

# Runoff Rundown

A NEWSLETTER OF THE WATER EDUCATION FOUNDATION

## Days at the Beach: What is the Quality of Ocean Water in California?

By **RYAN MCCARTHY**

An inflatable rubber dam, ultraviolet light bulbs and filtration tanks are planned as part of a \$2.2 million project to improve water quality at a popular Southern California beach regularly listed as among the most bacteria-rich in the state.

“Perpetually problematic,” is how a California environmental group has described Poche Beach in Orange County in the city of San Clemente.

That description by Heal the Bay, and frequent postings at the beach about elevated bacteria levels that exceeded state standards, however,

didn’t speed review of the Poche Beach project designed to treat water from a creek that runs into the Pacific Ocean.

“We’ve been trying to get this constructed since the original grant of 2002,” said engineer Sonia Nasser, project manager for Orange County. The Orange County Board of Supervisors awarded a contract in July to build the project after the California Coastal Commission approved it.

Orange County resident Richard Gardner, an engineer who also serves as a director of a local water district, questioned the Coastal

Commission about the plans.

He says a \$450,000 project – with the colorful name WetCAT, for Wetland Capture and Treatment – in the nearby city of Laguna Niguel uses plants to remove pollutants and is a better and more natural way to improve water quality.

“The engineering solution,” Gardner said of the planned project at Poche Beach, “is sterilize it. Putting a pipe in the beach and dumping urban runoff is stupid.”

Overwatering by residents is the real problem behind ocean water pollution, he added, because that

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*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,

The story of California water in 2007 has had the ailing Sacramento-San Joaquin Delta at its center – and necessarily so, since this hub of our state's water system and valuable ecosystem must be fixed.

But the most direct contact most residents of the Golden State have with water happens not in the Delta but at the beach. Millions go to play, swim and surf along the California coast and the quality of water at the state's beaches is a critical, if sometimes overlooked, part of the water story.

This *California Runoff Rundown* looks at the issue of water quality along California beaches and reports that most California beaches had good water quality during dry weather in 2006-2007.

In this issue, you also can read about matters related to the Irrigated Lands Program in the Central Valley, an effort to address farming runoff on more than 7 million acres stretching from Bakersfield to near the California-Oregon border.

"We recognize the magnitude of the problem," Tam M. Dudoc, chair of the State Water Resources Control Board, said of the impact of agriculture on water quality at a September 13 workshop in Clovis.

The environmental community has criticized the ag waiver/coalition approach in the valley, but Ken Landau, assistant executive officer for the Central Valley Regional Water Quality Control Board, points out that hundreds of chemicals, thousands of water bodies, tens of thousands of growers and some 100,000 discharge points are involved.

Agriculture and Central Valley water quality is a complex issue – like so much else in the world of California water. ♦

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# Central Valley Ag Waiver Program Spurs Praise, Criticism and Questions

The State Water Resources Control Board (State Water Board) is concerned about progress made by the Central Valley Regional Water Quality Control Board's (Central Valley Board) agricultural waiver program intended to address farm runoff on more than 7 million acres of land in California's Central Valley.

At a joint State Board-Central Valley Board Sept. 13 workshop in Clovis, State Board Chair Tam M. Dudoc closed the meeting by noting that agricultural discharges will not be eliminated immediately. But she did call for measures to strengthen the monitoring and reporting portions of the Irrigated Lands Program.

"What we're assuring you is that we recognize the magnitude of the problem," she said to attendees at the workshop.

Dudoc opened the meeting by stating that the ag waiver program under discussion "is not an exemption from regulatory requirements or from water quality objectives." The waiver, she said, has proven to be a very important first step in an Irrigated Lands Program.

What actions would be taken to address water quality violations was one of 20 questions the State Water Board posed to the Central Valley Board in the notice for the joint workshop.

State law regulates any discharger of wastewater. According to the State Water Board, agricultural discharges can transport pollutants including pesticides, sediment, nutrients, salts, pathogens and heavy metals from fields into surface waters. The Central Valley Board has adopted the Irrigated Lands Conditional Waiver to pro-

vide a way for discharges to comply with the California Water Code.

The Central Valley Board was the first of the state's nine regional boards to adopt a waiver program, which has taken a coalition approach to runoff control. In 2006 it said the program is an interim measure while the regional board develops a long-term program to regulate irrigated agriculture.

Up to 75,000 owners or operators are involved in the more than 7 million acres of irrigated lands in the Central Valley, the Central Valley Board said, and the ag waiver program covers about 5.5 million acres. Much of the remaining acreage doesn't drain to surface waters and is not included in the Irrigated Lands Program. Some irrigated lands that should be in the program have not been enrolled and locating them is part of the enforcement effort by the Central Valley Board.

Karl Longley, chair of the Central Valley Board, said at the Clovis workshop that a lot of progress has been made in the four years since the program began in 2003.

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## The Latest News

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“Cleanup of this water is going to take a long, long time,” he said.

Ken Landau, assistant executive officer for the Central Valley Board, said there has been extensive criticism of the program – including comments that range from the complaints of excessive monitoring of agriculture to not enough monitoring. But after initial resistance to the program, farmers are now cooperating. “We have developed an effective program to deal with the problems,” he said, acknowledging that “agricultural discharges are causing water quality problems.”

Identifying and correcting agricultural water quality programs is difficult and lengthy, he added. “We are not dealing with a single case or even dozens,” Landau said. The program involves hundreds of chemicals, thousands of water bodies, tens of thousands of growers and some 100,000 discharge points. In many cases, he said, more information is needed to correct water quality problems.

The Irrigated Lands Program covers a region that runs from near Bakersfield where cotton is grown on the valley floor to wild rice grown near the Oregon border. With 28,000 growers in the Central Valley, Landau said the Central Valley Board staff can’t deal one-on-one with farmers.

Bill Jennings of the Stockton-based California Sportfishing Protection Alliance criticized the Irrigated Lands Program because it lacks enforcement and the Central Valley Board “doesn’t know who’s discharging what.”

Agriculture is the largest polluter in the Central Valley, Jennings said. “Farmers will continue to pollute with impunity until courts assume oversight of the program. I’m not sure this board can regulate agriculture.”

Jennings wants growers to prepare water quality management plans. He cited the success of a



traditional regulatory program involving rice growers focused on the prohibition of discharge.

Al Vargas, an environmental scientist with the California Department of Food and Agriculture, said requiring each grower to develop plans for water quality makes little sense. “It defies logic to require every farmer to develop management plans.”

Representatives of grower coalitions praised the effort and cited its success. Perry Klassen, board chair of the East San Joaquin River Valley Water Coalition, said it’s absolutely wrong that growers are uninvolved in the program. A total of 588 growers in the last year changed practices of their farms to address water quality issues, he said.

Environmental groups, including Clean Water Action and the Environmental Justice Coalition for Water, say agricultural drainage has contaminated groundwater aquifers – forcing residents of some areas of the valley to buy bottled water. “We have a runaway train,” said Debbie Davis of the Environmental Justice Coalition. “We need to know that at least we’re putting on the brakes.”

Environmental groups at the Sept. 13 workshop asked that officials amend the ag waiver program to incorporate groundwater protection. Laurel Firestone, representing a range of environmental justice organizations, said more than 40,000 people in the valley are exposed to illegal contaminants in water, mostly from groundwater contaminated by chemicals used in fertilizers.

Landau said officials recognized in 2003 with adoption of a new conditional ag waiver that irrigated agriculture can impact groundwater and that the Central Valley would need to regulate discharges. But surface water discharges were dealt with first because environmental groups that had petitioned the board for more stringent regulation of agriculture were almost exclusively concerned about surface water.

“Frankly, taking up groundwater would have greatly expanded the scope and effort of the program,” he said, “and neither the board nor coalitions could have handled the additional workload at the time.”

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## Days at the Beach

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sends more runoff into the Pacific and wastes precious water. The Poche Beach project “is an engineering solution to a behavioral issue,” he said.

Poche Beach Project Manager Nasser disagreed. “We looked at a lot of different alternatives. You always have people who don’t like the way you’re treating water. Everybody says they want clean water. But they want it their way,” she said.

“I agree that over-irrigation by residents is probably the real problem behind ocean water pollution,” she continued. “But it takes time to change behavior and the public is demanding immediate water quality improvement.”

Even as it faces ocean water quality issues including harmful algal blooms, septic tanks in the Hollywood beach community of

Malibu and disputes over how best to measure ocean water contamination, California gets mostly high grades for its beaches.

Literally. The Santa Monica-based environmental group Heal the Bay grades beaches throughout the state on the A to F scale. Problems at Poche Beach in Orange County are more the exception than the norm for ocean water quality in the state.

“Most California beaches had good water quality, with 295 of 360 locations receiving very good to excellent A and B grades for the year during dry weather,” the group’s 2006-07 report states.

Grades for California beaches drop during the rainy season. Why?

**“You’re flushing the watershed and it all goes to the beach.”**

– Ryan Dwight,  
*Coastal Water  
Research Group*

“You’re flushing the watershed,” said Ryan Dwight, a researcher for the Coastal Water Research Group, describing the seasonal weather pattern, “and it all goes to the beach.”

Runoff from creeks, rivers and

stormdrains, Heal the Bay noted, is the largest source of pollution to California beaches and may contain materials including pesticides, petroleum hydrocarbons and animal waste.

“For the first time, we’re starting to see progress in beach water quality during the summer months,” said Mark Gold, executive director of Heal the Bay, “largely due to funding from the Clean Beaches Initiative (a state grant

*Imperial Beach in San Diego County*





program) and the efforts of local governments.”

But water quality along California’s coast, especially in Southern California, has not improved during wet weather, Gold said. “In fact, California has made negligible progress towards reducing stormwater runoff pollution from urban and agriculture areas. As a result, many Southern California beaches look like landfills after every rain, stormdrain and creek runoff is often toxic to aquatic life, and over half of the beaches receive poor grades on our Beach Report Card.”

Los Angeles County beaches received the lowest grades, Heal the Bay said. Why? One reason is that Los Angeles County was among the first in the state to change its water monitoring program “to collect samples directly in front of flowing storm drains and creeks.”

Such “point zero” monitoring is the best way to minimize health risks to swimmers, Heal the Bay said.

Despite a state law establishing beach water quality standards, Gold

said, counties monitor water quality in different ways. “To best protect public health, Heal the Bay recommends that samples should be collected directly in front of flowing stormdrains and creeks.” Many counties, as Los Angeles once did, collect samples 25 yards from flowing drains.

That status for Los Angeles County – after it helped lead the way to more accurate monitoring – also indicates the complications that come with California’s rigorous measurement of ocean water quality.

“We sample more than any place else,” said John Griffith, marine microbiologist with the Southern California Coastal Water Research Project. “We have the most heavily

**“We have the most heavily monitored beaches in the world. California is doing more than any other place to try to clean up the water.”**

*– John Griffith,  
Southern California Coastal  
Water Research Project*

monitored beaches in the world. California is doing more than any other place to try to clean up the water.”

The state needs to, said Michael Beanan, a director of the South Laguna Civic Association in Orange County. California beaches don’t deserve even a D

grade, he said, noting that beach report cards check bacteria but not algae and other indicators of water quality. “I’ve gone toe to toe with Heal the Bay,” Beanan said of what he sees as deficiencies in standards that lead to better grades than beaches deserve.

Gold said the State Water Resources Control Board (State Water Board) and the California Beach Water Quality Work Group have endorsed the group’s grading system. The Beach Report Card looks at fecal bacteria densities, he noted, not trash or toxics.

The state has not faced the problems of Hawaii, where in March 2006 the health department closed Waikiki Beach after a major sewage spill. The Stanford University School of Medicine’s magazine noted, “The microbe-contaminated waters were blamed for several illnesses and implicated in the death of a man who became infected by flesh-eating bacteria.”

Efforts to improve ocean water quality in California include the \$2.2 million project at Poche Beach and the nearby wetlands works in Laguna Niguel.

Nancy Palmer, senior watershed manager for Laguna Niguel, cautions about comparing the two projects in Orange County. “It’s a different problem,” she said of

*Constructed wetlands help filter pollutants at Laguna Niguel Beach.*



Laguna Niguel's situation, "with a different solution."

A 1999 cleanup and abatement order by the San Diego Regional Water Quality Control Board (San Diego Regional Board) after reported high bacteria levels in runoff from a storm drain outfall started Laguna Niguel's effort, she recalled. (Three years later, monitoring demonstrated that high fecal coliform concentrations are not unusual for storm drains, Palmer would note in a presentation to the San Diego Regional Board.)

After the 1999 abatement order, Palmer began work on a response by the city. The three treatment wetlands project, a series of ponds where reeds and other plants absorb elements including nitrogen to improve water quality, followed. "If the water goes through the system slowly enough," Palmer said, "it gives it time for the biological process to work."

At Poche Beach in San Clemente, a creek runs into the ocean, she noted, while in Laguna Niguel, "I had gravity, I had space and I had time to let the biological processes work. We were able to capture 'nuisance' urban runoff from gutters and storm drain pipes at higher elevations and route it via a piping system to flow through the three treatment wetlands, and then after treatment flow back into the pipes or directly into the creek."

More than two acres were used for the treatment wetlands. "Passage through the treatment wetland takes two to five days from influent to effluent points," Palmer added, "in order to reduce the amount of bacteria consistently."

Poche, by contrast, is a single location at the extreme downstream end of the drainage area – basically in the pipe just upstream from the discharge outfall to the ocean, Palmer continued. The volume of water means the Poche site does not have anywhere near enough space to use treatment wetlands.

And the treatment point was



*Storm channel to Poche Beach*

already at the bottom of the drainage area. "The only way to achieve the desired bacteria reductions under these conditions is through technological sterilization," Palmer said of Poche.

Water quality at California beaches, many observers say, is improving thanks to projects such as those undertaken by Laguna Niguel and planned by San Clemente. The city of Dana Point in Orange County installed a treatment system in 2005 at Salt Creek Beach, a project similar to the one planned for Poche Beach. Officials say the effort improved water quality at Salt Creek Beach and adjoining Monarch Beach.

Another major beach pollution problem is trash in the rivers that lead to the beach. The Los Angeles Regional Water Quality Control Board has adopted a total maximum daily load (TMDL) for trash in area waterways. "Trash carries with it pollutants," said Francine Diamond, chair of the board. "They reach the beaches."

Diamond said water quality efforts are paying off. "Many beaches in our region have been significantly improved over the last 10 years," she said. "It takes a long time to see the results of regulations."

Improvements can be overlooked by the public amid beach closures that come as a result of improved testing and the standards of the 1999 state law, suggests a Northern California official.

"We do post beaches much more than we used to," said Steve Peters, water quality specialist for Santa Cruz County who has surfed in California for more than 40 years. The legislation requires measuring three indicator bacteria – total coliforms, fecal coliforms and enterococci – weekly at high-use beaches.

Rick Wilson, coastal management coordinator for the Surfrider Foundation in San Clemente, said the lack of data before the new law complicates knowing how much water quality has improved.



“What was the water quality like before that?” asked Wilson. “No one really knows. It seems like the more you test, the more problems you find,” said Wilson, a chemical engineer who has a bachelor of science degree in

chemical engineering from Stanford University. “It’s good that we do as much testing as we do,” added the representative for Surfrider. The San Clemente organization has praised voter passage in 2006 of Proposition 84 and the \$90 million the measure provides for the Clean Beaches Program to protect coastal waters from pollution.

Efforts to improve ocean water succeeded, suggests a study of surfzone water quality at Huntington Beach in Orange County. “On average, total coliform concentrations have decreased over the past 43 years,” the 2002 report for the American Chemical Society states. However, “point sources of shoreline contamination (stormdrains, river outlets and submarine outfalls) continue to cause transiently poor water quality.”

Not everyone is sure water quality is improving.

The quality of water at California beaches is not known, said Ed McGowan, who has served on the board of directors of the Citizens Planning Association & Foundation of Santa Barbara County. Without dramatic problems, he added, ocean water is not a key concern of the public.

“As long as people aren’t just dropping dead,” he said, “it’s not perceived as a problem.” McGowan said measurements of ocean water don’t tell us enough to know the possible risks.

Santa Barbara County is home to a long battle over the permit for a

**“Anything that goes on the road is going to go into the ocean without treatment.”**

– Rick Wilson  
*Surfrider Foundation*

sewage district to discharge into ocean waters.

The environmental group Heal the Ocean challenged the Goleta Sanitary District’s try for a new five-year waiver from the requirements of the federal Clean

Water Act (CWA) that require full secondary treatment of sewage. Heal the Ocean went with a camera to the ocean floor as part of its effort.

Jim Knowlton, who has filmed and edited shark documentaries for Discovery Channel’s Shark Week, shot an underwater video in 2002 of the sewer outfall and what he saw sent into the Pacific. “You could see the chunks,” Knowlton said, describing brown items the size of eraserheads.

Kathleen Werner, technical services supervisor for the Goleta Sanitary District, said that whatever Knowlton saw was not raw sewage. All wastewater is treated and the district monitors conditions at the ocean. “Is it pure water? No. It’s not,” Werner said of the treated wastewater discharged by the district. “It’s not snowmelt.”

But the district is not polluting the Pacific by the discharge from its mile-long offshore pipe, she said. “There was no indication that the treatment process was adversely affecting the ocean waters.”

The sanitary district filed a lawsuit against the State Water Board after the board upheld the Central Coast Regional Water Quality Control Board (Central Coast Regional Board) decision denying a new five-year extension of Goleta’s 301h waiver under CWA provisions.

The 2004 settlement of the case includes a requirement that the district upgrade its facilities by 2014 to allow full secondary treatment of all sewage discharge, Werner said.

To the south of Santa Barbara County on Avalon, Catalina Island, a 2001 study led by the University of California, Irvine, found that decaying sewage pipes in the downtown next to Avalon Bay had leaked human waste into the shoreline water.

In response the city lined its downtown main sewer pipes and manholes and repaired and lined lateral sewer pipes within the first three blocks of the waterfront.

While many see ocean water quality in California improving, agreement is widespread that a better way to test it is needed.

Surfrider Foundation representative Wilson said the 24-hour gap between testing and results means the beach posting is always out of date. “You find out today that you shouldn’t have gone in the water yesterday,” he said.

Added Wilson: the standards used in testing “need to be updated.”

The Southern California beachfront community of Malibu, best known as the home of Hollywood celebrities, faces an issue that’s not the stuff of movies. No sewer system is in place and residences must rely on septic tanks.

“To us it doesn’t make sense,” Wilson said. “Septic tanks right along the coast.”

But the prospect of Los Angeles County building a sewer system, a project seen as spurring growth, led the community to incorporate in 1991. The septic systems remains in place – as do questions about their role in ocean water pollution. In March, a Los Angeles County panel won approval to test the waters to determine whether Malibu septic tanks are polluting the Pacific.

Nearly 200 miles to the north along the California coast, another community faces the issue of septic tanks and water quality.

Quarter-acre lots are more common in Los Osos, the San Luis Obispo County town three miles from the beach, than the exclusive

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## Officials Aim to Limit Tahoe Fire Impacts

The Angora Fire that burned near South Lake Tahoe over the summer will not impact the entire famed alpine lake, but it does raise concerns over the cumulative effect on Lake Tahoe, the U.S. Forest Service says.

"It's only about 5 percent of the entire watershed that was affected by the fire," Stephanie Heller, hydrologist with the Forest Service said of the June 24-July 2 fire. "Impacts won't be lakewide," Heller

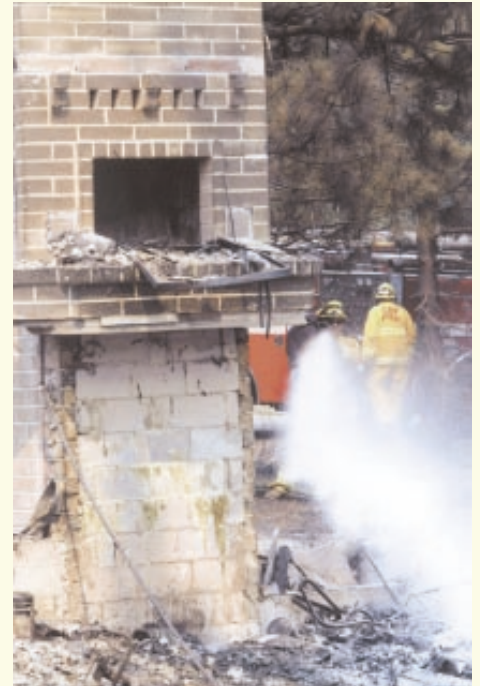
said. "[But] there will be increased sediment and nutrient delivery to the lake."

The fire near South Lake Tahoe that started June 24 destroyed 242 residences and 67 commercial structures. A total of 3,100 acres were burned.

The burned area report completed by the Forest Service states that the Upper Truckee River, the main conduit for Angora Creek to reach Lake Tahoe, contributes the

highest amount of sediment to the lake.

"The effects of ash and sediment delivered to Lake Tahoe from the Angora Fire, while not chronic, will nonetheless be a cumulative effect in a situation in which there is substantial concern over a treasured resource to the state of California and Nevada," the report states. "There is a high probability that



post-fire flows from the first runoff-producing rain events will see a high concentration of ash discharged from the burn area a long distance downstream to the Upper Truckee River and Truckee Marsh."

Increased sedimentation that could affect cold water fish habitat is expected in all of the burn area sub-watersheds, the report adds.

Strategies to mitigate water quality threats include providing immediate cover on severely burned hillsides to help prevent increased sediment delivery by retaining as much of the materials as possible on the land, according to the report.

Seeding by hand is planned on 14 lots covering 25 acres to reduce erosion and prevent the introduction or spread of invasive plants on land with high soil burn severity. ♦

# Nonpoint Source News



## Central Valley Selenium Control Program Seen as Success

Farmers in the Grasslands area of the San Joaquin Valley are asking for a decade-long extension to delay the 2010 selenium goals established in the basin plan for the Central Valley.

As a result of the request, the Central Valley Regional Water Quality Board (Central Valley Board) reviewed the basin plan. The water quality control plan for the San Joaquin and Sacramento river-basins includes a selenium objective for Mud Slough. Discharge of agricultural subsurface drainage water is prohibited after Oct. 1, 2010 unless the water quality objectives for selenium are met, according to a staff report prepared for the Board's Sept. 13 meeting.

"The dischargers have made significant progress towards this goal," the report states, "but have been unable to complete the drain-

age projects that would enable them to eliminate discharges from the project area entirely."

The Grasslands area consists of 105,000 acres of farmland, wildlife refuges and duck clubs on the west side of the San Joaquin Valley. Return flows from this area are high in salt and selenium. Selenium is an essential trace mineral for people and animals that can become toxic at high doses. Drainage in the 1980s from the Westlands Water District resulted in high selenium levels at Kesterson Reservoir in Merced County, a problem linked to waterfowl deformities that ultimately closed the reservoir. Irrigation drainage water was provided to the reservoir through the partially completed San Luis Drain.

In 1996, Grassland Area farmers formed a regional drainage entity under the umbrella of the San Luis

and Delta-Mendota Water Authority to implement the Grassland Bypass Project. The project consolidates subsurface drainage flows on a regional basis and uses a portion of the San Luis Drain to convey the flows around wildlife habitat areas. Drainage recycling systems mix subsurface drainage water with irrigation supplies under strict limits, according to a 2007 report.

Grasslands Area farmers have made significant improvements in water quality since waste discharge requirements were set in 1998, Gail Cismowski, the Central Valley Board environmental scientist, said at the Sept. 13 meeting – adding that the staff supports considering the request for a time extension.

Joe McGahan, drainage coordinator for the Grassland Area farmers, said 40,000 acre-feet of water were discharged from the Grasslands area in 1995 containing 12,000 pounds of selenium and 230,000 tons of salt.

By 2006 the selenium load was reduced to 3,800 pounds and salt was cut nearly in half, he said.

McGahan said Grasslands Area farmers have asked for a delay in the selenium goals to further refine the technology used in the drainage effort. Selenium performance goals and water quality objectives for the San Joaquin River have been met, he said, and selenium is not impacting the waterway.

David Cory, representing the Firebaugh Water Canal District in Fresno County, said the program has been very effective at removing selenium and salt, but that further concentration of drain water is sought.

Professor Peggy O'Day of the School of Natural Sciences at the University of California, Merced, said, "The practical goal is to get agricultural discharges down in salt and selenium so when the runoff goes into the San Joaquin (River) it's not impacting the quality of the river."

Selenium in the Central Valley is from sediment in the soil – not from



industry or a pollution source – and agricultural practices can wash the mineral into runoff, she said.

Karl Longley, chair of the Central Valley Board, said the selenium control program is commendable but said a second issue – the build up of salt in the region – must be resolved to sustain agriculture over time.

“If this is going to be a viable economy for the next century, obviously there have to be other solutions,” he said.

Supporters of what has been termed an “out-of-valley solution” cite the success of a brine line in the Santa Ana area of Southern California that transports salt-rich wastewater to the ocean.

Soapy Mulholland, a member of the Central Valley Board, said that while the best efforts possible have been undertaken to address selenium and salt problems, the issue remains unsolved. “It’s a horrible problem,” Mulholland said. “We don’t know what to do with it.” ♦

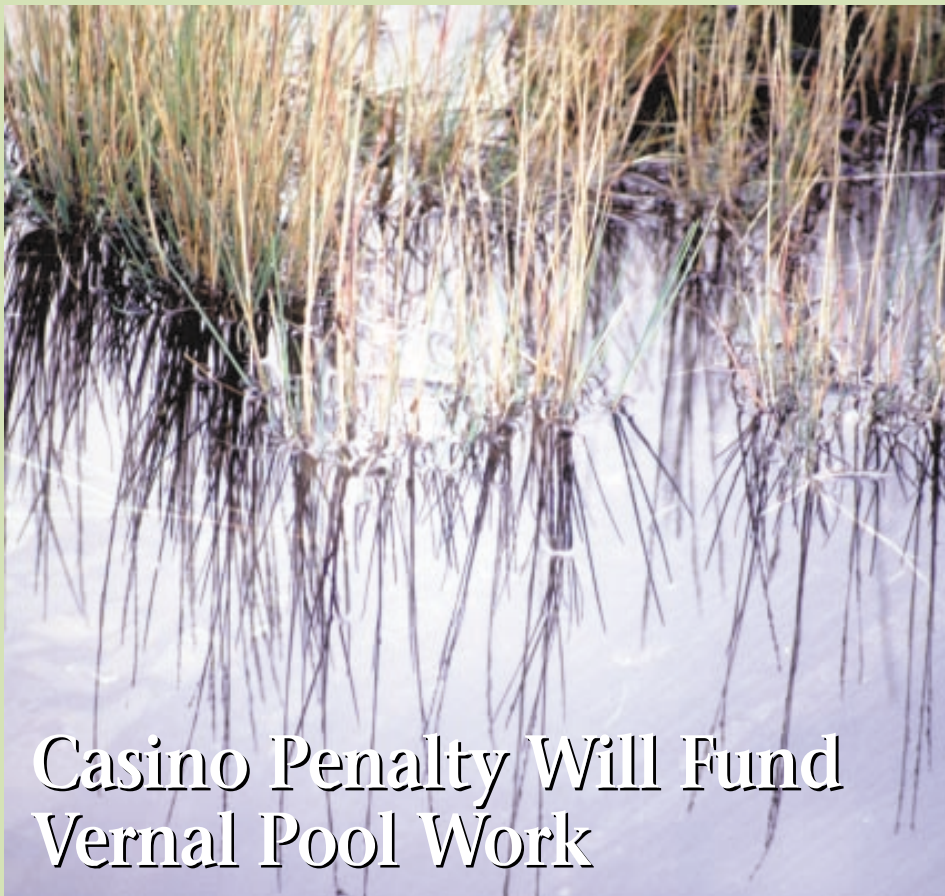
in documents filed this year as part of the settlement.

Enhancements to marshes and drainage in the vernal pool preserve will increase the time water stays in the site and the absorption of nutrients, the Central Valley Board said.

The treatment plant discharged treated wastewater to a tributary of Orchard Creek, which eventually runs into the Sacramento River. Problems at the plant led to reported coliform levels in the wastewater effluent exceeding Total Coliform Effluent Limitations.

Although numerous such violations took place, public health was probably not compromised, the Central Valley Board stated.

After ultraviolet systems couldn’t treat the effluent, the plant operator began using chlorine for disinfection, which led to possible effluent chlorine residual violations. These violations were not reported to the Central Valley Board until after the staff found the potential chlorine residual violations when inspecting coliform violations. According to the Central Valley Board, it took many months to resolve the problems with the casino’s treatment plant. ♦



## Casino Penalty Will Fund Vernal Pool Work

A Northern California casino will pay \$300,000 in penalties for problems with its wastewater treatment plant after the mechanical failure of advanced technology failed and existing ultraviolet systems couldn’t treat effluent with increased turbidity concentrations.

Half of the State Water Resources Control Board (State Water Board) penalty paid by Thunder Valley

Casino, located in Rocklin 30 miles north of Sacramento, will go toward improving water quality at a vernal pool preserve near the city of Lincoln. The other \$150,000 will go into the State Water Board’s cleanup and abatement account.

The casino and preserve are within the same Lower Sacramento River Watershed, the Central Valley Regional Water Quality Control Board (Central Valley Board) noted

## Water Quality Conferences

Two headline issues will be featured at two upcoming water quality conferences.

Reconciling food safety and environmental protection will be discussed at a Nov. 7-9 conference sponsored by the Central Coast Agricultural Water Quality Coalition. The **2007 National Conference on Agriculture & the Environment** in Monterey also will focus on data, methodology, trends and advancements in water quality monitoring; agricultural and environmental innovations; and

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exploring the nexus between agricultural and environmental sustainability. For more information, visit <http://www.agwaterquality.org/2007conference>

Successful watershed-based approaches to nonpoint source pollution will be the focus of a Spring 2008 conference. The **2008 California Nonpoint Source Conference – Integrated Watershed Management: Reducing NPS Pollution** will be held at the Mission Valley Marriott in San Diego May 5-7.

According to the State Water Resources Control Board (State Water Board) web site: “This conference will be aimed at showcasing how sustainability and an inte-



grated holistic watershed perspective can be incorporated into non-point source problems solving steps, through local regional and global efforts.”

The State Water Board, Regional Water Quality Control Boards, California Coastal Commission and U.S. EPA Region 9 are sponsors of the conference. For more information visit, <http://www.waterboards.ca.gov/nps/conference2008.html> ♦

## Days at the Beach

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beachfront properties of Malibu. But Los Osos shares the same lack of a sewer system as the more glamorous community to the south.

Dean Wendt, a marine biologist who has a PhD. from Harvard University and works with the San Luis Obispo Science and Ecosystem Alliance, said the Central Coast Regional Water Quality Board “has shown the septic systems have contaminated the groundwater” in the Los Osos area located next to Morro Bay.

The Central Coast Regional Board in 2007 stated that discharges from septic systems “have degraded groundwater quality and threaten public health.”

Shallow groundwater seeps in some areas of Morro Bay are accessible for sampling and indicate that fecal coliform bacteria greatly exceed standards, the state agency noted. “DNA testing indicates the largest source of the bacteria is humans,” the report stated.

“The impact on Morro Bay and the ocean is less well-documented,” Wendt said. “No one can answer what the septic systems are contributing to the Bay.”

Dan Berman, program director for the Morro Bay National Estuary Program, said connecting ocean water problems and septic is not simple. “It’s not an easy thing to establish these links in any scientifically conclusive way.”

Anecdotal evidence, along with DNA technology used several years in a study showed a mix of sources, including humans, cattle and horses, in Morro Bay.

“All of it,” Berman said, “suggests that septic in Los Osos are contributing at least on a very local scale to bacterial pollution.

There’s certainly nothing suggesting Los Osos septic are contaminating ocean water throughout San Luis Obispo County.”

As the Central Coast and Southern California deal with septic tanks, Malibu resident Ed Niles said trash along the four-lane, 26 miles of Pacific Coast Highway through the community is an overlooked problem for ocean water quality.

The roadway can be thick with litter, particularly after holidays like the Fourth of July, Niles said. “All of it goes directly to the Malibu lagoon,” he said.



Surfrider representative Wilson agrees the highway litter adds to pollution. “Anything that goes on the road,” he said, “is going to go into the ocean without treatment.”

Dan Freeman, Caltrans deputy district director for maintenance in Los Angeles and Ventura counties, said the state agency works with Malibu, which is responsible for street sweeping of the Pacific Coast Highway within the municipal limits. Caltrans takes care of the trash, Freeman said.



"We have a concern about anything that gets into that system," he said of litter that can reach storm drains that go into the ocean.

Caltrans spokeswoman Jeanne Bonfilio, said of the historic highway that parallels the Pacific, "It's a highway that means a lot. It's beautiful.

"We're trying hard through our partnership to keep it that way."

The Orange County city of Dana Point, in its own effort to target trash within the municipal streets, switched in 2002 from broom sweepers – often inefficient at capturing small particles, the city said – to vacuum sweepers that remove much more material and pollutants.

The city is also "exploring Mother Nature's potential contribution to impaired water quality in the form of bird wastes," according to a February municipal report.

"At low tide, seagulls and other birds feed upon exposed marine life," the document notes. "These birds also travel to the landfill in San Juan Capistrano for their food. The one thing that is certain is that birds will return to the beach and leave a large amount of untreated bacteria.

"Bird waste has a very high bacteria count – and its impact on coastal water quality and human health has yet to be quantified," the city said. A project is underway to collect bird droppings at Baby Beach at Dana Point Harbor in Orange County to see if removal of the droppings results in a drop of bacteria counts in beach water.

While birds and trash are targeted, Wilson of the Surfrider Foundation said conditions at California beaches have generally improved. A beach in northern Orange County was known as "Tin Can Beach" when he started surfing in the 1960s, he recalled. "The trash was pretty horrendous."

Along with septs and highway litter, harmful algal blooms are an issue for ocean water quality. Excess



*Bolsa Chica State Beach, aka "Tin Can Beach," taken in 1960*

nutrients are linked to the increased growth of algae in the ocean, known as algal blooms. Algae in the form of phytoplankton are a vital part of the ocean's food web but can increase to a potentially toxic bloom when nutrient levels and water temperatures rise.

The Center for Sponsored Coastal Ocean Research in Maryland noted that a massive algae bloom along the California coast in April led to hundreds of seabird and marine mammal deaths from San Luis Obispo to Los Angeles.

Marine biologist Wendt in San Luis Obispo said the blooms are part of a natural cycle but that the questions for scientists are 1) whether they're now more frequent and 2) more severe.

"It's the same kind of situation in climate change," Wendt said. Tracking algal blooms over time is the way to answer the questions, he said.

Coastal Water Research Group researcher Dwight participated in a

2002 study of urban runoff and coastal water quality in Orange County that found runoff discharged by the Los Angeles, San Gabriela and Santa Ana rivers represent a primary source of coastal water pollution.

Dwight worked as well on a 2005 case study of illnesses from beach use in Orange County that noted decades ago domestic sewage discharged along coastlines was the primary sources of beach water pollution in the United States. Upgrading of sanitation facilities to comply with federal law has led to a new focus on untreated urban runoff, the study said.

The potential problem of virus concentrations in beach water is under study, Heal the Bay notes in its most recent Beach Report Card. The amount of indicator bacteria present in the surfzone is now the best indication of whether a beach is safe for recreation contact, the group said.

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## Students Serve as “Storm Drain Detectives”

By RYAN MCCARTHY

The “Storm Drain Detectives” in the Northern California city of Lodi got their start after problems at the city’s water treatment plant resulted in a fine assessed by the Central Valley Regional Water Quality Control Board.

Up to half of the payments for the 2000 penalty could go into an educational program, said Frank Beeler, the city’s wastewater superintendent. The result? A cadre of Tokay High School students – the Storm Drain Detectives – who test the Mokelumne River running through Lodi. The program is praised for allowing teens an up-close look at water issues.

Stormwater and what goes into municipal drains can rate low on

the list of issues for most youths, said Barry Larson, a recently retired chemistry teacher at Tokay High School. “After they get started, they see there’s something to this,” Larson said of the response of students. “This is a really good introduction to real world environmental issues.”

Results of testing include findings that water samples taken from the Mokelumne River after a major storm showed the water was not toxic to the adult *Ceriodaphnia dubia*, known as the “water flea.” The organism is a small crustacean that is sensitive to pesticides, heavy metals, and other toxic substances.

The six monthly water tests to monitor stormdrain runoff measure dissolved oxygen, water temperature,



*Ceriodaphnia dubia*

turbidity, electrical conductivity and pH for how acidic the water is.

According to the city of Lodi, removal of river vegetation can change water temperature as can soil erosion, stormwater runoff and changes to river flow. Bank erosion, excessive algal growth, and changes in the river’s flow increases turbidity while runoff from city streets and farms can significantly increase nitrate levels.

John Teravskis, with the environmental consulting firm WGR Southwest, which has been involved with the Storm Drain Detectives program, credits city watershed education coordinator Kathy Grant for much of its success. “She has a passion for the Mokelumne River and water quality,” Teravskis said of the river that runs through Lodi.

Grant, who describes herself as a “stormwater geek,” said the water quality measurements the students take are demanding. “It’s kind of like driving a Ferrari,” she said. “You’ve got to be really careful.”



Students monitoring the Mokelumne River



## The Latest News

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He added that the Central Valley Board's goal is to look at alternatives to how groundwater discharges are regulated.

Environmental groups have criticized the Central Valley program as "makeshift" and lacking enforcement but Pamela Creedon, executive officer for the Central Valley Board, said the undertaking is achieving its goals. "This is a good starting point," she said, describing the program as the first concentrated effort in the United States to deal with agricultural runoff.

Jennings, however, is critical of the program – saying it allows coalitions of farmers to oversee implementation of waiver conditions.

"These legally fictitious coalitions have no enforcement authority and cannot require an individual discharger to take any specific action," the Sportfishing Alliance said in an August statement. "The Regional Board doesn't know who is actually discharging, where the discharges are occurring, the constituents being discharged, the volume and concentration of discharged pollutants, whether management measures have been implemented or whether implemented measures are effective."

The group challenged the ag waiver program in a petition to the State Water Board last year; the program was upheld. The Sportfishing Alliance and Baykeeper of San Francisco filed a lawsuit in Sacramento County Superior Court earlier this year against the Central Valley Regional Board over the ag waiver program.

Attorney Michael Lozeau, who represents the environmental groups, said no hearing date has been set yet for the lawsuit filed in Sacramento County Superior Court. He told *The California Runoff Rundown* that despite the coalition effort to improve water quality "the data all indicate the problem is just as bad if not worse."

## TMDL Roundup

### Los Angeles (Region 4)

Regional Board approved August 9 a TMDL for **trash in the Los Angeles River Watershed.**

Contact Ginachi Amah 213/576-6685; link to staff report at: <http://www.waterboards.ca.gov/losangeles/html/bpaRes/bpa.html>

Regional Board approved June 7 TMDLs for **trash in Legg Lake, Lake Elizabeth, Munz Lake, Lake Hughes, Machado Lake, the Santa Clara River, the Ventura River Estuary, Calleguas Creek, Revolon Slough, Dominguez Channel and Beardsley Wash.**

Contact Eric Wu 213/576-6683; link to staff report at: <http://www.waterboards.ca.gov/losangeles/html/bpaRes/bpa.html>

### Colorado River Basin (Region 7)

Regional Board approved May 16 a TMDL for **bacteria indicators in the Coachella Valley Stormwater Chanel.**

Contact Ivory Stark 760/776-8933; link to staff report at: [http://www.waterboards.ca.gov/coloradoriver/tmdl/TMDL\\_Status.htm](http://www.waterboards.ca.gov/coloradoriver/tmdl/TMDL_Status.htm)

### Santa Ana (Region 8)

The U.S. Environmental Protection Agency on May 16 approved a TMDL for **bacterial indicators in the Middle Santa Ana River.**

Contact Hope Smythe 951/782-4493; link to staff report at: <http://www.waterboards.ca.gov/santaana/html/tmdls.html>

"We have a lot more sediment issues," he said. "We haven't seen any improvement whatsoever."

John Hewitt, attorney for the California Farm Bureau Federation, said the legal action by the environmental groups is "not anything more than another attempt to undermine the progress agricultural groups are making."

"There's an incredible awareness of water quality obligations and potential impacts," he said.

The Central Valley Board acknowledged that not all the water quality problems are being fully addressed "due to a variety of technical and resource issues," and that the focus has been on effectively using the resources at hand by prioritizing quality issues so that "high priority and critical issues are being addressed first."

Liz Kanter, a spokeswoman for the Board told *The California Runoff Rundown* that officials understood the ag waiver program "wouldn't be a quick fix." "It was intended to be a long-range program," she said. ♦

## Days at the Beach

CONTINUED FROM PAGE 13

Unlike bacterial indicators, no available data links health risks involved with virus concentrations and swimming, Heal the Bay said. An epidemiology study began this summer to try to identify viral pathogens at Doheny State Park. Surf rider Beach is planned to be tested in 2008. The study is expected to be completed within three years. ♦

If you would like to receive this newsletter electronically, please send your email address to: [rrichie@watereducation.org](mailto:rrichie@watereducation.org)

## Share Your Success

**H**ave an interesting story to tell about your nonpoint source pollution control or stormwater program? Why not share your experience with others through *The California 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 Ryan McCarthy, Water Education Foundation, at (916) 444-6240, or send e-mail to [rmccarthy@watereducation.org](mailto:rmccarthy@watereducation.org).



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