

SEEDS OF DISCONTENT YIELD HARVEST OF COOPERATION

Several programs aimed at restoring and protecting North Bay wetlands became lightening rods this spring for farmers and others frustrated by what they see as an accumulation of government regulation that is making agriculture in the area economically unfeasible. In the wake of protests that included heated public meetings, one such program — the S.F. Bay Commission's North Bay Wetlands Protection Program — is launching a new effort to work with area landowners to try to develop a wetlands protection plan they can live with.

The North Bay program is a partnership between the Commission and local governments to develop information and tools that will help the governments protect wetlands through their general plans and ordinances. The Commission created the program in response to a recommendation in the S.F. Estuary Project's 1993 *Comprehensive Conservation and Management Plan* for the Bay and Delta that local governments should become more involved in wetlands protection.

Some landowners see this and other North Bay programs as part of a government master plan. "There is common talk that the government wants to eliminate private ownership of baylands altogether and restore the entire area to wetlands," says Norm Yenni, manager of a Sears Point family farm. "All the regulations make it so hard to farm now that it makes you just want to get out of business. You're willing to sell out." This spring, hearings on the Commission program's background reports became a forum for grievances against the government, despite the fact that the first report merely identified existing land uses and designations and the second described wetlands and where they are located.

The North Bay program, "got tarred by history," says the Commission's Jeff Blanchfield, noting that the program has little or nothing to do with the issues that most irk the landowners. The landowners' chief complaints focus on the Endangered Species Act and mitigation requirements for levee maintenance. Many of them are still smarting over a 1990 dredging permit that required them to create a new tidal marsh as mitigation for potential disturbance of clapper rail and salt marsh harvest mouse habitat. Although the marsh was ultimately created at no cost to them through an agreement brokered by Congresswoman Lynn Woolsey, they say it set a bad precedent by requiring mitigation for practices that have been going on for over a hundred years.

The landowners also say they have been shut out of planning processes such as the Commission's program, citing a three minute time limit on public comment at meetings as particularly offensive. "This is my land, my

continued back page



Herring Pickles

Creosote-coated pilings— some perhaps more than 40 years old—may be killing the eggs of Bay herring.

Researchers from U.C. Davis Bodega Marine Lab lab found that virtually all of the herring eggs collected from creosote pilings near Ft. Baker failed to develop properly and died. Eggs spawned near, but not directly on, the pilings were also affected, although not as dramatically. Scientists collected the eggs as part of a five-year study of the factors affecting herring populations in the Bay.

Herring support one of the Bay's last commercial fisheries. Between December and March, about 450 boats take turns fishing for herring, primarily to harvest the roe for export to Japan. Cal Fish & Game sets the quotas for each year based on the spawning biomass of the previous year.

In addition to its economic value, herring are an important ecological species. Together with sardines and anchovies, herring supply a primary food source for salmon and other sport fish. "If you don't worry about the herring you may end up impacting the salmon," says researcher Gary Cherr.

As striking as the effects of creosote on herring eggs appear to be, Cherr and fellow researcher Carol Vines believe that it may be a much less significant factor in herring reproductive success than the salinity of Bay waters. Although they live most of their lives in the ocean, herring migrate to lower salinity environments to spawn, depositing their eggs on submerged objects, such as pilings, grasses, even boat hulls. However, too little salinity can be as bad as too much. Cherr's lab have found that the ideal salinity for egg fertilization and embryonic development is between 12 and 20 parts per thousand (ppt). Hatching rates decrease at salinities

below 8 ppt, while the number of abnormal larvae increase at above 24 ppt.

The research may explain why the herring population declined during the drought, only to rebound during the recent wet years. According to Fish & Game's Diana Watters, this year's spawning biomass was approximately 89,000 tons, the third highest on record.

Ironically, however, a large spawning biomass does not necessarily guarantee a huge crop of baby herring. Because the heavy rains during the early part of this winter added so much fresh water to the Bay, the herring held off on spawning through most of January. The impact of the late spawn is not known.

As far as the creosote is concerned, Cherr and Vines say it's difficult to determine the overall effect on herring populations. However, Watters notes that "the amount of spawning that occurs on creosote pilings is substantial. In some years every piling and every pier from Ft. Mason to Hunter's Point can be covered in spawn." Many of these pilings, as well as others around the Bay, are creosote-coated, although how many is not known. Moreover, says Cherr, in laboratory experiments eggs 1 to 2 inches from creosote were affected, but "we don't know how far the effects spread under natural conditions."

Cherr says the findings are interesting because of what they reveal about creosote itself. "The pilings we collected those eggs from are so old they had things growing on them," says Cherr "One might have expected the creosote to have become less toxic by now."

Contact: Gary Cherr (707)875-2051 CH

BULLETIN BOARD

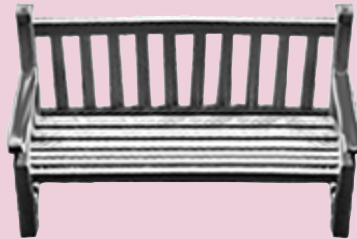


SHIP BALLAST REGS — The citizen watchdog group BayKeeper recently released a formal petition asking the S.F. Bay and Central Valley Regional Boards to ban the discharge of ship ballast water in the Bay and Delta — citing the need to slow down the invasion of exotic species. At least 212 of these aquatic aliens have successfully transplanted themselves to the Estuary, many arriving via ship ballast water taken on in foreign harbors and discharged here. The petition, presented to S.F. Board at its May 21 meeting, highlights the huge economic impacts some such exotics can have on native species and on levees and water supply infrastructure. BayKeeper is asking the Boards to issue a general permit applicable to all refineries, ports and other docking facilities that receive foreign ships. In the short term, the proposed permit would require monitoring and reporting of the disposal of ballast water by the facilities. By January 2000, it would completely prohibit the discharge of untreated ballast. "We don't have to wait for Washington on this critical issue," says BayKeeper's Mike Lozeau. "Our Boards have the authority to take decisive action." (415)567-4401

NUKE SHIPMENTS OPPOSED — The S.F. Bay Commission is opposing Department of Energy plans to ship spent fuel nuclear fuel rods from Asian reactors through the Bay on the way to a national laboratory in Idaho. In March the Commission voted to block shipment-related pier improvements at the Concord Naval Weapons Station and asked Attorney General Dan Lungren to seek an injunction against the federal government to prevent the shipments. At the time, several commissioners complained that the government was not providing enough information about the possible risks of the shipments. The rods would be transported on private foreign flag ships, not Navy vessels, and shipped in metal casks that the Department contends have been safety tested to a depth of 200 feet. The narrow, fog-bound, and shipwreck-littered entrance to the Bay through the Golden Gate is more than 300 feet deep. Following briefings by the Navy

and the Department in early May, the Commission voted to continue opposing both the shipments and the pier improvements. (415)557-3686

WEB WATER QUALITY — Three decades worth of water quality data collected by the U.S. Geological Survey is now on the World Wide Web. The data set includes measures of salinity, temperature, dissolved oxygen, turbidity and chlorophyll concentrations along a 45-mile transect of the Estuary system reaching from the South Bay up into the Sacramento River. Connect your browser to www.sfbay.wr.usgs.gov/access/wqdata/index.html



BAYSHORE CHUNK PROTECTED — More than 1,400 acres of East Bay shoreline was added to the protected rolls this spring under an agreement between the East Bay Regional Park District Board and Catellus Corporation whereby the Board, acting as land agent for the state, will purchase the property for \$27.5 million. Together with 387 acres purchased in 1994, the land will form the 1,817 acre Eastshore State Park, stretching along the Bay from Oakland to Richmond. The park has been in the works for more than 18 years. Next steps include environmental clean-up, planning and construction of park facilities, and an agreement between the state and the Park District regarding operational responsibilities. (510) 635-0138

SPECIES ACT WAIVER — Legislation amending the Endangered Species Act to exempt levee maintenance and repair from environmental review passed the Resources Committee of U.S. House of Representatives on April 16 by a vote of 23 to 9. The legislation, HR 478, applies only to existing structures, not to new construction. An earlier version of the bill had been criticized as too broad, potentially opening the door to massive new dams and construction projects. The House is expected to vote on the bill this summer. (202) 225-1947

SACTO FORUM FINISH — Forty stakeholder groups recently released a set of draft solutions to water quality and supply problems in the American River watershed. These draft recommendations from the Sacramento Area Water Forum — a cooperative effort of business, environmental, public, government and water interests created in 1993 — contain seven critical elements: increased surface water diversions from the American River in average and wet years; alternative water supplies such as transfers, conjunctive use, reclamation and conservation to reduce impacts on the lower American River during drier years; improved fishery flow release patterns from Folsom Reservoir; habitat mitigation on the Lower American River; water conservation, including metering and conservation pricing; groundwater management; and a successor to the Water Forum to provide oversight and coordination for a Final Agreement. Comments from all stakeholders were due in by the end of May. Working groups will now attempt to fashion them into a Final Agreement to go before the boards of participating organizations early next year. (916)433-6287

WETLAND GOALS WORKSHOPS — This July scientists and planners will hold two workshops to update the public on progress on the Bay Area Wetlands Ecosystem Goals Project (see calendar, p. 7). Federal and state agencies launched the project two years ago to provide a scientific foundation for deciding what kind and size of wetlands are needed, and where, to maintain a healthy Bay ecosystem. Workshop attendees will hear a general overview of the project, and presentations from technical teams working to develop goals reflecting the wetland needs of fish, plants, birds, mammals, amphibians and other life. "It's time to have a general dialogue with the public about what format of goals would be most useful to the most people," says the project's Mike Monroe. With this feedback and further technical research, Monroe says the project should be ready to present specific draft goals in another workshop series this October. (510)286-1221



ENVIRONMENT

DRY YEAR TAXES COMMITMENTS

The New Year's soaking led upstream reservoir managers to release lots of freshwater for fish and the Delta, and now, months of sunny skies later, they're coming up short.

"From the water managers' perspective, it's unholy hell," says BurRec's Laura King. "The farmers have already planted everything in sight, and pulling their water would have a huge economic impact. It's much worse than having a drought year."

The unusual wet-then-dry year — on the heels of several years of plentiful supplies for man and nature alike — has forced water managers out of their easy chairs and into the hot seat. Suddenly, meeting environmental protections established by the hard-won Bay-Delta Accord and Central Valley Water Project Improvement Act (CVPIA) isn't so easy, but environmentalists aren't going to let them slide.

"They want to relax deliveries for the environment, but they're not willing to do the same for water contractors — who've been promised 90-100% of deliveries," says the Bay Institute's Gary Bobker. "It shows the bankruptcy of their current management approach."

King's agency is taking the brunt of Bobker's criticism. "For years, BurRec has attempted to rely on hydrology rather than policy to meet its environmental obligations," says Bobker.

At the center of the controversy at press time was how much of the 800,000 acre feet of water mandated under the CVPIA to help anadromous fish every year had already or would-be released this year. The Department of Interior — representing both BurRec and U.S. Fish & Wildlife — has decided that early-in-the-year upstream releases to help anadromous fish and to meet Bay-Delta Accord standards, as well as various actions planned for the fall which could affect 1998 supplies, may use all of the 800,000 acre-feet this year. As a result, no additional amounts of this so-called "B2" water will be released this spring for the Delta, says King.

Enviros point out that by Interior's own accounting, a large portion of the 800,000 is still available for environmental use, yet Interior has chosen not to use it but to make up any additional water released this spring for fish by increasing pumping later in the year.

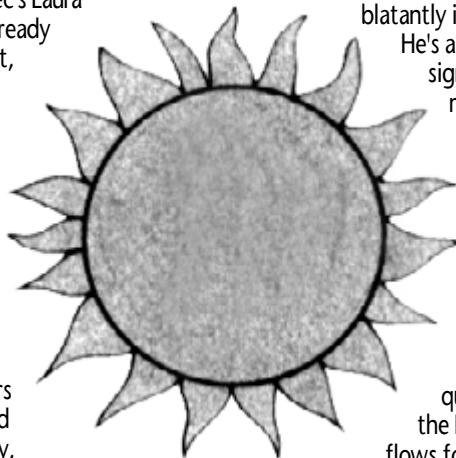
In Bobker's eyes this means the environment is being treated as if it were a dry year and the urban and agricultural users as if it were a wet one. "It's blatantly inequitable," he says.

He's also worried about signs that in order to make-up any water used this spring BurRec will fall short of fulfilling a number of other environmental obligations under a variety of laws — among them summer water quality standards for the Delta, minimum flows for the Feather River, agricultural salinity standards for the San Joaquin, and Delta smelt protections under the Endangered Species Act.

But the environmental heat has already produced some results. At press time, state and federal operators were backing off proposals to relax some of the Accord's standards this year, and Interior had committed to speeding up efforts to finalize its guidelines for exactly how the 800,000 acre feet will be managed in the future — policies that have been five years coming but that promise to minimize supply conflicts in the years ahead. Interior Deputy John Garamendi is promising final guidelines by June 20 — too late, according to Bobker, to offset biological impacts this year.

"If it doesn't rain soon, 1997 may convince everybody that year-type is a poor tool to use to set flow requirements," adds U.S. EPA biologist Bruce Herbold. Bobker agrees that an approach more "sensitive" to hydrological conditions might be appropriate for both water users and the environment in the long term, and suggests more widespread use of a sliding scale adjusted to conditions in the previous month. "We shouldn't be making decisions about what happens in May solely based on what happened in November," he says.

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SPECIES SPOT

BIRD'S EYE VIEW OF THE BAY

An obscure brown sparrow may be telling us how healthy the Bay's wetlands are—and could even offer restorationists a "short-cut" alternative to expensive, long-term monitoring programs, according to Dr. Steve Zack of the Point Reyes Bird Observatory and Wildlife Conservation Society.

In contrast to endangered salt marsh species (like the clapper rail), salt marsh song sparrows are a good indicator species because they live and breed in almost all of the Bay's salt marshes, and because they use the marsh in a "compelling" way that correlates with the health of the marsh, according to Zack, probing marsh channels with their bills at low tide for food. By examining song sparrow distribution and numbers in the marshes around the Bay, Zack thinks we can develop a picture of marsh health.

After censusing song sparrows for the past year, Zack and his colleagues have confirmed their suspicion that where marshes are better developed—with numerous dendritic channels—song sparrows are more prevalent. Mature marshes with intricate channel development offer more vegetation and food resources for the estuary's food chain, and better filter out pollutants and sediments—making them "healthier" or better-functioning than less-developed or disturbed marshes.

"At sites that have been leveed and where the channels have been straightened—where there is poorer quality marsh—we are seeing fewer song sparrows," says Zack. For sites in San Pablo Bay, Zack estimates sparrow density at

approximately 68 birds per hectare, for example, while in Suisun Bay, the number drops to 25 birds per hectare, and in the South Bay, to between 3 and 5 birds per hectare.

Contact: Steve Zack
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TECHNOFIXES

NEW LIGHT CAST ON SEWAGE

It takes all of 15 seconds for ultraviolet light at a wavelength of 254 nanometers to kill the bacteria and viruses in 15,000 gallons of wastewater at Central Contra Costa Sanitary District's newly converted plant in Martinez. The UV-treated effluent discharged into the Bay is so clean that the plant can meet and even exceed a stringent fecal coliform discharge criteria of 200 mpn per 100 milliliters. "We usually come out with a count of less than 2," says Central San's Lynne Putnam.

Vallejo and the Mountain View Sanitation District have also switched to UV disinfection but the technology is not for everyone. UV is not recommended for plants that treat effluent from certain heavy industries, as metals in some effluents can absorb UV light and undermine treatment. Textile manufacturing effluent is also not a good candidate for UV, as some dyes block out UV, much like sunscreens.

Central San's Martinez plant was well-suited for UV conversion, having originally been built as a water reclamation facility with existing denitrification channels suitable for a UV system. Wastewater now flows into six below-surface channels for UV disinfection after primary and secondary treatment. Three banks of lights—in grids of 26 lamps across by 16 down—are lowered into each channel and plugged in. The UV light prevents any algal growth, but occasional maintenance of the lamps is required to clean off precipitated salts.

Although the capital costs equal those of traditional treatment, Central San's Chuck Batts feels that UV will save the district money in the long run. Cleaning and electricity costs are somewhat higher, but training and reporting costs are much lower than when dangerous chlorine gas is used. "There's no health risk of chlorine gas on site and no sulfur dioxide needed to reverse the free chlorine," says Batts. "UV is as good as chlorine at eliminating pathogens and better than chlorine at removing viruses, and it doesn't have the chlorine byproducts—like dioxins."

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LOV

PEOPLE

CARLA BARD CRUSADES FOR THE SAN JOAQUIN

Carla Bard's voice still gives away her British birth. With its elegant vowels and clear, soft timbre, it is a voice that sounds more suited to garden parties and tea tables than to demanding, as Bard has for nearly two decades, that state officials restore and protect the San Joaquin River.

The San Joaquin, says Bard, who resigned last year from the Bay Institute's board of directors, is "sometimes referred to, not unjustly, as the lower colon of California." Most of the San Joaquin's flow is diverted at Friant Dam to irrigate farmlands between Fresno and Bakersfield, leaving the river dry for a 20 mile stretch below the dam. The lower San Joaquin is polluted by agricultural drainage.

Bard worked with former U.S. Fish & Wildlife biologist Felix Smith to persuade the Washington D.C.-based advocacy group American Rivers to list the San Joaquin as one of the nation's most endangered rivers this year. In 1996, Bard and Smith petitioned the state's Water Resources Control Board to release more water from Friant Dam, arguing that the agency has a public trust duty to protect non-agricultural uses of the river.

Bard's interest in the San Joaquin dates back to her days as the first woman to chair the state water Board. Appointed by Governor Jerry Brown in 1979, Bard served until 1982, a period she remembers as "thrilling and difficult." During her tenure the Board established a Bay-Delta program to gather data supporting stricter water quality standards and a toxics program. "That was the first time the Board had looked at regulating pesticides," she remembers. "Up until then the Department of Agriculture had total control. It caused a big stink."

People who have worked with Bard describe her as courageous, dedicated, articulate, theatrical and well-prepared. However, some former colleagues also

say that she can be "a pain"—a charge even her friends don't dispute. "Carla doesn't beat around the bush and she's a tough negotiator," says Smith. "She expects the people she's working with to be as committed as she."

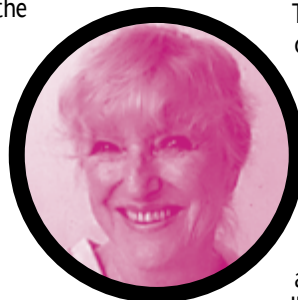
Throughout her tenure on the Board, Bard commuted from her home in Ojai, where she has lived for 40 years. "If you spend too much time in Sacramento your brain turns to Jello," she explains.

The defining moment of Bard's career occurred during her last year on the Board. "The Bureau of Reclamation applied for water quality standards so they could complete the San Luis Drain," she recalls. "They testified that there were absolutely no problems with pollutants in the drain. They lied under oath." Later, after the environmental disaster at the Kesterson Wildlife Refuge emerged, Bard worked for more than a year to compel the Board to close the drain, and she continues to fight efforts to reopen it.

Brown did not reappoint her when her term expired, some say because of pressure from agricultural and chemical interests unhappy with her activism. "Jerry Brown threw her to the wolves," says her friend Lloyd Carter of the California Save Our Streams Council. Bard herself is philosophical: "A friend of mine at the Trust for Public Land told me that if I had been reappointed it would have meant I wasn't doing my job," she says.

Bard is contemptuous of the Bay-Delta Accord and the CALFED process. "To try and deal with the problems of the Bay-Delta without including San Joaquin flows below the Friant Dam is at best ingenuous and at worst perverse," she says.

Bard says she has a carrot and stick approach to environmentalism. "It is entirely appropriate for some organizations to negotiate and conciliate," she says. "But unless there are also organizations and people like me who remain hardline, the negotiators have no leverage." Bard says that since the Board has taken no action on her and Smith's petition, "I expect that we will soon file suit." CH



"If you spend too much time in Sacramento your brain turns to Jello"



SCIENCE

BAY CREEKS GET GOOD REPORT CARD

Asked to foresee the ecological fate of a stream meandering from home-packed hills through grimy city streets and shoreline industrial zones to the Bay, anyone might presume the worst. And until recently — with decades devoted to putting urban creeks behind dams and into underground pipes and concrete channels — they would have been right. But the creeks that still weave through today's metropolitan Bay Area are holding their own, ecologically, according to preliminary results of a 1994-1997 survey of 30 local watersheds. The survey, conducted by U.S. EPA's Robert Leidy for the S.F. Estuary Project, sampled over 300 sites — noting what species of native fish swam the pools and riffles, as well as how well water flowed, habitats connected and bank vegetation thrived.

"Things are better since my 1984 survey," says Leidy. "There's been a halt to degradation in some areas, probably due to the push for Clean Water Act enforcement and stormwater control over this last decade, as well as to watershed protection by various land management agencies like the S.F. water department and the Peninsula Open Space District, and to growing interest in creeks by local groups."

According to Leidy, at least 75% of fish species native to Bay creeks are maintaining healthy populations, an indication that their small stream habitats are in "pretty good shape." During the study, Leidy found a total of 16 native fish species in Estuary streams including lampreys, trout, salmon, minnows, a sunfish and a surf perch. Rainbow trout or steelhead occurred at 41% of the sampling sites, with small runs of steelhead found from San Jose's Guadalupe River to Alameda's San Lorenzo Creek, Marin's Corte Madera Creek, and Contra Costa's Walnut Creek. In addition, Leidy documented small spawning runs of chinook salmon in four Bay Area creeks.

The most common minnow found by Leidy was the California roach — occurring in 43% of sites; the most unique species, a thriving population of hardhead in the middle reaches of the Napa River (the only population outside the Central Valley, where surveys suggest this minnow is declining); and the rarest species, the splittail (a candidate for listing) and the Sacramento perch — now vanished from

all Bay Area streams save one. Fish and game agencies stocked the perch in various reservoirs throughout the western U.S. In the Bay Area, only one "natural strain" remains in some abandoned gravel pit ponds in the Alameda Creek drainage, says Leidy.

Some of these fish were recorded as part of "fish assemblages" of 6 - 10 species — groups of species normally associated with each other under natural healthy conditions. Leidy found such healthy assemblages — and conditions in which natives dominated and exotics were uncommon and absent — in portions of many Estuary watersheds, in particular in Sonoma Creek, the Napa River, and upper Coyote and Alameda Creeks.

"People have a tendency to go to more remote, rural areas to look for good creek resources, or to focus on big plumbing in the Delta," says Leidy. "But many Central Valley streams are pretty trashed. I wanted to look here in our urban estuary."

Leidy's final report will debut this fall. In the meantime, he's developed a list of 18 creeks or watersheds that are high priority candidates for protection (see below). To develop the list, Leidy measured 11-15 biotic and physical factors and then

combined them into a functional index of stream health. Factors rated included such things as the diversity and abundance of native fishes and amphibians; flow patterns (such as natural flood and drought flows); and habitat conditions, arrangement and connectivity. The resulting preliminary list will be finetuned for release this fall, with the eventual aim of identifying the best candidates for creating "Aquatic Diversity Management Areas" — the aquatic version of ecosystem and multi-species management zones. "This report will allow planners and municipalities to focus resources on drainages that are in good shape or have unique elements," he says.

Indeed Leidy's results suggest the Bay region can provide important repositories of aquatic biodiversity in a state in which much of this diversity is endangered. Of California's 116 fish taxa native, 7% are extinct, 13% are formally recognized as threatened or endangered by state and federal governments, 23% qualify for such formal listing, and 19% may qualify in the near future if present population trends continue. According to Leidy, only 23% of the native freshwater fish fauna of California can be regarded as "secure." Contact: Rob Leidy (415)744-1970 ARO

WATERSHED/LOCATION	HIGH SCORERS IN ECOLOGICAL INTEGRITY
Alameda Creek, Alameda and Santa Clara Counties	Alameda Creek, Niles Canyon Alameda Creek, upstream from Sunol San Antonio Creek and tributaries, upstream from San Antonio Reservoir Arroyo Hondo Creek and tributaries, upstream from Calaveras Reservoir Arroyo Mocho Creek, upstream from Livermore Del Valle Creek, upstream from Del Valle Reservoir
San Leandro Creek, Alameda and Contra Costa Counties	San Leandro and Redwood creeks, upstream from Upper San Leandro Reservoir
Mt. Diablo Creek, Contra Costa County	Within Mt. Diablo State Park
Permanente Creek, Santa Clara County	Entire
Coyote Creek watershed, Santa Clara County	Coyote Creek and tributaries, upstream from Coyote Reservoir
Guadalupe River watershed, Santa Clara County	Entire
Saratoga Creek, Santa Clara County	Entire
Stevens Creek, Santa Clara County	Upstream of Stevens Creek Reservoir
San Francisquito Creek, Santa Clara and San Mateo Counties	Entire
San Mateo Creek, San Mateo County	Upstream from Crystal Springs Reservoir
Corte Madera Creek, Marin County	Entire
Miller Creek, Marin County	Entire
Petaluma River, Sonoma County	Entire
Sonoma Creek watershed, Sonoma County	Entire
Huichica Creek watershed, Sonoma County	Entire
Napa River watershed, Napa County	Entire
Green Valley Creek, Solano County	Entire
Suisun Creek, Solano County	Entire



MULTI-MEDIA

SPARE THE AIR, SAVE THE BAY

Most Bay Area commuters know that the hours they spend sitting in slow or stopped traffic every week not only fray tempers but also waste gas and pollute the air. Few realize that they poison the Bay and Delta as well.

"Water quality is just one more reason to plan transportation systems more carefully," says Geoff Brosseau of the Bay Area Stormwater Management Agencies Association (BASMAA). Cars contribute to stormwater pollution both directly, by depositing pollutants—such as crankcase drippings and copper from brake pads—onto roadways and parking lots, and indirectly, through atmospheric deposition of soot and smog. According to the S.F. Estuary Institute's Rainer Hoenicke, automobile exhaust is a major source of PAHs in the water column and Bay sediment.

"Air people and water people are not used to talking to each other, but there is a growing interest in working together," says Brosseau.

During Bike to Work Week in May, for example, BayKeeper joined forces with the S.F. Bicycle Coalition to draw attention to cars as a source of stormwater pollution. The Baykeeper boat sported a banner reading "Spare the Air and the Bay—Bike for Clean Water." The S.F. Bay Commission is also reportedly considering making greater bicycle access a condition of permit approval for planned retrofitting of area bridges.

Pat Ferraro of the Silicon Valley Pollution Prevention Center believes that having representatives of diverse agencies, including the Santa Clara Valley Water District and the Santa Clara Valley Transportation Authority, on his board of directors helps improve the dialogue between water agencies and those responsible for land use and transportation decisions. "We get opportunities to do incredible things because we've got everybody at the table," he says. The impact of traffic on water quality was a central issue at the Center's State of the South Bay Symposium earlier this spring.

Among the panelists was Mountain View city planner Mike Percy, who says that water quality issues were one of the considerations that led to new zoning designed to concentrate housing and employment near planned light rail and CalTrain stations. The city's general plan explicitly links transportation and water quality, and calls for congestion management strategies.

While few would dispute that automobiles



are a major source of water pollution, no one is quite sure precisely what pollutants they contribute or in what quantities. The S.F. Regional Board and

BASMAA are launching a joint project to determine what data the local Air Quality Management District has collected that might help provide this information. "We will be looking at their data and asking different questions, like are they measuring the right things and can we translate their data into meaningful units for water quality managers," says Brosseau.

Brosseau notes that the Air District project will be coordinated with an Estuary Institute pilot study on aerial deposition. That study will use monitoring stations throughout the Bay Area to determine the magnitude of air deposition as a source of pollutant loadings to the Estuary. Eventually, says Hoenicke, the study will try to determine source categories for pollutants. "This will help tell us where we should be allocating our resources," he says.

While the science side of the multi-media impacts equation is just getting started, the public education side is already on the road. In the South Bay, for example, the Palo Alto Sewage Treatment Plant, Stanford University, the City of Palo Alto, CalTrain, SamTrans, AC Transit, the Palo Alto Medical Foundation and others are participating in a campaign featuring grocery bags, refrigerator magnets and other public education materials bearing the slogan "Try Transit, Spare the Air, Save the Bay," along with Flo the Raccoon, mascot of the treatment plant's storm drain program, and a number telling callers how to use public transit to get anywhere in the Bay Area. Flo also rides the shuttle that carries passengers to downtown Palo Alto for special events such as the annual arts festival. "The water quality message is very much part of the program," says coordinator Dena Mossar.

Although cutting the number of vehicle miles traveled is vital to water quality protection, experts say reducing pollution from runoff will also mean rethinking the design of streets and highways to reduce impermeable surface area. "Many cities require wide streets and over-paving to create habitat for automobiles. That is contrary to the situation we would want for water quality protection," says the S.F. Regional Board's Tom Mumley.

"We've got to try to make sure that water quality impacts are on the radar screen as land use and transportation decisions are being made," says Ferraro.

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BUSINESSWISE



MARINA RUNS TIGHT SHIP

Carter Strauch doesn't believe in "fuzzy feel-good" environmentalism. He doesn't want to have to "read through five pages of fluff to get to the meat." This South Beach Marina harbor master makes his efforts to educate his tenants about their potential contribution to Bay pollution short and to the point. He likes to share the S.F. Estuary Project statistic, for example, that one weekend boater flushing untreated sewage into the Bay produces the same amount of bacterial pollution as the treated sewage from 10,000 people.

Strauch and assistant harbor master Peter Moorehead began a boater education program in 1994 using reference materials from the Estuary Project, the Marin County Waste Agency and other agencies. They disseminated this information to their tenants through a harbor bulletin board and monthly mailings. "Peter and Carter are very proactive," says the Estuary Project's Joan Patton. "Less than half of the Bay's marinas have sewage pumpouts, and often when they do, they're not maintained. At South Beach, they have two pumpouts, and if one is broken, it's fixed within 15 minutes."

In addition to offering the two free 24-hour pumpout stations, the marina will recycle tenants' old batteries and waste oil, collect old gasoline, solvents, and paints, and even take oily bilge water for treatment. Strauch says that while probably 70-80% of their tenants are grateful for the services, a few undoubtedly resent the stringent policies at South Beach. Some have left behind hazardous wastes, for example, that the two harbor masters had to clean up. But Strauch and Moorehead see the extra work as just another cost of doing business. "It's a way to market ourselves," says Moorehead. "We think people choose South Beach not only for its aesthetics, but for the services we offer. We think people want to see that kind of environmental sense."

Carter says most boaters now religiously use the South Beach pumpouts (instead of discharging their sewage into the Bay). "They wait patiently in line, maneuver in strong crosswinds—do whatever it takes," says Strauch. Strauch also sees himself as being in a unique position in which he can "reach ears that might otherwise not hear. It's quite different to hear this environmental message coming from a person who's a sailor himself, who's saying these things with vigor — making policy. I tell tenants from the start they have to take care of the environment to be a South Beach tenant. And if push comes to shove, I just say 'do it.'" Contact: South Beach Marina (415)495-4911 Lov

PLACES TO GO
& THINGS TO DO

MEETINGS & HEARINGS

JULY
THU
19

S.F. ESTUARY PROJECT

Delta In-Channel Islands Workgroup

Location: State Lands Commission, Sacramento1:00 PM--3:30 PM
(510) 286-0924JULY
TUE
10SAN FRANCISCO BAY
JOINT VENTURE

Management Organization

Location: Preservation Park, Oakland1:00 PM--4:00 PM
(510) 286-6767JULY
THU
24DELTA PROTECTION
COMMISSION**Location:** Jean Harvie Community Center, Walnut Grove6:30 PM
(916) 776-2290

HANDS ON

JUNE
WED • THU • FRI
18
19
20

BAY-DELTA WATER TOUR

Three-day tour includes discussions of levee systems, water transfers, reclamation, fish and wildlife, water quality and agriculture.

Sponsor: Water Education Foundation
(916) 444-6240JUNE
SAT
28LOW-FLOW TOILET
DISTRIBUTION

Volunteers needed to distribute low-cost, low-flow toilets.

Location: John O'Connell High, SF
Sponsors: Baykeeper, SF Water Dept
9:00 AM--3:00 PM
(415) 567-4401JUNE
SAT
21

WATERSHED WALKATHON

Walking the Watershed of San Leandro Creek

8:00 AM--5:00 PM

Sponsor: Friends of San Leandro Creek**Location:** East Bay
(510) 577-6069

WORKSHOPS & SEMINARS

JUNE
WED
11COST-EFFECTIVENESS
ANALYSIS FOR URBAN
WATER CONSERVATION
BEST MANAGEMENT PRACTICES

One-day course for water conservation professionals with little or no background in cost-effectiveness analysis or economics.

Sponsors: California Urban Water Conservation Council, Water Education Foundation**Location:** Anaheim
(916) 444-6240JUNE
FRI • SAT
20
21
22AQUATIC POLLUTION:
THE CASE IN
SAN FRANCISCO BAY

Course examines issues such as bioavailability, bioaccumulation, biotransformation and the fate of contaminants in an estuarine environment. Explores estuary/wetland restoration and remediation.

Sponsor: UC Extension**Location:** San Francisco
8:30 AM--5:00 PM
(510) 642-4111 to enroll, or online at
www.unex.berkeley.edu.4243/cmJUNE
FRI
27S.F. ESTUARY INSTITUTE
SEMINARS

Continuing seminar series covers environmental science related to the SF Estuary. Topics to be announced.

Location: EBMUD Building, Oakland
Call for times (510) 231-9539JULY
FRI
25WETLANDS ECOSYSTEM
GOALS PROJECT
WORKSHOPS

Overview of the project and presentations by technical teams. Opportunities to provide feedback on the most useful formats for goals.

Locations: Don Edwards National Wildlife Refuge, Newark; Main Library, 505 Santa Clara Street, Vallejo
7:30 PM--10:00 PM (510) 653-5723JULY
TUE • THU
15
17JULY
THU • FRI
17
18

ATTORNEYS BRIEFING

1997 Update on Recent Water Law and Policy. Topics include CVPIA, 1997 floods, groundwater management, state and federal Endangered Species Act issues, Proposition 65 and the State Board's 1995 water rights plan.

Sponsor: Water Education Foundation
Location: Hyatt Fishermen's Wharf, SF
(916) 444-6240

NOW IN PRINT

Ecosystem Restoration Plan

CALFED

Copies from (916) 657-2666

Central Valley Project Improvement Act Draft Programmatic Environmental Impact Statement

Bureau of Reclamation

(916) 979-2280

Entrapment Zone Fact Sheet

U.S. Bureau of Reclamation

Copies from Jim Arthur or Doug Ball, U.S. Bureau of Reclamation, 2800 Cottage Way, Sacramento, CA 95825.

E-mail: jarthur@2mp700.mp.usbr.gov or mball@2mp700.mp.usbr.gov*Flood Warning (video)*Water Education Foundation, \$25 plus tax and shipping. Copies from (916) 444-6240 or www.water-ed.org

LETTERS

DEAR ESTUARY,

My surprise and disappointment in seeing an article about storm drain *retrofit* devices in U.S. EPA's Nonpoint Source News-Notes has been deepened by the re-publication of this information in our own *ESTUARY*! Aarrggghh! The publication of this information in the Bulletin Board section of April's *ESTUARY* is tantamount to free advertising. While the number of these stormwater treatment devices coming on the market has been steadily increasing, the data to-date on the vast majority of these devices is disappointing, and certainly does not live up to most vendor's claims. In fact, the California Stormwater Quality Task Force recently had occasion to review information on oil/water separators and catch basin inserts while working to develop BMPs for retail gasoline stations and concluded "The evidence reviewed... indicated that the effectiveness and efficiency of these... [proposed] BMPs... was insufficient for them to pass peer review and therefore these BMPs can not be generally recommended for use statewide." In general, these devices have failed to justify their expense for two reasons: 1) inability to significantly reduce pollutants from the already relatively low concentrations typical in storm water, and/or 2) inability to handle high flows and maintain the integrity of the device's treatment system. Members of the Task Force, BASMAA, and other municipal storm water programs throughout the country are conducting studies on these and other BMPs. If that research shows that a particular BMP is effective and efficient, we will be the first to encourage the publication of these findings. In the meantime, I would suggest that the subject deserves a more thorough article on the state of this inexact technology.

GEOFF BROUSSEAU

BAY AREA STORMWATER
MANAGEMENT AGENCIES ASSOCIATION
(BASMAA)

SEEDS CONTINUED

livelihood and my life they're talking about and they're telling me I can have three minutes to comment?," says Jim Haire, whose family has farmed on Skaggs Island for 57 years. At the same time, they say, the sheer number of wetlands planning efforts underway in the North Bay — there are at least six — makes keeping up with developments difficult, especially when trying to run a farm. "I can't sit in a hundred committee meetings," says Yenni. "I've got to sit on a tractor sometimes."

To give themselves some leverage, the landowners recently formed the North Bay Agricultural Alliance. According to Haire, the Alliance has approximately 40 members.

The Commission is not the sole focus of landowner discontent. Moments of conflict have also punctuated meetings of the U.S. EPA's North Bay Forum, which coordinates the wetland and watershed resource management and regulatory activities of 13 government agencies. EPA's Paul Jones says he is sympathetic to the landowners'

concerns. He notes that the EPA program has been trying for several years to increase landowner involvement and provide a forum for information sharing between the landowners and the agencies. "Obviously there is work to be done in this area, but we look forward to more communication and a better working relationship," he says.

Despite a situation that some describe as "volatile," a fair number of participants agree that the combined weight of state and federal regulations creates a heavy burden on North Bay farmers. "These guys have been through a lot with regulatory agencies," say Blanchfield. "There are things we can do to help farmers and landowners protect habitat on their property and make it less painful to comply with regulations," he says, citing special tax treatments and conservation easements as possible tools. Blanchfield says the first step is to establish a committee of farmers who will work with the Commission to develop a background report on agricultural problems, needs and wetlands compatibility.

Although a few of the landowners have taken extreme positions — including one who declared that his ranch was a sovereign territory and threatened to sue BCDC for \$100,000 per acre in damages — many of them seem willing to rely on plowshares instead of swords. On May 8, the Agricultural Alliance voted to work with the Commission, although the details have yet to be worked out. However, warns Haire "this is not going to be a fast process. Agriculture should have been sitting at the table from the start, and we're not going to be able to catch up in a month or two." The timing is terrible, he adds, noting that spring and summer are particularly busy times for farmers.

Blanchfield says he's hopeful that with communication and cooperation, both wetlands and farms can be saved. "We have always said that agriculture in the North Bay is compatible with wetlands values," he says. "I really think that we are on the same page and just don't know it."

Contact: Jeff Blanchfield (415)557-3686 or Jim Haire (707)224-9379 CH



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