

PUMPING IRON(GATE)

A riparian whose family, community, and habitat are destroyed goes into hiding, matures, and, as an adult, rises up to take revenge on the Bush Administration, the killer of scores of Pacific Coast salmon. This is the fantasy script of "Conan the Riparian," the tale Klamath Basin tribes, fishers, and enviros want to tell, and they'd like to cast Governor Arnold Schwarzenegger in the title role.

Members of the Karuk, Yurok, and Hoopa Valley Tribes, fishing interests, and enviros descended upon Sacramento on a clear and breezy mid-March day to highlight the plight of the salmon runs in the Klamath region and efforts to restore the basin. One result of the pre-rally publicity was that leaders from the three tribes and representatives of fisheries groups, including the Institute of Fisheries Resources, sat down to separate meetings with Secretary of Natural Resources Mike Chrisman and Chief of Staff Terry Tamminen.

The goal of these meetings, says Todd Bedrosian of the Hoopa Valley Tribe, was to get the ear of the Schwarzenegger Administration, to make the case for the governor's involvement in the hydropower license renewal process for the system of six dams on the Klamath. The lower four dams—which include Irongate and cover roughly 350 miles of the Klamath Basin—are the primary focus of the tribes, fishing groups, and enviros.

Removing these dams would go a long way toward improving the quality of the river that was once the third largest salmon-producing river in the U.S. Today, the groups say, the river's water is a toxic cocktail that produces less than 8% of the number of fish that historically came from its waters. A restored Klamath could be home to a fishery worth \$4.5 billion, but the current fishery is worth only a fraction of this, says Zeke Grader of the Institute for Fisheries Research. Grader points out that not only do the commercial fisheries suffer, but also the cultural and nutritional value of the salmon to the Karuk, Yurok, and Hoopa is diminished.

These are the issues tribal reps and fisheries interests discussed with Chrisman and Tamminen, says Grader, who, along with Bedrosian and colleagues, is hoping the two high-level beauracrats might convince their former bodybuilder boss to do some heavy policy lifting, which could tip the balance in favor of the Klamath Basin. "Governor Schwarzenegger has an entirely different entree and rapport with the White House, and it's very significant that we could get the tribes to meet [with Tamminen and Chrisman]," explains Bedrosian.

For now, the parties are waiting. The Federal Energy Regulatory Commission is currently reviewing the license renewal application for PacifiCorp. Representatives from the Hoopa, Karuk, and Yurok Tribes, fisheries, and enviros are in parallel negotiations with PacifiCorp officials to work out a settlement. **KC**



Trash on Trial

One look at the Bay from the Bay Trail after a heavy rain makes it clear that litterbugs are alive and well. A marsh strewn with Styrofoam peanuts, plastic grocery bags, drinking water bottles, junk mail, old appliances and tires; a plastic six-pack ring just waiting to tangle with a grebe—they're all symptoms, depending on who you talk to, of a problem that's getting worse, despite the progress we've made since the days when people pulled up in their cars and dumped household waste directly into the Bay.

"The Bay is the butt end of the system," says the S.F. Regional Water Quality Control Board's Steve Moore, who suspects that "a lot of society isn't buying into efforts to reduce solid waste. Ironically, it may be that aggressive pollution reduction efforts—like smaller trash cans, etc.—are forcing more trash into the water stream via storm drains and the unseen urban creeks."

"It's a horrendous multi-faceted problem," concurs Bret Calhoun, co-chair of the Santa Clara Valley urban runoff pollution prevention program and member of its ad hoc trash task force group. "You've got trash from highways, general litter, trash from schools, and trash from the homeless, a huge source of the problem." In 2004, volunteers removed 50,000 tons of trash from Lake Merritt, trash that would have ended up in the Bay. That was the largest haul since the Clean Lake Program began in 1998, says the Lake Merritt Institute's Richard Bailey, although volunteer cleanups have also become more frequent. Out of 61 storm drains that drain to the lake, only two have trash filters (continuous deflection separation devices), says Bailey, although the city of Oakland is going out to bid for installation of the next two, which will have greater capacity. "The trash just keeps on coming," says Bailey, who has inadvertently become somewhat of an urban trash anthropologist (see PEOPLE, page 2).

So where is it all coming from? According to a study done in Los Angeles by consultants for the state water board during the late 1990s, most urban trash comes from single males in their teens and twenties, who admitted throwing cigarettes butts and litter from their cars onto the street, and trash directly into storm drains. In response, the board has begun an "Erase the Waste" campaign designed to change the behavior of the group it calls "the rubbish rebels."

While changing behavior is a necessary step, says Bailey, who works with school children at Lake Merritt trying to teach them that littering is "uncool," the scale of the problem is so huge at this point that education alone isn't enough. Bailey says we also need technical fixes and regulation. The Regional Board has warned Bay Area cities that a

TMDL for trash might be the next thing to come down the pipe if the problem doesn't get better, says BASMAA's Geoff Brosseau. While Lake Merritt is already on the 303(d) list as impaired by trash and low oxygen, the Board added urban creeks and the Bay shoreline to its internal watch list in 2002. For now, says Brosseau, his agency has been asked to take a closer look at the issue to see what can be done.

"That indirect connection—of how a chewing gum wrapper thrown into the gutter ends up in the Bay—is hard for people," says Brosseau, who thinks we need to revive the "litter" campaigns of the 1960s. "One thing I'm thinking about is to starting talking more about 'litter' versus 'trash'—to lean on people more about not wanting to see it around where they work or play, and by the way, we don't want it to end up in our waterways or the Bay." The 90 cities, counties, and special districts that make up BASMAA are tackling the problem in two ways, says Brosseau: by inventorying "hot spots" and devising ways to deal with them, and by stepping up a regional advertising campaign about keeping watersheds beautiful.



Illustration by Lisa Krieshok

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CAPITOL BEAT

BEACH CHECKUP

Beaches may not be the first land form that comes to mind when people think about the Bay—yet there are 50 of them in the nine Bay Area counties. Last fall, the sandy swaths got a boost when Assembly Bill 1876—spearheaded by Assemblywoman Wilma Chan of Oakland and Save the Bay—was signed into law. The Healthy Bay Beaches legislation will extend to Bay beaches an existing statute that requires regular, uniform water quality monitoring at the state's coastal beaches, and posting of health advisories or beach closures when bacterial contamination exceeds safe levels. Healthy Bay Beaches will require each county's public health department to conduct weekly, uniform monitoring in summer months at Bay beaches that have at least 50,000 visitors annually and are located where a stream or storm drain empties into the Bay. The bill will affect approximately 30 Bay beaches, about half of which are already being monitored voluntarily. Unsafe levels of bacteria have caused a significant number of closures in the past several years.

The Healthy Bay Beaches legislation includes a provision that requires the state to provide sufficient funds before the required monitoring takes effect, to protect local governments from facing an unfunded mandate from the state. It also makes Bay Area counties eligible for state funds designated for beach monitoring. One possible delay in boosting beach health: existing funds are tied up for the next two years in contracts with coastal counties. When those contracts are up, Bay Area counties will be eligible for some of the money, but will still have to battle coastal counties to get their hands on it. If additional state funds are included in the FY05-06 budget, the law could take effect as soon as July 2005.

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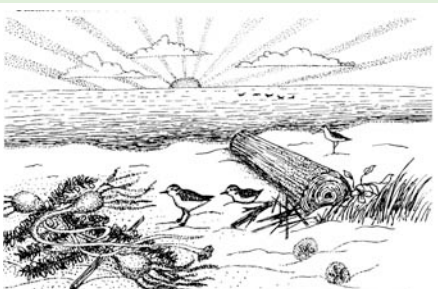


Illustration by Karina Racz, Farallones Marine Sanctuary Association © 1999.

PEOPLE

LAKE'S PATRON SAINT

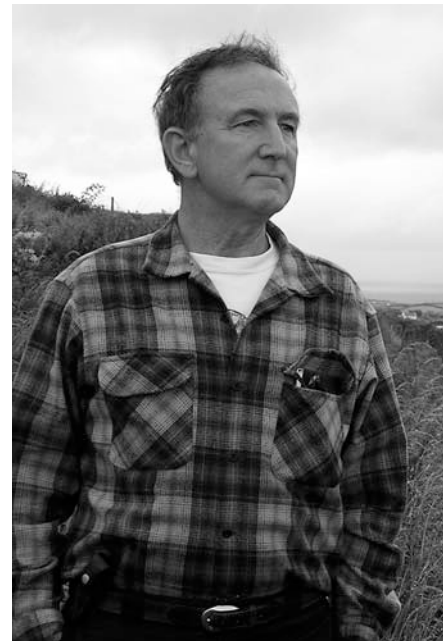
A pair of dentures, a miniature casket carrying a pet mouse, human ashes sealed in a container, an arm (from a mannequin), a No Littering sign, tens of thousands of cigarette butts, and a couple kilos of cocaine are just a few of the cultural artifacts Dick Bailey, Director of the Lake Merritt Institute, has netted from Lake Merritt over the years.

Although he may feel like a glorified garbage man at times (last year, under his direction, volunteers removed 50,000 tons of trash from the lake), Bailey plays a critical role in educating people about the lake, its 4,658-acre watershed, its connection to the Bay, and its wildlife, says Susan Porter, a teacher at nearby St. Paul's School who won an EPA award for the lake-based service-learning program she developed with Bailey for her sixth-graders.

"He has a lot of creativity and imagination, sometimes off the wall ideas, but they work," says Porter. When Bailey suggested making some coffin-sized boxes, filling them with tools, and installing them around the lake so that passersby could remove trash from the water if they were so inspired, Porter had her doubts. But people are using them, says Porter. She also thinks he does a great service by posting educational and natural history information on bulletin boards around the lake. "He's too modest," says Porter. "His real value is that he knows the lake and understands its biology." When working with her students, she adds, he gives them a fair amount of freedom and lets them find their own little niche. "He gives them a positive experience. The kids feel they have a stake in the lake."

Bailey's interest in the lake began in the 1980s while he was working as a consultant for Alameda County monitoring water quality. "I saw a number of problems I thought could be fixed," he recalls. He wrote a grant proposal to the Coastal Conservancy to come up with a resource enhancement management plan. The proposal was funded through the City of Oakland, and the plan was published in 1992. But part of the plan was to establish a non-profit that would steward the lake, says Bailey. "I knew if [the plan] was just a written document, it would sit on the shelf." In 1996, he became the director of the institute, which, under contract with the city, keeps the lake clean, maintains its aeration fountains, consults with the city on ways to improve water quality, and educates the public about urban runoff.

Prior to taking on the lake, Bailey worked for the S.F. District of the Army Corps as well in the U.S. Fish and Wildlife Service's endangered species program. He has a bachelor's and mas-



ter's degrees in zoology and a Ph.D. in Forest Resources from the University of Georgia; he worked for the state of Georgia for Jimmy Carter for several years. Later on, he worked for a company that made a soil amendment from wastewater sludge, and at one point, even drove a taxi, all of which "somehow led up to working for a non-profit."

Bailey's vigilance seems to be making a difference, despite ongoing challenges. Porter says that before Bailey arrived, smelly algae blooms in the lake were so frequent that "you could barely stand to drive—let alone walk—by it." Steve Moore, with the S.F. Regional Board, says Bailey's on-the-ground presence "helps keep the city of Oakland engaged in water quality issues—he lets us know whether management actions are working. All urban lakes should be so lucky."

But Bailey wants more for the nation's oldest wildlife refuge. "I would like to see the lake opened to the Estuary with increased tidal flows. I'd like to see all storm drain runoff treated in some manner before it gets to the lake, all 61 inlets treated, and maybe even an urban fishing program [which he knows might be controversial], in conjunction with restoring waterfowl habitat." He hopes to create some beach and island habitat for the thousands of migratory birds that visit the lake each year, and establish areas that are off limits to people as well as places specifically for people.

Despite his occasional frustrations with city and governmental red tape—and the constant influx of trash—Bailey enjoys working for a non-profit. "It lets you do work that has the potential to make a difference, and you can see the difference." **LOV**

RESTORATION

SCISSORS, PAPER, SALT PONDS, MARSH?

"We can lay the best plans, but the big hand of nature will play a part. There will be surprises," says the Coastal Conservancy's Steve Ritchie about the South Bay Salt Pond Restoration Project, one of the largest wetlands recovery projects ever undertaken in this country. Since the state and federal governments acquired 15,100 acres of salt ponds from Cargill Corporation in 2003, the project team has been busy hashing out plans for a landscape mosaic of managed ponds and tidal marshes that will provide habitat for wildlife, allow public access, and insure flood protection. All the paperwork will give way to earth moving in 2008.

So little is known about how to transform salt ponds into tidal marshes that the restoration will follow the concept of "adaptive management." It will take place in phases; the first implementation phase will be monitored carefully and the findings will guide later phases.

"The planning phase has proceeded smoothly so far and it's on schedule," says the Conservancy's Amy Hutzel. And the decisions made so far have the blessing of the national science community. "In February, at a two-day charette, scientists from around the country worked with our maps and data from the South Bay and came up with recommendations," says Ritchie. "Fortunately, their ideas were similar to ours, confirming that our science is headed in the right direction." Staying on schedule and on track has been no small feat considering the number of people involved in making decisions. Working together have been a Project Management Team composed of staff from the lead agencies—the Coastal Conservancy, Fish and Game, U.S. Fish and Wildlife, Army Corps and other local agencies—as well as a Science Team, several technical consultant teams, state and federal regulatory agencies, and a Public Stakeholder Forum.

The group has agreed on three preliminary project alternatives—different combinations of tidal habitat and managed pond habitat. These alternatives will soon be turned into final alternatives based on a weighting and ranking exercise, which will entail measuring the alternatives against a long list of criteria. Also considered will be a "landscape-scale analysis." Due out in May, this study is determining how much sediment exists in the Bay to fill in the salt ponds and create marshes and how the new mix of habitats may affect birds.

The final alternatives will feed into the CEQA/NEPA analysis scheduled to begin in

September and extend through late 2006 when the project team will select a "preferred" alternative, the basic restoration plan. Then, the permitting and design phase will begin and stretch into 2008.

"Some good news is we're confident now that we'll be able to complete the Bay Trail through the restoration area. We'll be able to bring it to the edge of the marsh and, in some cases, to the edge of the Bay," says Ritchie.

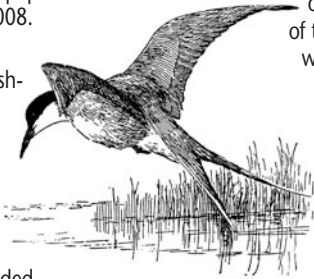
As the planning has rolled forward, the Interim Stewardship Plan (ISP) has gone into effect with the goal of reducing the salinity in many ponds to match that of the Bay. To accomplish this, water control structures have been opened at all of the Eden Landing ponds and half of the Alviso Ponds, allowing Bay water to circulate through. The results have been encouraging, says U.S. Fish and Wildlife's Clyde Morris. "After salinity levels dropped, more pelicans, terns, cormorants and wintering water fowl flocked to the ponds."

"We're learning firsthand how to manage ponds," says Fish and Game's Carl Wilcox. "We've had problems and we've had to make adjustments. Dissolved oxygen levels plummeted at an Alviso pond because of high algae levels—a totally unexpected problem. And at Eden Landing, a structure failed, so we can't control the water and now the area alternates between mudflats and open water. But this is giving us an early opportunity to study how wildlife respond to different types of pond management."

Starting this spring, nine more Alviso ponds will be connected to the Bay, and three of them will be managed at salinity levels three or four times higher than the Bay's to provide habitat for brine shrimp and brine flies and to attract the grebes and phalaropes that eat them. In 2006, some Coyote Creek ponds will be restored to tidal action.

There are still many questions to answer and adjustments to make, says Ritchie. "Can we reduce the number of salt ponds and still maintain a sizeable shorebird and waterfowl population? How many salt pond dependent birds can we cram into the smaller area? If these species adapt well we may decide to have more tidal action ponds. If not, we won't. We'll open levees and move dirt and expect to see certain things—marsh on the left, tidal flats on the right; but the opposite could happen—and that could be better."

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SCIENCE SPOT

AVIAN (N)ESTATES



Salt pond restoration is tricky business. It's not just a matter of helping the marsh come back; the needs of the wildlife that use existing ponds for nesting or as winter habitat must also be addressed. Case in point: colonial

birds like the Forster's tern, Caspian tern, and California gull weren't part of the Baylands' original mix. Caspians first nested in 1916, Forster's in 1948, the gulls in 1980. But they're here now, in the thousands, and they need homes.

A recent article in the journal *Waterbirds* reports that as of 2003, 96% of the gulls, 80% of the Forster's terns, and 20% of the Caspians nested on salt pond islands and levees. Cheryl Strong, Waterbird Program Director at the San Francisco Bay Bird Observatory, and her co-authors warn that if the colony nest sites are eliminated, "there could be serious problems for these birds unless restoration plans include creation of new islands specifically designed to provide them with nesting habitat." There's also concern that as the project begins, the more abundant and aggressive gulls could displace the terns: most of the gulls nest in pond A6, which will be one of the first units to be converted to marsh.

"Will we be designing the restoration plan with a goal of having suitable habitat for gulls and terns? Absolutely," says Clyde Morris with the Don Edwards National Wildlife Refuge. The H. T. Harvey consulting firm, which has designed waterbird ponds in the San Joaquin Valley, is working on recommendations.

John Krause, with the California Department of Fish and Game, notes that by breaching levees in tidal restoration areas, nesting sites—*islands*—will be created (islands will also be created from dredged material). But any new habitat will need to be vegetation- and predator-free, and Strong points out that it may be difficult to shift the birds to new sites. Figuring out the bird habitat jigsaw presents yet another challenge for project managers. "Our goal is to have the same or better habitat in a smaller footprint," says Krause.

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WATERWARS

WHITHER TRINITY'S FLOWS?

Two salient facts about the Central Valley Project contracts stick in Tom Stokely's craw. The first is that 314,000 acres of the farmland belonging to contractors south of the Delta are waterlogged and salty, or at least well on their way to being unable to grow crops. Second, if these drenched, salt poisoned lands were to be officially retired (some are already dormant), the water that could be saved would amount to as much as one-half to three-quarters of a million acre-feet—water that could be put to other uses, such as flows for Trinity River fish.

But in the new CVP contracts, the same amount of water is still being promised to irrigation districts, says Trinity County's Stokely, despite the fact that so much of their land is unusable. In some cases, they are being promised even more water although they have less land needing the water. And that has Stokely suspecting other motives are in play.

"We believe the contracts and other proposals to send more water south are predicated on emptying out the reservoirs every fall. When winter comes they will fill up but not to overflowing [overflows would make water available for fish]," explains Stokely. "That's their plan for getting more water, but the rivers and the fish don't function on this schedule."

At the heart of the CVP contract renewals is the fact that BurRec has been using two sets of numbers to project contract water deliveries. In a document submitted to fisheries agencies to determine the impact of the CVP contracts on wildlife, delivery estimates for south of the Delta contractors hover at a very conservative level of between 58% and 61% of contracted amounts. But in documents on projected contract deliveries submitted to CVP contractors, the picture is rosier: deliveries to irrigation and water districts for their contract amounts will be steadily ramped up, with contractors to receive 90% of their water by 2021 and 100% by 2026.

In January, BurRec acknowledged this discrepancy. At the same time, when pressed about where it would come up with the water to meet these delivery projections in the future when it also has to uphold the 800,000 acre-feet for fish under the Central Valley Project Improvement Act and other requirements, the agency said it was "studying ways to get the water."

In February, amid little fanfare, Westlands Water District announced it was no longer pursuing its appeal of the July 2004 Ninth Circuit Court decision reinstating the Trinity River Record of Decision (ROD), bringing annual releases in the range of 340,000 to 815,000 acre-feet back to the Trinity. Since the 1960s when the federal government built dams on the

Trinity, 90% of the river's flows have been diverted to the CVP. Westlands spokesman Tupper Hull confirmed that the district is collaborating with BurRec and California water officials to find a source other than Trinity to make up its water needs.

Between the water needed to comply with the CVPIA and other laws and the loss of as much as 815,000 acre-feet annually to the Trinity restoration efforts, BurRec could need to find as much as 1.5 million acre-feet of water to fulfill its promised delivery levels. Where is this water to come from? Mike Orcutt of the Hoopa Valley Tribe worries that the CVP contract renewal process and other plans in the works to get more water through the Delta pumps could be used to circumvent the Trinity ROD by draining Lewiston Dam. "Whatever [Westlands] perceives to have lost in Trinity, they've gained back with

CALFED, water tie-ins, and then with CVP contracts and Napa," he says.

Orcutt says the Hoopa and other Trinity officials have requested that language be put into the CVP contracts reaffirming the Trinity ROD as the law and stating that the river has primary consideration.

Hull says Trinity River officials have little to worry about from Westlands, that it is making up for its lost water by sharing resources between the State Water Project and the CVP. "It's not new water, and it's not coming out of anybody's allotment," he explains.

Bunk, says Trinity's Stokely. "The Trinity is tied into everything."

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Potential Water Savings Associated with Retirement of Drainage-Impacted CVP Land*							
	ACRES	ACRES REQUIRING DRAINAGE SERVICE	% OF DISTRICT REQUIRING DRAINAGE SERVICE	MAX CVP CONTRACT AMOUNT (AF)	MAX CVP CONTRACT WATER SAVINGS (AF)	2002 CVP CONTRACT DELIVERIES (AF)	2002 CVP WATER SAVINGS (AF)
BROADVIEW WATER DISTRICT	9,515	9,515	100.00%	27,000	27,000	18,588	18,588
PANOCHÉ WATER DISTRICT	39,292	27,000	68.72%	94,000	64,593	66,743	45,863
WESTLANDS WATER DISTRICT	604,000	298,000	49.34%	1,154,198	569,455	776,631	383,172
EAGLE FIELD	1,438	1,435	99.82%	4,550	4,542	2,869	2,864
MERCY SPRINGS	3,589	2,417	67.35%	2,842	1,914	4,679	3,151
ORO LOMA	1,095	1,095	100%	4,600	4,600	3,173	3,173
WIDREN	881	881	100%	2,990	2,990	2,094	2,094
FIREBAUGH	23,457	23,457	100%	85,000	85,000	85,000	85,000
CENT. CAL ID	149,825	4,951	3.30%	532,400	17,569	532,400	17,569
CHARLESTON DRAINAGE DISTRICT <i>(portion of San Luis WD with drainage problems)</i>	4,314	3,000	69.54%	8,130	5,654	Not available	Not available
PACHECO WATER DISTRICT	5,175	5,000	96.62%	10,080	9,739	7,137	6,896
TOTAL	842,581	376,751	NA	1,925,790	793,056	1,499,314	568,370

TECHNOFIX

CLASSY PELLETS

The Sacramento Sanitation District doesn't quite turn straw into gold, but it does perform a recycling feat that would impress Rumpelstiltskin. Every day, a portion of the 161 million gallons of raw sewage that flows into the Sacramento Regional Wastewater Treatment Plant (SRWTP) is transformed into valuable fertilizer pellets safe enough for use on backyard tomatoes.

The first stop is the digester, a settling tank in which, for 15 to 20 days, bugs feast on the bacteria in the sewage. From there, Class B biosolids—an almost-pathogen-free but smelly glop—emerge. Most Class B biosolids are sent off to landfills or applied as fertilizer on commercial farms that grow grain for livestock.

But about a quarter of the unseemly soup journeys on through a maze of pipes and tanks, ultimately metamorphosing into bb-sized Class A pellets.

"First it passes into a centrifuge that removes more water, leaving behind a doughy substance that we call the cake," explains the Sanitation District's Ruben Robles. "The cake passes into a dryer drum where it is baked at 1,500 degrees to remove all traces of water, kill remaining pathogens, and form pellets."

Plant odors are controlled with chemical scrubbers that pull particles out of thin air and send them back to the dryer to form pellets. Nothing is wasted.

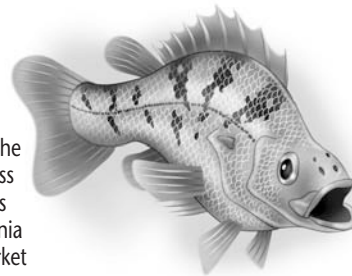
About 20 tons of the "black gold" pellets pour out of the plant each day, are loaded into tractor-trailer bins, and whisked away to farms around California—for free, at least for now.

"The pelletizer plant in Sacramento is the first in California, and part of a nationwide trend toward diversification in biosolids management practices," says Marlaigne Hudnall of the California Association of Sanitation Agencies. Although expensive to produce, the pellets have myriad advantages over the lower-grade Class B sludge, which can typically be used only on grains for animal feed. Class A pellets can fertilize everything from commercial non-food crops to commercial food crops, lawns, and home zucchini gardens. In the future, the District hopes to sell the Class A fertilizer to stores like Home Depot, as some sanitation districts outside California doing now; the stores will bag and market the public.

"The pelletization method makes sense in regions where other biosolid management methods won't work," says Liz Ostoich of Synagro, the company that owns the plant and operates it under contract with the Sacramento Sanitation District. Biosolids processed only to the Class B stage require large amounts of land upon which they can be spread, such as the Sacramento Sanitation District's 120-acre field next to the plant. "[The pelletizers] use a small footprint, about two acres, so they can be built in more locations, including urban areas," says Ostoich.

"The pelletizer takes solid waste management to a new level," says Sacramento County Supervisor Don Nottoli. "It completes the cycle by turning waste into an environmentally-friendly product for the public."

Contact: Marlaigne Hudnall (916)446-0388; Liz Ostoich (951)369-5056; Ruben Robles (916)876-6119 **SPW**



SPECIES SPOT

PUTTING PERCH TO WORK

Illustration by John Blanchard. Reprinted by permission of the SF Chronicle

Contra Costa Mosquito and Vector Control District's Chris Miller has a warning for mosquitoes bearing West Nile virus. They may soon face a formidable foe—the Sacramento perch—in an effort that would not only control mosquitoes but also help the fish recover. While the perch was once abundant throughout the floodplains of the Delta and Central Valley, it has almost winked out in the wild, probably out-competed by non-natives like striped bass. For the past 50 years, it has been found mainly in farm ponds and a few reservoirs around California and Nevada. This game fish, a good eatin' fish, the only unfish native to the western states, and a "species of concern" is one that naturalists and anglers would love to restore. Miller is trying to bring it back because it has a huge appetite for mosquito larvae.

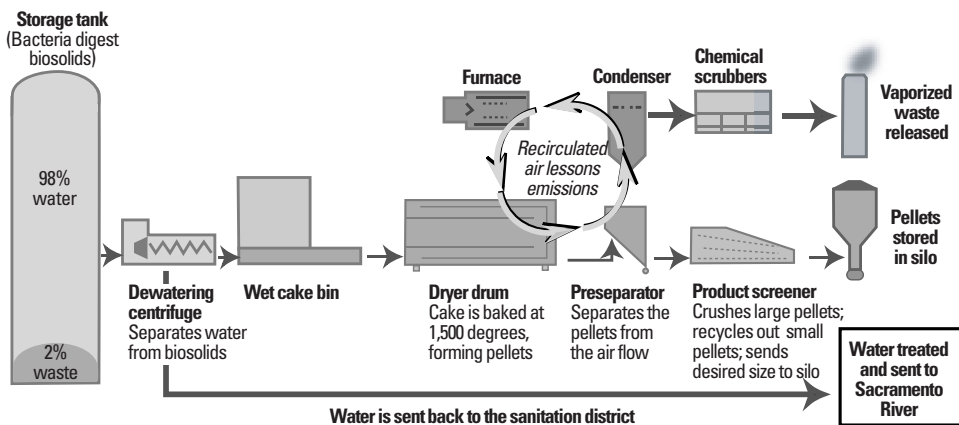
In his lab, Miller found that perch prefer mosquito larvae to other food. He also found that perch trounce mosquitofish—the biological control agent now favored by pest control districts—in mosquito larvae eating contests. Perch larvae are easy and inexpensive to produce, so it would be far more cost-effective to stock mosquito breeding waters with larvae than adult perch. But the trick is ensuring that the perch larvae make it to adulthood, when they begin to gobble up mosquitoes.

"In order to mature," says Miller, "perch larvae appear to need certain conditions, namely an abundance of freshwater rotifers and a certain water temperature. You don't know exactly when you'll get these conditions in the wild, so when you put the larvae out there it's hit or miss." He'll continue to study the problem over the next couple of years and test whether mosquito populations in field ponds decline after perch are introduced.

UC Davis' Peter Moyle says he's optimistic that the perch can be used to control mosquitoes and are a good alternative to mosquitofish, which, like any non-natives, could cause harm to native species.

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SLUDGE INTO BLACK GOLD



After Synagro/Sacramento Bee

TRASH CONTINUED

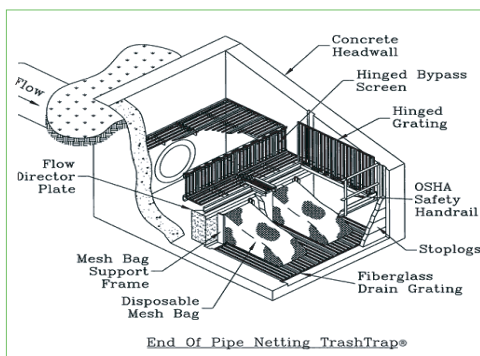
One big challenge, says Brosseau, is that so many cities are broke. "Lack of funding is our biggest obstacle. It's really reached a crisis stage." Most cities and counties have reached the maximum rates they can charge for stormwater programs, says Brosseau, and would have to go back to voters for any increase in funding, which "would be characterized essentially as raising taxes."

The cost of dealing with stormwater is also related to the physical size of a city. San Jose used to sweep its streets once a week but has cut back to once a month to reduce the \$4 million cost to \$1 million. Smaller cities may have an easier time, just because city workers have less ground to cover, yet even there, it takes a Herculean effort to keep up with the problem, says the city of San Pablo's NPDES coordinator, Karina Samkian. San Pablo, only 2.5 square miles big but with two major streams flowing through its midst, is hiring three new temporary employees just to pick up garbage from streets, median strips, creeks, etc. Maintenance crews walk the lengths of San Pablo and Wildcat Creeks within city limits, says Samkian, picking up trash. "At this time last year, our city manager just said 'enough is enough.'" But she worries that when the nearby regional landfill closes in 2006, illegal dumping will increase. In the meantime, the city has begun installing video cameras in problem spots, charges \$60 for parking violations on street sweeping days, and has stepped up creek cleanups, school education programs, and free dumpster days.

Samkian says that although the city hasn't reached the maximum rate it can charge for its stormwater program, it will next year. "We're going to have to do a lot more with very little money," says Samkian. San Pablo—like other cities—is considering taking the issue to voters. Oakland voters passed Measure DD to the tune of \$198 million for "clean water and safe parks," and last November, Los Angeles voters approved a \$500 million bond and parcel tax for stormwater, rivers, and beach protection. "It's fair to say voters are interested in doing these things if they understand them well enough," says the S.F. Regional Board's Larry Kolb.

With or without voter support, if we are going to stop the trash epidemic, say Bailey and Brosseau, we need education, volunteer cleanups, technological fixes—and regulation, which strikes a nerve with some. After Heal the Bay, Santa Monica Bay Keeper, and the Natural Resources Defense Council filed a lawsuit against the EPA under the Clean Water Act, the Los Angeles Regional Board implemented a trash TMDL, with the target of a zero trash discharge for the Los Angeles River. Overwhelmed by the performance goal of "zero," says Becker, a

END OF PIPE COLLECTION DEVICE



group of 29 cities—the Coalition for Practical Regulation—sued the Board. The city and county of Los Angeles have since settled, and, says Becker, and most of the other cities are beginning to take trash seriously. Becker says one of the biggest challenges with the TMDL was establishing what quantity of trash has adverse impacts—or "impairs a beneficial use," as the regulatory lingo goes. "We couldn't find any research literature or information that would tell us, for example, that five pieces of trash in a river would impact a beneficial use. I would love to have come up with a number because when you come out with zero discharge, everyone starts screaming."

To get the TMDL off the ground, says Becker, the Board provided lots of flexibility, giving cities a 14-year compliance schedule after two years of baseline monitoring, with an overall strategy of reducing their trash discharge by 10 percent over 10 years. One innovation the Board made is to recognize that to monitor and report the trash being discharged would be time-consuming and labor-intensive. The Board told the cities that if they installed a treatment system sized for a specific level of storm that met the performance level of commercially available systems that have been shown to collect 99.9 percent of the trash, their discharge would be considered zero.

"The cities and counties are working pretty actively; they came to us to talk about full capture for the city of Monrovia," says Becker. "The TMDL has encouraged entrepreneurship in developing trash collection systems that would meet this high performance level in a less expensive way." One such device—the end-of-pipe kind—resembles a giant mesh sock in a 20x40-foot cage. Another collection device is an underground "vortex separator," which can efficiently remove trash from large areas, says Becker.

Is a trash TMDL next in line for the Bay, and would the necessary political support be there? The Los Angeles City Council finally got behind the Regional Board after a trash net on the San

Gabriel River broke and sent trash spewing into Long Beach Harbor, says Becker. Cameras captured clamshell dredgers digging debris out of the harbor. "It was clearly a very significant problem, and there was a lot of press," recalls Becker. Says Moore, "You have to think about a lot of things, whether using that regulatory tool in Southern California has had a net positive effect or not." He has been supervising a trash monitoring program under his SWAMP (Surface Water Ambient Monitoring Program) for the past two years in an attempt to link trash with threats to aquatic life and human health. "Before we do a TMDL we need to have some defensible assessment tool," he says. But it appears that the S.F. Regional Board may be getting its trash "ducks" in a row. "Our study will point out the relatively worst spots and also give municipal governments some baseline data."

On 30-some sites around the Bay, in different demographic areas, Moore's staff regularly visits a 100-foot section of stream, along which they enumerate and categorize trash, then pick it up and remove it. From there, they assign assessment scores and revisit the same sites a few months later to estimate the return rates of trash. They also try to gauge whether the seasons or different types of public access are having an impact on the amount and type of trash they find, says Moore, who expects his team's data collection to be completed this fall and followed by a report. "It's the first regulatory study I'm aware of that looks at certain sites and rates of return of trash," says Moore, who adds, "Now that we have a framework for assessing, we'd be hard pressed not to include trash in our TMDL program."

Moore is disturbed that persistent materials like plastic are ending up in what he calls the cul de sac of the ocean. Says Moore, "It's an indicator that society is not taking responsibility." He thinks San Francisco's recent move to charge 17 cents for plastic bags is a step in the right direction—but that the city also blew an opportunity to close the loop in the public's mind about how storm drains connect to the sea. "There's nothing keeping the small, floating and persistent stuff—mainly plastic—from getting from trashed creeks into the gut of a turtle. That's what people don't get."

The bottom line, says Kolb, is that "People support protection of nature where they use it." While Southern California beaches are highly used and highly visible, as more folks take to the Bay Trail with their binoculars, we too may be less able to hide our heads in the sand—or Bay mud—when it comes to trash.

Contact: Melinda Becker: Mbecker@waterboards.ca.gov; Dick Bailey (510)238-2290; Steve Moore (510)622-2439 **LOV**

PLACES TO GO & THINGS TO DO



WORKSHOPS & CONFERENCES

APRIL

23
SAT & FRI

CYCLES OF CHANGE

TOPIC: Join instructor Grey Kolevzon on a natural systems interpretation and creek walk

LOCATION: Oakland

SPONSOR: Merritt College

Environmental Program with the East Bay Watershed Center
<http://www.merritt.edu/~envst/center.html>

Robin Freeman, (510)434-3840,
rffreeman@merritt.edu

MAY

3-6
TUES - FRI

ACWA 2005 SPRING CONFERENCE

TOPIC: California's Water Blueprint: Charting Our Course

LOCATION: San Jose

SPONSORS: Association of California Water Agencies and various other organizations and businesses

MAY

13
FRIDAY

BAOSC 7TH ANNUAL REGIONAL OPEN SPACE CONFERENCE

TOPICS: Protection and enjoyment of parks, natural habitats, and agricultural open spaces in the San Francisco Bay Area.

LOCATION: San Francisco

SPONSOR: Bay Area Open Space Council

<http://openspacecouncil.org/OSC/Conf05.html>

Cecily Harris (650)593-3281;
Cecily@openspacecouncil.org

SEPT

7-9
WED - FRI

PLASTIC DEBRIS, RIVERS TO SEA 2005 CONFERENCE

TOPICS: Bring attention to the issue of plastics in the marine environment with the goal of fostering action to stem the flow of plastics from urban areas to the marine environment.

LOCATION: Redondo Beach

SPONSORS: Algalita Marine Research Institute, the California Coastal Commission, and other boards and organizations

Miriam Gordon (415)904-5214 or
mgordon@coastal.ca.gov
http://www.algalita.org/rivers_to_sea_conference.html

JUNE

22
WEDNESDAY

BRAKE PAD PARTNERSHIP STAKEHOLDER CONFERENCE

TOPICS: Review modeling studies and results; discussion.

LOCATION: PG&E, San Francisco

SPONSOR: Brake Pad Partnership
Connie Liao (415)977-0380, ext. 336



HANDS ON

APR - DEC

9
SATURDAY

PLANT PORTRAITS: THE CALIFORNIA LEGACY OF A.R. VALENTIEN

TOPIC: A showcase of pottery decorator and designer Albert R. Valentien's watercolor and gouache paintings.

LOCATION: Oakland

SPONSORS: Oakland Museum of California's Natural Sciences Department and the San Diego Natural History Museum

APRIL

11
MONDAY

EXPLORING NATURE'S TREASURES IN THE EAST BAY

TOPIC: Learn about plans for year three of Close to Home's series of field trips and evening talks. Includes presentation by *Bay Nature* magazine editor, David Loeb: Why Bay Nature? a 25-minute slide show on East Bay Natural Treasures.

LOCATION: Oakland

SPONSORS: Close to Home, Bay Nature Magazine, Oakland Museum of California, EarthLight Magazine, and the Ecostewards of Montclair Presbyterian Church
<http://www.close-to-home.org/>
Sandra Lewis (510)601-5715;
Cindy Spring, (510)655-6658

MAY

14
SATURDAY

INTERNATIONAL MIGRATORY BIRD DAY

TOPIC: Join in the fun and learn about bird banding, take part in bird walks, and a host of family activities.

LOCATION: Alviso

SPONSORS: San Francisco Bay Bird Observatory, Santa Clara Valley Audubon Society, City of San Jose, San Francisco Bay Wildlife Society, Santa Clara Valley Urban Runoff Pollution Prevention Program, and the U.S. Fish & Wildlife Service.
<http://desfbay.fws.gov/IMBD.htm>
(408)262-5513



NOW & ONLINE

Alameda Creek Watershed Map. 2005. Alameda Creek Watershed Management Program. Free to current ACA members; cost of \$2 to new members. <http://www.alamedacreek.org/join%20%20Volunteer/MEMBERSHIP%20FORM.pdf>

Draft 2006 Integrated Report Guidance (IRG). February 2005. U.S. Environmental Protection Agency.
<http://www.epa.gov/owow/tmdl/draft2006IRG/>

Drinking Water Contaminant Candidate List 2. February 2005. U.S. Environmental Protection Agency. <http://www.epa.gov/fedrgstr/EPA-WATER/2005/February/Day-24/w3527.htm>.

Everyday Heroes Protect the Air we Breathe, the Water We Drink, and the Natural Areas We Prize: Thirty-Five Years of the California Environmental Quality Act. Spring 2005. Planning and Conservation League, PCL Foundation, and the California League of Conservation Voters.
http://action.nwf.org/pcl/notice-description.tcl?newsletter_id=1363072

Final Report: Biological Study of Container Vessels at the Port of Oakland. March 2005. Smithsonian Environmental Research Center. jzaitlin@port.oakland.com

Local Groundwater Management.

ACWA. (916) 441-4545 or
www.acwanet.com/products/acwamall/.

Monitoring Stream and Watershed Restoration.

Philip Roni. February 2005. American Fisheries Society.
<http://www.fisheries.org/html/publications/cat-books/x55047P.shtml>

San Francisco Estuary and Watershed Science, Vol. 3, Issue 1. Lauren Buffaloe. March 2005. San Francisco Estuary and Watershed Science.
<http://repositories.cdlib.org/jmie/sfews/>.

Virtual Flood: Feds Promise Central Valley Agribusiness Water That's Not There. March 2005. Environmental Working Group.
<http://www.ewg.org/reports/virtualflood/exec-summ.php>.

CALL FOR NOMINATIONS

DEADLINE: THURSDAY, MAY 19, 2005

The U.S. Environmental Protection Agency is requesting proposals from across the country for its third annual Targeted Watersheds Grants Program. Congress has provided \$18 million for grants to support community-based approaches and activities to protect and restore local water resources. Grants will be used to help support innovative, market-based approaches to watershed projects, including water quality trading.

<http://www.epa.gov/owow/watershed/initiative/>

Editor's Note:

"Fish Up A Creek" (February 2005) erred in linking the Bureau of Reclamation to the Tulare Lake settlement. The settlement between the Bush Administration and Central Valley farmers dealt with contracted water from the State Water Project, not the CVP. The federal government entities making the decisions over the water diversions in this case were NOAA Fisheries and the U.S. Fish and Wildlife Service.

GOOD DRUGS GONE BAD?

Don't flush them or put them in the trash! To keep expired or unwanted pharmaceuticals from getting into the wastewater stream—and the Bay—Save the Bay and EBMUD are sponsoring a pharmaceutical drop-off day:

Saturday, April 30
10am - 5:30pm
Berkeley Green Home Expo
Civic Center Park
Martin Luther King Jr., Way
and Allston
(near downtown Berkeley BART)

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