff Beehler, SAWPA
California Department of Water Resources
Emma Gutzler, Urban Creeks Council of California
Los Angeles County Department of Public Works
State Water Resources Control Board
Charles Watkins Collection, UC Berkeley

Design and Layout
Curt Leipold, Graphic Communications

The Water Education Foundation thanks all the sources and experts who reviewed this newsletter for balance and accuracy.

Water Education Foundation
717 K St., Suite 317
Sacramento, CA 95814
(916) 444-6240
Fax (916) 448-7699
e-mail: feedback@watereducation.org

Web page: www.watereducation.org

The California Runoff Rundown is published by the Water Education Foundation. The mission of the Water Education Foundation, an impartial, non-profit organization, is to create a better understanding of water issues and help resolve water resource problems through educational programs. *The California Runoff Rundown* is published through a grant from the State Water Resources Control Board with funding from the U.S. Environmental Protection Agency under the Federal Nonpoint Source Pollution Control Program (Clean Water Act Section 319). Its contents do not represent positions of the State Board or U.S. EPA, and neither organization has endorsed the contents.

Dear Readers,

It has become almost cliché to speak of a "watershed moment," but California is in the midst of watershed decades. Beginning about 1980, collaborative watershed management became recognized as a way of addressing water quality problems by emphasizing consensus building among stakeholders rather than confrontation between regulators and the regulated community.

Since then, encouragement from the state and federal governments has spread the watershed approach throughout California. About 300 watershed partnerships are operating in California today, focusing on watersheds as small as a one-mile creek in San Francisco's East Bay Area and as large as the CALFED Bay-Delta solution area. A common thread running through each of them is an effort to involve stakeholders who will decide what priorities will be pursued in the watershed.

Watershed management programs can embrace any kind of water-related issue within a watershed, but increasingly they are focusing on water quality. This issue of *The California Runoff Rundown* looks at the growth of the watershed movement in California and projects or plans that yield real water quality benefits in watersheds throughout the state. The case studies in this issue indicate the adaptability of watershed management to a wide range of watershed conditions and water quality problems. ◆

Email your story ideas to Sue McClurg, smcclurg@watereducation.org

Watershed Moments

CONTINUED FROM FRONT PAGE

within a single watershed or part of a watershed. Besides taking a holistic approach, collaborative watershed management has the additional advantage of being grassroots-directed, in contrast to the top-down regulatory approach taken for point sources.

What is watershed management? A watershed is the land area that drains to a common waterway, such as a stream, lake, estuary, wetland or, ultimately, the ocean. It may occupy tens of thousands of square miles, as does the Sacramento-San Joaquin Bay-Delta system, or it may be a tiny creek that drains a few square miles of urban area. Watershed management is a process for addressing the water resources issues within a watershed, and it may range from actions by a single landowner to collaborative efforts involving dozens of stakeholders.

Watershed management started about a century ago, usually as efforts by individual landowners such as farmers or timber companies to manage their lands for sustainable yields by preventing erosion. The New Deal-era Soil Conservation Service (SCS, now the Natural Resources Conservation Service) was created in part to promote these kinds of watershed management activities, and the spirit of that work has continued through Resource Conservation Districts (RCDs), and state and local conservation agencies.

Realizing that the individual landowner model didn't work for all watersheds, agencies such as SCS and the U.S. Forest Service, which had pioneered watershed management, began promoting cooperative watershed management in the 1950s involving more stakeholders. From these efforts evolved the collaborative watershed management programs seen today.

Because each watershed has characteristics that make it unique, the groups that form around watershed issues may have distinctive areas of focus, as well. There are general guidelines for how to form and operate a watershed management group, but each group will have differences reflecting the concerns of its stakeholder members.

The origins of the collaborative watershed movement date back to the 1950s in California. That was the beginning of public-private partnerships that promoted concepts that later would be called watershed management, according to Sari Sommarstrom, a consultant and long-time observer and evaluator of watershed management programs. Watershed management has gotten a boost since the late 1980s, when the U.S. Environmental Protection Agency (EPA) began to broaden its focus from regulating point-source water pollution toward a watershed approach, she said. Today, about 300 watershed partnerships exist in California, about a third of which are collaborative, multi-stakeholder groups working on issues in their watersheds.

> **"Watershed management is a shift . . . to dealing with causes"**
>
> *– Sari Sommartrom*

"Watershed management is a shift from dealing with the symptoms to dealing with the causes," said Sommarstrom. Many watershed management programs today are oriented toward improving water quality, she said, but they can take on other issues such as fuel management in forested areas or water supply. One common thread running through voluntary or collaborative grassroots watershed management programs is that stakeholders decide which problems to address and how best to address them.

While advocates of watershed management concede that consensus is sometimes an elusive goal, taking time to build, it usually is worth the effort to strengthen support among stakeholders for the projects undertaken in the watershed. The Cooperative Resource Management Process (CRMP) emphasizes consensus in watershed management rather than confrontation, though it is not representative of watershed management broadly defined, Sommarstrom said.

The rising interest in collaborative watershed management in the 1980s coincided roughly with the recognition of nonpoint source activities as the leading water pollution problem in California. The two concepts have matured in tandem, with collaborations in watershed management proving to be a useful framework within which watershed problems can be identified, assessed and addressed.

The watershed approach also has become an integral part of the regulatory system. Regional Water Quality Control Boards aggressively have adopted total maximum daily load (TMDL) requirements to reduce contaminants. TMDLs or the threat of their adoption are credited by some with encouraging watershed stakeholders to pursue collaborative compliance strategies.

Promoters of the collaborative watershed approach tout its advantages of bottom-up decision-making, its ability to involve diverse groups of stakeholders and the leveraging of resources made possible by collaboration.

The basic steps in the collaborative watershed planning and implementation process are these:

- Build partnerships by identifying key stakeholders and issues of concern, set preliminary goals and conduct public outreach;
- Characterize the watershed using existing data and identi-

CONTINUED ON PAGE 4

CONTINUED FROM PAGE 3

fying data gaps, analyze the data and identify causes and sources of water pollution to be controlled;
- Finalize goals and identify solutions;
- Design an implementation program with a schedule and interim milestones to be achieved and monitoring and evaluation to measure progress;
- Implement watershed plan using management strategies, monitoring and information/education activities;
- Measure progress and make adjustments based on evaluation of results shared with stakeholders.

The EPA lists about 34,000 impaired waterways nationally in the U.S., with more than 59,000 identified impairments. The most common impairments are from metals, pathogens, nutrients and sediment. Some waterways may have multiple impairments (see EPA Handbook for Developing Watershed Plans to Restore and Protect Our Waters, www.epa.gov/owow/nps/pubs.html). Collecting and analyzing available data on waterway impairments is a first step toward understanding watershed problems and identifying priorities for action.

Common nonpoint sources of water pollution in watersheds include natural and human-induced erosion, runoff from agricultural and silvicultural operations, urban runoff, boating activities, malfunctioning septic systems and abandoned mine drainage.

Section 319 of the Clean Water Act provides grant funding to restore impaired waters where there are watershed plans in place that support a comprehensive approach. To be eligible for grant funding, EPA requires that nine elements be addressed in watershed plans. These elements are outlined in EPA's grant guidance, available at www.epa.gov/owow/nps/cwact.html. California also has provided funding for watershed programs through several state bond issues. For instance, Proposition 40 approved in March 2002 provided $300 million for projects to protect watersheds and water quality.

From humble beginnings, watershed management has evolved into an important platform for achieving improvements in water quality and enhancing habitat. This issue of *The California Runoff Rundown* highlights how nonpoint source water pollution issues have been addressed in the broader context of watershed management. These case studies illustrate the different ways in which watershed management partnerships have arisen throughout California and the various kinds of projects they have identified or undertaken to reduce nonoint source water pollution.

Infiltration units in Sun Valley Park will collect runoff

Multi-Purpose Urban Park Renewal

A good illustration of how the watershed approach can achieve multi-purpose results is the Sun Valley Park project. This project is part of the Sun Valley watershed, which is a subwatershed of the Los Angeles River north of Hollywood. In addition to treating polluted stormwater runoff, the project fills an important gap in the local flood-control system, recharges local groundwater, provides community recreation and reestablishes native vegetation, according to Vik Bapna, watershed manager for the Los Angeles River and Harbor areas for the Los Angeles County Department of Public Works (LACDPW).

The Sun Valley watershed is located in a highly urbanized area about 14 miles northwest of downtown Los Angeles that is not served by one of the area's major flood-control systems. With most of the land surface paved over, even minor rainfall events have been known to cause flooding of local streets.

A Sun Valley Watershed Stakeholders Group began meeting in 1998 under auspices of the LACDPW Watershed Management Division. Drawing its membership from concerned local citizens, businesses, environmental groups and state and local agencies, the group looked at four sample alternatives to a simple storm drain expansion project that could provide multiple benefits to the community.

The Sun Valley watershed occupies a strategic point in a small part of the larger Los Angeles River watershed. Runoff from a 49-acre, mostly residential area above the park periodically overwhelms the drainage system and for years had defied efforts to solve the problem. The stakeholders' group showed that in addition to controlling flooding, there was interest in improving water quality, increasing recreational opportunities and promoting native vegetation.

After several years of stakeholder meetings, the group developed the Sun Valley Watershed Plan that would address simultaneously those several problems in the overall 2,800-acre watershed. The first of 18 components, the Sun Valley Park project began construction in August 2004. The heart of the project is two underground infiltration basins that together cover 1.5 acres beneath Sun Valley Park that Bapna said are designed to deal with what the county's criteria defined as a "capital flood event," which generally exceeds the Federal Emergency Management Agency criteria for a 100-year flood event. Runoff from the mostly residential area north of the park is directed to the infiltration basins, where it undergoes treatment to remove trash, sediment, dissolved metals and oil and grease. With the contaminants removed, treated water goes to the infiltration basins, where the system recharges on average about 30 acre-feet of water per year to a local groundwater aquifer, he said.

Some Resources for Developing and Implementing Watershed Programs

EPA's Draft *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*, available for download at **www.epa.gov/owow/nps/pubs.html.** Link also explains how to order print copy.

Watersheds: Working with Local Partnerships, a report to the Legislature by the California Resources Agency (2002), includes an explanation of watershed management efforts in California and recommendations for strengthening watershed programs, and can be downloaded from **http://cwp.resources.ca.gov/leg_hist2.html**

California Watershed Assessment Manual (CWAM), a toolbox for conducting watershed assessments available at **http://cwam.ucdavis.edu**

California Watershed Network, an organization working to develop a coordinated network of community-based watershed management in California, **www.watershednetwork.org**

At the south end of the park, reverse-grade piping was installed in curbs to redirect runoff water to the park, where vegetated swales filter out sediment and contaminants before the water recharges the groundwater aquifer through dry wells, Bapna said.

"It takes care of flood control, water quality and groundwater recharge," Bapna said of the project's multiple benefits. Besides the water-related benefits, the project also restores native vegetation and improves recreational facilities in an area that has been underserved by parks, he said. The infiltration system can handle an inflow of up to 35 cubic feet per second.

One of the challenges faced by the Sun Valley Park project was to harmonize the plan to accommodate differing interests of stakeholders, Bapna said. Some in the community wanted the park to have facilities for active recreation such as soccer, but others favored open space and passive recreation opportunities such as picnicking. The final plan blended the two goals with the flood control and water quality improvements, he said.

The Sun Valley Park project is an enhancement to the concept of an earlier effort, Pan Pacific Park, a flood-control project that was built in the 1980s, Bapna said. Located in the mid-Wilshire area south of Beverly Hills, Pan Pacific Park functions as both a park and as a detention facility for flood waters when needed. Its bowl-like structure allows it to store water that later drains back into the storm drain system, he explained.

Development of the Sun Valley Watershed Plan was funded through the LACDPW's $1.6 million in flood control funds and $780,000 in state funds from CALFED. The department also was authorized to set aside about $8 million per year for five years to finance construction of the other projects within the plan. Funding for the Sun Valley Park project also came from a number of other sources including $5.2 million from LACDPW, $412,000 from Proposition 12 bond funds, $220,000 from the state Department of Water Resources and a commitment from the city of Los Angeles to provide a majority of funding for maintenance of the park. ◆

Contact: Vik Bapna, Watershed Manager, Los Angeles River and Harbor Areas, Los Angeles County Department of Public Works (626) 458-4363. More information on the Sun Valley Park project is available at www.sunvalleywatershed.org

Seining for suckers in the Santa Ana River

Preserving Threatened Fish

When the Santa Ana sucker was listed as a threatened fish species in 2000 under the federal Endangered Species Act, stakeholders in this important urban watershed seemed headed for conflict over how to reconcile the need to rebuild the sucker's numbers and habitat with the many other competing uses of its river ecosystem. But instead of fighting it out, stakeholders opted to work it out by forming the Santa Ana River Sucker Conservation Team.

Anticipating the listing, the team initially consisted of public agencies in the watershed that came together in 1997 to work with federal agencies and others to recover the sucker. Since then, the team has done extensive work assessing the sucker's status within the context of the many uses of the Santa Ana River that could be affected by the listing or designation of critical habitat. The river uses include an important source of drinking water for Orange County, flood control, sand and gravel mining, treated wastewater discharge and recreational fishing. None of the activities has been directly linked with the sucker's decline, according to Jim Van Haun, a consultant to the project who helped form the team when he was assistant general manager of the Orange County Water District.

"We wanted to head off any negative effects stemming from the listing," Van Haun said. Without proactive steps to understand the sucker's decline, the listing could have blocked or altered projects vital to flood control, water supply and transportation in what some have called southern California's most important coastal watershed, he said. The Santa Ana sucker is a small freshwater fish, usually less than 10 inches long, that is found only in certain rivers of southern California, including the Santa Ana River. Its preferred habitat is cool, shallow streams and rivers with pools and riparian vegetation to provide cover.

The team came together informally in 1997 as an ad hoc group to look for a collaborative approach that could help the sucker while at the same time preserving the other vital uses of the Santa Ana River watershed. Funding from member agencies was leveraged to support three years of data gathering to get a better understanding of the sucker's habitat, its migratory patterns, its relationship to predators, and exposure to contaminants. One of the studies became the basis for a planned conservation program.

The assessment work did not find any direct connection between ongoing activities in the Santa Ana River watershed and the decline of the sucker. Possible causes include the flow regime of the river, predators, sediment or discharges into the river, according to a paper on the sucker team prepared by Michael Wellborn, president of the California Watershed Network. The conservation program plans to conduct additional studies and to be prepared to address any firm findings that may link river operations or activities to the sucker's decline.

The team has not undertaken any projects yet to control discharges from point or nonpoint sources, Van Haun said, but is identifying projects it believes will reverse the sucker's decline. One likely project is the addition of sand and gravel to the river in specific locations to enhance habitat for the sucker. Other projects being evaluated are the installation of low-flow culvert crossings and creation of buffer zones during the sucker's spawning season to protect it from physical and chemical measures used in the removal of invasive vegetation such as *arundo donax*.

Meanwhile, members of the sucker team have voluntarily adopted measures to avoid "take" (e.g., killing the fish or altering critical habitat) of suckers in their regular operations and maintenance activities (O&M) in the watershed, said Jeff Beehler, environmental project manager for the Santa Ana Watershed Project Authority, one of the team's member agencies. The group is actively pursuing a permit from the U.S. Army Corps of Engineers that would include measures to avoid the taking of suckers during O&M activities such as channel improvements, he explained. Members of the group have an obligation to do no harm to the sucker, but they are looking for ways, in the normal course of their activities, they can enhance conditions for the fish.

Finding ways to recover the sucker's numbers without affecting

ongoing activities could require much collaboration and trust within the watershed. The Santa Ana River is a key cog in the flood-control system serving Orange, Riverside and San Bernardino counties. Ongoing activities include channel stabilization and realignment and removal of invasive vegetation. The river also provides an important drinking water source both from surface water storage behind Seven Oaks Dam and Prado Dam and from six miles of percolation basins that recharge aquifers in Orange County downstream of the dams.

Base flows in the Santa Ana River more than tripled between 1970 and 1997, mainly due to increases in discharges of tertiary treated wastewater. Base flows are projected to reach 231,000 acre-feet by 2020. Anticipating a potential connection between the sucker's decline and increased wastewaster discharges, the team has been studying the tissues of adult and juvenile suckers for organic or inorganic residues outside of acceptable ranges. Testing so far has found no excursions beyond those ranges, according to Wellborn's paper.

Members of the team include local agencies in Orange and Riverside counties, water agencies in Orange and San Bernardino counties, the Riverside County Flood Control and Water Conservation District and several state and federal agencies. Wellborn describes the team's approach as a departure from a project-by-project focus toward one in which all the affected agencies work collaboratively to conserve a threatened species. "It's developed into a cutting-edge scientific effort to do good management in the watershed," he said. ◆

Contact: Michael Wellborn, President, California Watershed Network, michael@watershednetwork.org

SAWPA, Jeff Beehler, Environmental Project Manager (951) 354-4239; jbeehler@sawpa.org

Migratory birds on the Pacific Flyway.

Elkhorn Slough – Slicing Red Tape

Elkhorn Slough is a 44,000-acre watershed that straddles important agricultural areas of Monterey and San Benito counties along California's Central Coast. It is one of the last remaining coastal wetland marshes in the state, providing a stopover for migratory birds on the Pacific Flyway and a nursery area for marine fish.

Cultivation of strawberries, broccoli and other crops upstream of Elkhorn Slough impaired water quality in the slough with sediment, pesticide residues and stormwater runoff. Local landowners whose properties contributed to sediment and other runoff were interested in improving their practices, but were frustrated by a complex and time-consuming permit process that often required them to get multiple permits from different state and/or federal agencies for a single project.

Beginning in 1997, a partnership spearheaded by the Natural Resources Conservation Service (NRCS), a San Francisco-based nonprofit environmental group called Sustainable Conservation and the Resource Conservation District (RCD) of Monterey County designed a program to cut through the permitting red tape and get worthy conservation projects approved. It reduces permitting to a one-stop process and offers technical assistance to landowners for runoff-control projects. The resulting Partners in Restoration (PIR) permit-coordination program has become a model for similar efforts elsewhere in California. "It's not a free pass, but it is a fast pass," said Carolyn Remick of Sustainable Conservation, likening the program to the popular transit passes that speed commuters through traffic congestion on toll bridges.

With input from regulatory agencies, a list of 10 pre-approved

CONTINUED ON NEXT PAGE

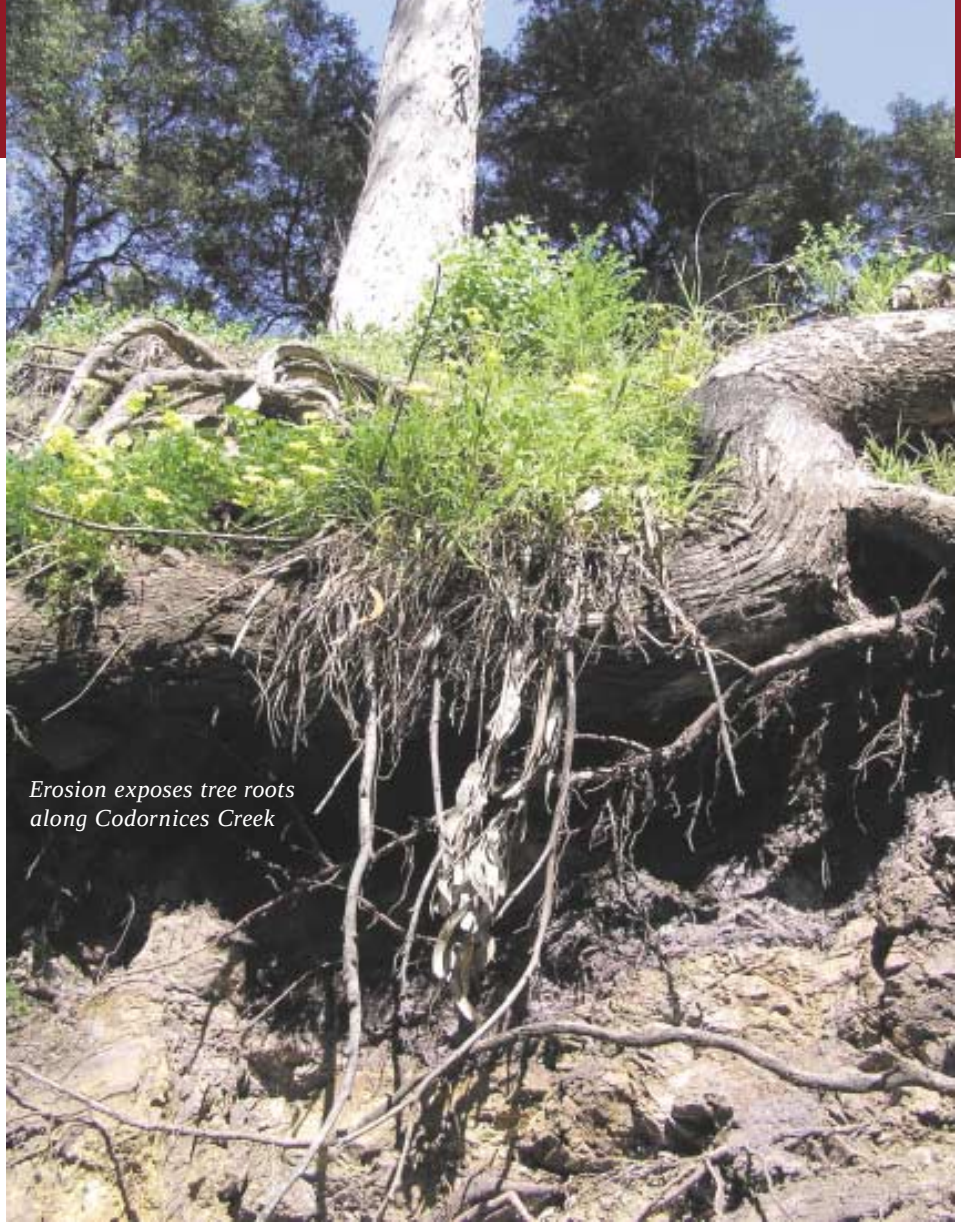
conservation practices was adopted to streamline permitting for landowners in the watershed. NRCS holds a master permit under the program that constitutes a pre-approval of projects that benefit the watershed. Landowners who contact NRCS are referred into the permit-streamlining program and given technical assistance and sometimes partial funding for their projects, Remick said. If a landowner fails to follow conditions of the permit, it can be revoked and the landowner subject to penalties, she said.

Each individual project is tailored to match up with conditions of the master permit, so individual project permits can take some time to work out, Remick said. Everybody gets something out of the permit-streamlining program. It makes it easier for more landowners to undertake and carry out projects to improve the watershed, and both permit-issuing agencies and landowners are freed from the burden of processing individual permit applications, she said.

A 2004 report on PIR's first five years lists dozens of projects that were proposed for coverage under the master permit, most of them to control sediment. Another report credits the program with preventing more than 50,000 tons of soil from eroding off agricultural operations in the watershed, enough to fill a line of full-size pickup trucks stretching more than 400 miles.

The program has been successful enough in the Elkhorn Slough that the concept is being exported to other areas. Remick said similar projects have been tried in a half-dozen coastal counties, and Sustainable Conservation is working with RCDs in the Central Valley to transplant it there. She credited the RCDs as a crucial link in the Elkhorn Slough program between Sustainable Conservation, regulators and landowners. ◆

Contact: Carolyn Remick, Sustainable Conservation, (415) 977-0380



Erosion exposes tree roots along Codornices Creek

Tiny Watershed, Big Plans

One of California's smaller watersheds has big lessons to teach others about developing a watershed management initiative that includes projects to reduce nonpoint source runoff and improve habitat for steelhead trout. The tiny Codornices Creek watershed is about one square mile surrounding a two-mile-long creek that runs from the hills above the cities of Albany and Berkeley to San Francisco Bay.

In the mid-1990s, neighborhood associations in the upper watershed learned that Codornices Creek is a spawning area for steelhead trout, according to Emma Gutzler, restoration coordinator for the Urban Creeks Council. The neighborhood groups asked the creeks council to help identify any problems in the watershed to steelhead migration. Soon, biologists had identified habitat types in the watershed, erosion sites that contributed sediment to the creek and barriers to fish passage such as culverts. Studies also were undertaken to look for possible toxic pollutants, including diazinon and polyaromatic hydrocarbons, but test results for those contaminants were below detection limits, she said.

From its humble beginning as a neighborhood concern, the number of stakeholders involved with restoring Codornices Creek has grown to include the cities of

CONTINUED ON PAGE 12

Nonpoint Source News

Water Boards Retain Authority over Logging

The State Water Resources Control Board and its regional boards retain power to require water-quality protection measures after the Department of Forestry and Fire Protection has approved a timber-harvest plan, the California Supreme Court concluded in a January 30 decision (*Pacific Lumber Co. v. State Water Resources Control Board*, No. S12464).

The decision upheld the ability of the water boards to require compliance by timber-harvesting operations with nonpoint source water-quality requirements in basin plans. In this case, the court held that monitoring required by the State Water Board could be enforced even if the monitoring is not specifically required by the applicable timber-harvest plan approved by the Department of Forestry.

The case involved a timber-harvest plan filed by Pacific Lumber Co. to log 700 acres of trees in the Elk River watershed. The Department of Forestry approved Pacific Lumber's plan in 2001, but the North Coast Regional Water Quality Control Board objected, noting that Pacific Lumber had not proposed a water-quality monitoring plan to comply with the regional board's basin plan. Responding to a Pacific Lumber appeal, the State Water Board upheld the regional board's authority to require the monitoring, but determined that only two monitoring stations were required, not five as the regional board had recommended.

A trial court sided with Pacific Lumber, but a three-judge appellate court ruled that approval of a timber-harvest plan under the Forest Practice Act does not limit the authority of another state agency, such as the State Water Board, to enforce its water-quality laws and regulations. The State Supreme Court unanimously upheld the appellate court's decision, which rejected Pacific Lumber's contention that the State Water Board lacked authority to add to the conditions of an approved timber-harvest plan.

Nonpoint source runoff from timber-harvesting operations has been cited as a cause of degradation of North Coast streams for many years, contributing large amounts of sediment that can clog creeks and rivers and impair fish passage. The court found that a "savings clause" in Public Resources Code Section 4514(c) provides that approval of a timber-harvesting plan does not limit "the power of any state agency in the enforcement or administration of any provision of law which it is specifically authorized or required to enforce or administer." ◆

EPA Releases Watershed Handbook

A 414-page guide to the watershed planning process was issued in January by the U.S. Environmental Protection Agency. The draft handbook covers eight key parts of the watershed planning process, including monitoring and assessment, community outreach, best management practices, implementation, feedback and plan adjustment.

The handbook is intended to supplement existing watershed planning guides that have been developed by agencies, universities and other nonprofit organizations. However, it provides more specific guidance on quantifying existing pollutant loads, developing estimates of load reductions required to meet water-quality standards, developing effective management measures and tracking progress once a plan is implemented.

EPA is making the draft handbook available so it can be used and tested. Feedback from a variety of watershed partnerships will be considered as the agency develops a final version. Comments on the draft handbook may be submitted until June 30, 2006, to watershedhandbook@epa.gov. To download a copy of the handbook, visit www.epa.gov/owow/nps/watershed_handbook. A free copy can be ordered by calling (800) 490-9198 or by sending an e-mail request to ncepimal@one.net. When ordering by telephone or e-mail, reference EPA document number EPA 841-B-05-005. ◆

Mercury was used during the Gold Rush to separate gold from sand, dirt and rocks.

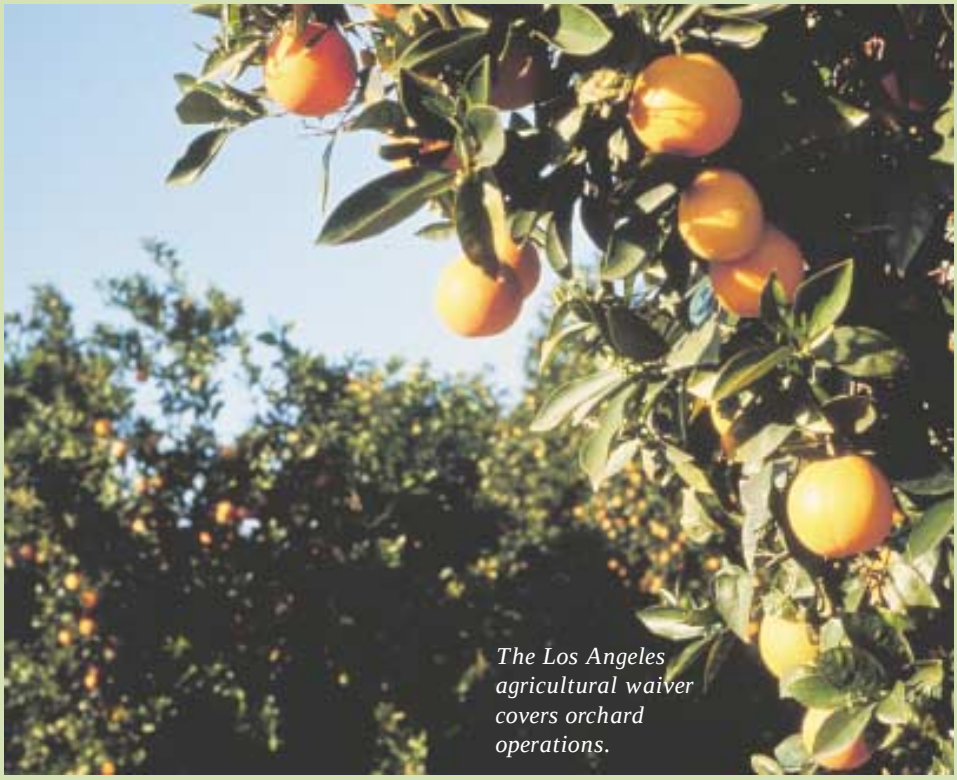
Pact to Prevent Mine Runoff

The California Department of Parks and Recreation and the Deltakeeper Chapter of Baykeeper signed an agreement in January to prevent mercury runoff from entering Little Wolf Creek from Empire Mine State Historic Park near Grass Valley. The cleanup work will involve remediation of hazardous mine tailings and sediments at the park and adoption of measures to monitor discharges from the mine and prevent contaminated stormwater from entering Little Wolf Creek, a tributary of the Sacramento River.

The state parks department purchased the underground Empire Mine and 800 surrounding acres of land in the mid-1970s as a historic site. A century of mining at the site produced 175 tons of gold but also left behind toxic contaminants such as mercury, cadmium, lead and arsenic that are mobilized by storm events.

Under the agreement, Deltakeeper will work with the parks department to ensure that pollution-prevention measures provide sufficient protections from stormwater drainage off construction sites and mine tailings piles and that hazardous waste does not continue to present a danger to the environment. The parks department has requested $5 million in the 2006-07 state budget for the cleanup work and to tackle year-round discharge from the Magenta Drain, which drains more than 300 miles of abandoned mine shafts at the park.

The settlement agreement ends a federal lawsuit brought by Deltakeeper in 2004 alleging that the parks department had not obtained proper permits for discharges from Empire Mine park. "By reaching this agreement, both parties ensure that state resources will go to clean up the pollution at the mine and not to protracted legal battles," said Layne Driedrich of Lawyers for Clean Water, who represented Deltakeeper in the litigation. ◆



The Los Angeles agricultural waiver covers orchard operations.

L.A. Water Board Adopts Ag. Waiver

The Los Angeles Regional Water Quality Control Board adopted a conditional waiver in December for runoff discharges from irrigated agricultural lands. The Los Angeles Regional Board (Region 4) joins Region 3 (Central Coast) and Region 5 (Central

Valley) as the third regional board to adopt a conditional waiver program. Like the others, the Los Angeles Regional Board's program allows growers to enroll individually or in groups.

The newest conditional waiver applies to about 263,000 acres of irrigated land in Region 4, which covers the coastal watersheds in Los Angeles and Ventura counties and small portions of Kern and Santa Barbara counties. There are an estimated 4,000 agricultural operations in the region. Under the program, growers may apply for a conditional waiver of waste discharge requirements covering runoff from irrigated agricultural operations. The conditional waiver includes requirements to monitor tailwater, wastewater and stormwater discharges for a variety of contaminants, including sediment, chemicals and metals.

The five-year program is estimated to cost about $500,000 per year, which will be paid by fees assessed on growers. The Los Angeles Regional Board estimated the first-year cost per grower at $240. Individual growers and groups of growers are expected to submit notices of intent to enroll in the program by October 2006. When a notice of intent is approved, the grower must complete eight hours of training on water quality management practices that control discharges. The first annual monitoring reports are due one year after a notice of intent is approved by the regional board.

For more information on the Los Angeles Regional Board's conditional waiver, contact Rebecca Veiga Nascimento at (213) 576-6661. To obtain copies of Region 4 conditional waiver documents, visit www.waterboards.ca.gov/losangeles/html/permits/waivers/waivers.html ◆

TMDL Roundup

North Coast (Region 1)

Regional Board approved December 7 a TMDL for sediment and water temperature in the Scott River
Contact: Bryan McFadin, 707/576-2751

San Francisco Bay (Region 2)

Regional Board approved November 16 a TMDL for diazinon and pesticide-related toxicity in urban creeks
Contact: Bill Johnson, 510/622-2354; link to staff report at: *www.waterboards.ca.gov/sanfranciscobay/Agenda/11-16-05/11-16-05-10ss2.pdf*

Los Angeles (Region 4)

State Water Board October 20 approved a TMDL for toxic pollutants in sediment in Ballona Creek Estuary
Contact: Rebecca Christmann, 213/576-6757; link to staff report is available at: *www.waterboards.ca.gov/agendas/2005/october/1020-06revised.pdf*

State Water Board October 20 approved a TMDL for metals in the Los Angeles River and tributaries
Contact: Jenny Newman, 213/576-6808, link to staff report is available at: *www.waterboards.ca.gov/agendas/2005/october/1020-07revised.pdf*

State Water Board October 20 approved a TMDL for metals in Ballona Creek
Link to staff report is available at: *www.waterboards.ca.gov/agendas/2005/october/1020-08revised.pdf*

State Water Board approved January 15 a TMDL for toxic pollutants (copper, lead, zinc, PCBs and chlordane) in Marina del Rey Harbor
Contact: Ginachi Amah, 213/576-6685

Central Valley (Region 5)

State Water Board October 20 approved a TMDL for control of salt and boron discharges into the lower San Joaquin River
Contact: Les Grober, 916/464-4851; link to staff report is available at: *www.waterboards.ca.gov/agenda/2005/october/1020-10.pdf*

Central Valley Regional Water Board October 21 approved a TMDL for mercury in the Cache Creek watershed
Contact: Janis Cooke, 916/464-4672; link to staff report is available at: *www.waterboards.ca.gov/centralvalley/programs/tmdl/Cache-SulphurCreek/cache-ck-hg-final-rpt-oct05.pdf*

Central Valley Regional Water Board proposed a TMDL for nutrients in Clear Lake
Contact: Lori Webber, Environmental Scientist, 916/474-4645; link to staff technical report is available at: *www.waterboards.ca.gov/centralvalley/programs/tmdl/clearlake_nutrient_tmdl.html*

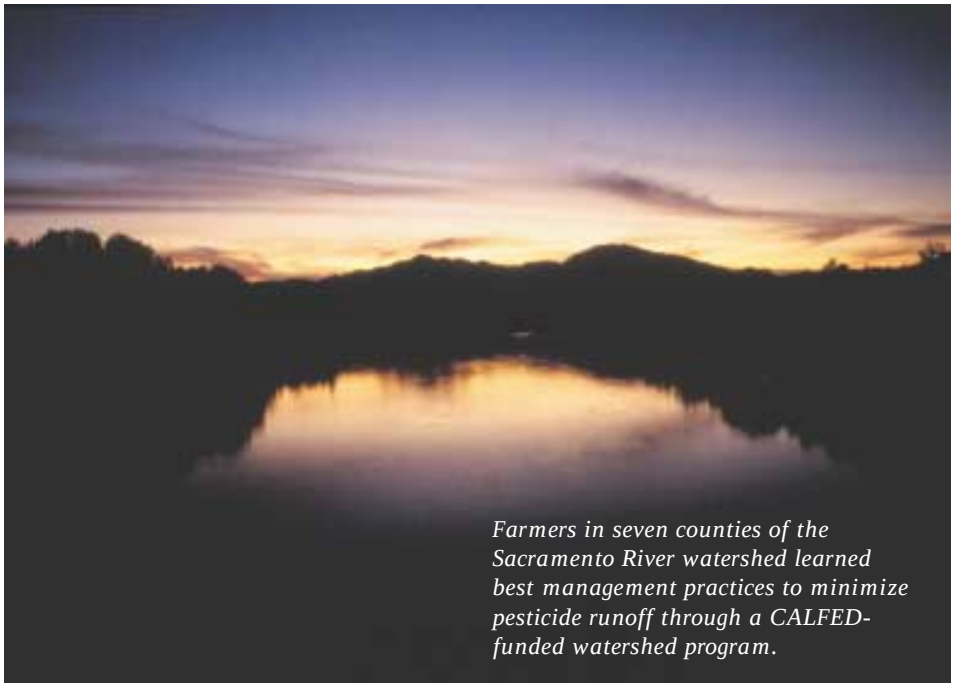
CONTINUED FROM PAGE 8

Berkeley and Albany and a variety of federal and state agencies, Gutzler said. A watershed council emerged in 2005 with representation from neighborhood groups, businesses, the cities, and agencies such as the U.S. Environmental Protection Agency and the state Department of Fish and Game, she said. After a year of informal meetings, the council recently hired a watershed coordinator to oversee a more formal process for managing projects to improve the watershed.

Restoration projects are being drafted for this summer to control erosion from creek banks at St. Mary's College High School, a secondary school in the upper watershed. These will include redesigning the school's drainage system, sloping the creek bank and using soil bioengineering techniques to reduce erosion, Gutzler said. Students at the school are growing native plants to replace invasive species such as eucalyptus and nasturtium, she said. Other projects include altering the channel bed along a 500-foot reach of Codornices Creek and construction of a step pool sequence downstream of Albina Ave. to enhance fish passage through this existing barrier to the upper watershed.

Though tiny when compared with many watershed programs, the Codornices Creek Watershed Council illustrates how neighborhood groups and others can coalesce around small projects and build on them toward more comprehensive restoration projects. In the meantime, members of the watershed council have learned much about their small watershed and what it needs to maintain healthy habitat for steelhead. "There are things there that you would never imagine to be there," says Gutzler. ◆

Contact: Emma Gutzler, Restoration Coordinator, Urban Creeks Council of California, (510) 540-6669.



Farmers in seven counties of the Sacramento River watershed learned best management practices to minimize pesticide runoff through a CALFED-funded watershed program.

CALFED

Easily the largest single watershed management effort in the state is occurring under the umbrella of the CALFED Bay-Delta Program. CALFED has funded dozens of assessments, projects, monitoring and management measures throughout its "solution area," which encompasses much of northern California, though projects have reached into southern California as well.

Established in 1998, the CALFED watershed program works with communities at a watershed level to achieve its overarching goals of restoring ecosystem health to the Sacramento-San Joaquin Delta region and improving overall water management. The watershed program has tried to integrate a watershed approach into the CALFED program as a whole by providing technical and financial assistance for watershed activities that help CALFED achieve its goals.

In its first round of grants, CALFED funded 53 projects stretching across five regions that are connected to the Bay-Delta watershed. Grant projects awarded in 2001 are summarized by following regional links at http://calwater.ca.gov/Programs/Watershed/WatershedGrantsCatalogue.shtml

Examples of projects funded by CALFED's watershed program include the following:

- Farmers in seven counties of the Sacramento River watershed learned best management practices (BMPs) and calibration techniques for pesticide sprayers to minimize runoff of organophosphate (OP) pesticides. The program involved a three-year outreach and education campaign directed by the Coalition for Urban/Rural Environmental Stewardship (CURES), a nonprofit group that supports educational efforts focusing on judicious use of pesticides.
- Deer Creek Watershed Conservancy helped individual ranchers develop ranch plans to improve water quality and riparian areas. Assistance included mapping, development of erosion control measures, grasslands management

and improvements to protect against contaminated runoff.
- Several projects to reduce erosion, remove invasive plant species and control flooding were planned under a CALFED grant for Lower Putah Creek watershed east of Lake Berryessa.

Parry Klassen, executive director of CURES, credited the OP pesticides project with helping to reduce diazinon levels in the Sacramento and Feather rivers to below the total maximum daily load (TMDL). "Diazinon pesticide levels went down over the period of the project" from 2002 to 2005, Klassen said.

The project raised awareness about pesticide management strategies among growers in the Sacramento River watershed. BMP posters and other publications were created and provided to growers and employees in English, Spanish and Punjabi. Twenty-eight field presentations were made to more than 2,000 participants, and a demonstration farm tour was organized so growers could see the latest BMPs explained by experts.

A survey conducted at the conclusion of the project found a significant increase in the number of growers who base their spray timing on wind and weather data and adjust droplet or nozzle size on sprayers to reduce pesticide drift into non-target areas. Growers who follow the BMPs are rewarded with "Water Steward" field signs they can display along field perimeters. ◆

Contact: Dan Wermiel, CALFED Watershed Program, (916) 445-5398

Reports on CALFED grant-funded watershed projects are at http://calwater.ca.gov/Programs/Watershed/WatershedGrantsCatalogue.shtml

Parry Klassen, CURES, (559) 325-9855. Copies of materials produced by CURES are available at http://www.curesworks.org/publications/ag.asp

Erasing Waste Before It Becomes Nonpoint Source Pollution

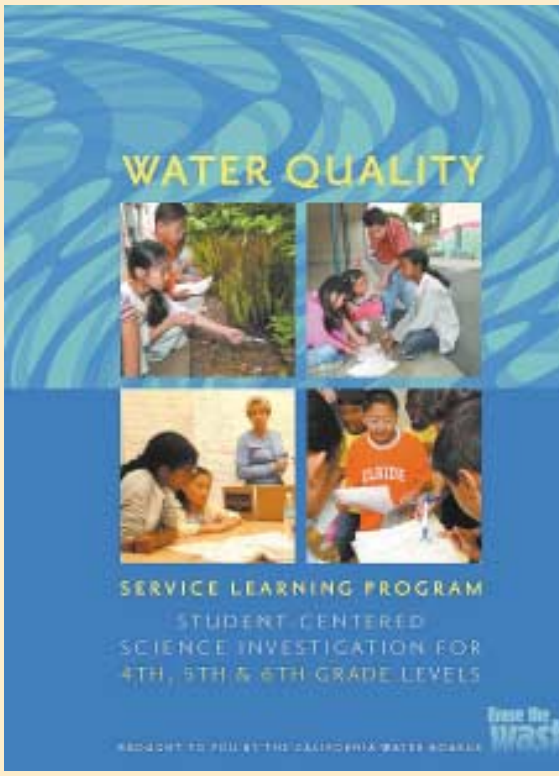
By Gary Pitzer

Among the many facets of nonpoint source pollution, one of the hardest to address has been pollution caused by human behavior. A State Water Resources Control Board initiative called "Erase the Waste" aims to change behaviors that contribute to nonpoint source runoff, especially in urban watersheds. Test-marketed in the Los Angeles area, "Erase the Waste" is being readied for broader distribution in California.

The root of the message is to convince people that seemingly insignificant contributions of litter add up to big environmental and public health problems in vast urban realms such as Los Angeles. Animal waste, cigarette butts, discarded packaging and the like combine with pesticides, oil, soaps and other materials to clog storm drains and contaminate the runoff they carry to beaches and the ocean.

One of the $5 million campaign's catchy public service advertisements called *Did You Drop Something*? targets dog owners. "There are 33 million people in California, many of them dog owners," it says. "Do the math. Then do this. Pick up after your pooch."

Erase the Waste was created in 2003 specifically to address the problem of what the State Water Board refers to as "regional priority pollutants." Tailored to the region's multi-ethnic population, and funded with revenue from polluter fines deposited in the State Water Board's Cleanup and Abatement Account, Erase the Waste is the first countywide stormwater public education effort funded by the state and geared toward curbing nonpoint source pollution that has led to beach closures in areas where storm sewers discharge runoff contaminated with pet waste, pesticides, oil and other urban detritus.



Cover page from Neighborhood Action Kit booklet

Tom Mays, the State Water Board's manager for education and public outreach, said those kinds of

Continued on page 14

pollutants originate in diffuse settings but are channeled into disposal end points that have been the focus of improvement for water quality regulators.

Erase the Waste aimed its message at two groups of residents determined by survey to be most likely to change their behaviors. It then took a multi-faceted approach, using television; radio and print advertising; community outreach; strategic partnerships with businesses such as home improvement and pet supply retailers; youth education and local events such as graffiti abatement and river clean-ups to reach the target groups.

One of the print products is a Neighborhood Action Kit that includes a "how-to" guide for local stormwater agencies to enlist residents as "pollution prevention advocates." Produced in five languages and distributed through a diverse network of outreach groups, the kit "is an important vehicle that gives communities the assistance they need to get involved in pollution prevention efforts and educate their neighbors, friends and family on the stormwater issue," according to the State Water Board.

The program also aimed its focus at youth education, creating a water quality learning model for grades 4-6 that teaches students how polluted runoff affects the watershed in its entirety. Erase the Waste funds were also used to develop a permanent watershed exhibit located at the entrance of the Cabrillo Marine Aquarium's educational section. "Thousands of L.A.-area school children visit this city-run aquarium that is located in San Pedro, and will be educated on the importance of stormwater pollution prevention through our interactive display," Mays said.

Deborah Barnett, a teacher at Justice Street Elementary School in West Hills, praised the educational component of Erase the Waste, which she said helps students understand the connection between stormwater pollutants and downstream water quality.

The state is planning to promote the "Erase the Waste" stormwater pollution reduction effort as a comprehensive tool kit that can be applied to communities throughout the state and even the nation. However, the initial Los Angeles County road test has not been without its bumps.

Bumps in the Road

State officials said the program was intended to be a tool to help all communities improve their outreach efforts regarding stormwater awareness and was designed to complement existing efforts by local agencies. But Melinda Barrett, director of environmental education for the Los Angeles County Department of Public Works, said the campaign was a problem because the county has been implementing its own comprehensive program since 1997. Like most large storm sewer operators, the county has been required by the state to implement public education programs as part of its National Pollutant Discharge Elimination System (NPDES)

Interactive display shows how polluted runoff affects the Los Angeles watershed

permit for several years, she said. "This program is duplicative of what the county has been doing," she said, referring to Erase the Waste.

Mays said Erase the Waste was coordinated with the county "to ensure our activities were complementary to their programs." The state focused its efforts on a countywide campaign, he noted, while the county devoted its resources to working with cities and priority unincorporated areas. The State Water Board put Los Angeles County's name on Erase the Waste materials free of charge, included the county's hotline on many advertising and marketing materials and split outreach to retailers and businesses. "Together, these complementary efforts saved thousands of dollars and helped extend our reach to many more households and businesses," Mays said.

A survey conducted in the middle of the Erase the Waste campaign showed that approximately one-third of Los Angeles County residents had changed at least one of their polluting behaviors in the past year and about 50 percent had become more active in neighborhood cleanup efforts as a result of seeing or hearing the messages.

But Barrett said county residents would be better served by one unified message rather than two smaller efforts. "The Los Angeles media market is the most expensive in the state," she said. "With two campaigns, each resident sees each message a few times. If we had one campaign, residents would see the same message more often, a more effective way of getting their attention."

Erase the Waste differs from previous campaigns that highlighted the effects of nonpoint source pollution, such as beach closures. Its approach relied on research that confirmed Los Angeles residents are more willing to change their polluting behaviors when they understand the health and safety risks that pollution poses to their immediate community. "We've had a tremendous [increase in] awareness level and commitment to behavior change," Mays said. "Of course, as with any education campaign, it must be sustained."

"This requires a permanent commitment of time and resources to reinforce the messaging, and work to change polluting behaviors."

– Tom Mays

That follow-through is crucial, said Meredith McCarthy, coastal cleanup manager for Heal the Bay, as is consistency and coordination between the state and local campaigns. Materials developed for Erase the Waste generally were very good, she said, but they didn't always connect with target audiences. The neighborhood action kits contain a great deal of information, but they were not promoted effectively to the county's many diverse communities, she said. "Unless you are standing there at a community event, no one's going to call the regional water board and ask for a community action guide," she said.

The campaign's effort to promote stormwater awareness through the watershed display is laudable, McCarthy said, but the number of events at which the display can be used is limited. Similarly, very useful materials are available on the Erase the Waste website, "but most of the communities that could best use the materials aren't computer users," she said.

McCarthy said the breadth of diversity in Los Angeles requires a specially tailored focus to instill the importance of environmental education in areas where higher priorities exist. As such, promoters of stormwater pollution awareness need to do their homework to make sure they are addressing pertinent issues. Pet ownership, for example, is likely to have larger representation in some areas than others.

Mays agreed about the need for proper research and he shared what was conducted prior to development of the campaign. Social marketing and technical research were conducted to identify target pollutants and campaign messages. Extensive research was done with focus groups to ensure that messages resonated with target groups, he said. About 3.75 million people received Erase the Waste messages, more than 90 percent of them through television, radio and newspapers, he reported. More than 15,000 Neighborhood Action Kits were distributed, and educational partnerships were forged with more than 150 retailers, nonprofits and public agencies throughout Los Angeles County.

Mays said the state plans to keep working with municipalities and sharing resources in order for local agencies to find the best stormwater campaign that works for them. "Our ongoing challenge for the Water Boards and all cities grappling with stormwater pollution will be to sustain the messaging to the general public through a variety of education and outreach tools," he said. "This requires a permanent commitment of time and resources to reinforce the messaging, and work to change polluting behaviors. All cities under stormwater permits are aware of this, but money is tight, and resources are spread thinly."

He added, "We hope to assist cities by sharing existing curriculum, strategies, ads and other statewide collateral to meet this challenge. These were developed or gathered through our campaign, and we hope it will benefit cities so they don't have to re-invent the wheel." ◆

If you would like to receive this newsletter electronically, please send your email address to: smcclurg@watereducation.org

Share Your Success

Have an interesting story to tell about your nonpoint source pollution control or stormwater program? Why not share your experience with others through *The Runoff Rundown*? One of the goals of *The Runoff Rundown* is to be a forum for sharing ideas that have successfully reduced nonpoint source or urban runoff. These can be programs or policies initiated by cities, local and regional agencies, regional water boards, or in the private sector. To share your story, contact Sue McClurg, Water Education Foundation, at (916) 444-6240, or send e-mail to *smcclurg@watereducation.org*.

WATER EDUCATION FOUNDATION
717 K Street, Suite 317
Sacramento, CA 95814
Phone: (916) 444-6240
Fax: (916) 448-7699
www.watereducation.org

Non-Profit Organization
U.S. Postage
PAID
Sacramento, CA
Permit No. 430

CHANGE SERVICE REQUESTED