ESTUARY

YOUR BAY-DELTA NEWS CLEARINGHOUSE

FEEDBACK

If something you read in this newsletter gets your goat or triggers a thought please write us at* ESTUARY *Feedback, 2101 Webster, #500, Oakland, CA 94612.

"Your April 1994 issue included an article [by Frank Hartzell] titled *Vernal Tangle* which asserts that 'such mitigation banks...have been endorsed...by major environmental groups and agencies.' I would be very interested in knowing exactly what groups and agencies endorse mitigation banking for vernal pools. The Sierra Club has tremendous concerns about mitigation banking in general, and it is common scientific knowledge that vernal pools are a unique type of natural wetland that is virtually impossible to 'create.'"

Jackie McCort, Sierra Club

Frank Hartzell writes, by way of clarification, that "Wetland mitigation banking in general has been supported by a wide range of environmental leaders and developers, according to Hal Thomas of Cal Fish & Game. But mitigation banks for vernal pools are another issue. The Army Corps is monitoring vernal pool creation and mitigation projects in Chico, Roseville and Sacramento. Reports from these studies have been interpreted as good news by some local biologists and developers, but no major environmental group has taken a stand based on the reports."

Tule Perch

Several readers correctly pointed out that the fish pictured in our January issue was a tule perch, not a hardhead as the caption suggested (the editor made a mistake). One reader kindly provided these comparative illustrations.

Hardhead

Water Agencies Tiptoe onto Dry Land

Two bills inching through the state legislature as ESTUARY goes to press script two different roles for water districts in land use planning. One bill reinforces their historical, can-do, reactive role in which developers and city planners simply ask for water service and get it — SB1250 would force the East Bay Municipal Utilitys District to supply 11,000 new homes in the Dougherty Valley with water (water EBMUD isn't sure it has). The other bill writes a more proactive role for districts statewide — AB2673 would require cities and counties considering new development outside a district's service area to consult with water suppliers first.

Whichever the bill, the debate they've spawned reveals that no matter how much water districts fear and resist getting involved in land use planning, they already are. In the heyday of California dam building, "will-serve" were two words water districts had little trouble saying. But these days, as districts struggle with perpetual drought, increasing competition for Delta water from farmers and endangered species, and worries about supplying existing customers, let alone new ones, they'd like to be able to say at least "maybe" to that developer at the door.

Though AB2673 doesn't give water suppliers veto power over development, it does help them give priority to existing customers and discipline urban needs for water. "Sooner or later the state's going to have to deal with this," says EBMUD's Andy Cohen. "Even if AB2673 doesn't pass this year, it's now a live issue that won't go away."

The rising demand and plummeting supply sides of the water equation aren't the only things driving water agencies into land use planning and management. Consulting environmental analyst Scott McCreary says the health threat to drinking water from urban and agricultural runoff is offering a new and more acceptable avenue for water districts to venture onto dry land. "Water districts are under a lot of pressure from the feds and the state to really protect water supplies at the source, not just to rely on end-of-the-pipe treatment," says McCreary. Kathy Russick from the Santa Clara Valley Water District agrees. "Everyone can relate to clean drinking water," she says.

To protect the quality of their water supplies, both EBMUD and Santa Clara, as well as San Francisco, are making or carrying out plans for improving "watershed management." Such plans might consider everything from minimizing impacts from existing land uses — keeping cows out of streams and motor oil out of storm drains — to preventing impacts from changing land uses as roads, homes and city limits creep into riparian zones, open space and watersheds. "We're not a land use agency, but inevitably this will start touching upon land use," says Russick.

Santa Clara recently launched a comprehensive evaluation of the relationship between its nine reservoirs and watersheds in the hopes of minimizing land use impacts on their water supplies. Though many local governments could be expected to resist such water agency meddling in land use issues, Russick says Santa Clara's county planners and supervisors are responding positively. "They know land use will have to start considering environment and water quality one of these days," says Russick. "They see where the regulations are going."

Indeed, Bay-Delta cities and counties are now required to prepare stormwater management plans under recent amendments to the Clean Water Act, and state water quality agencies have been charged with making sure they do so. Amendments to the Coastal Zone Management Act are also forcing state water agencies to extend protection for coastal waters into surrounding uplands and to update California's nonpoint source pollution control plan. The State Water Board is, like the water districts, approaching the task through watershed management.

State officials are quick to say that they won't be dictating land use and that the real responsibility for watershed management lies with those who've always had the most land use control: landowners and homeowners, local communities and municipal government. "It's not the state's

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FROM THE COVER

business to be in everyone's backyard, to have an army of bureaucrats shaking fingers at dirty creeks," says the Water Board's Sid Taylor. "It's our job to provide leadership, grants and technical guidance, and to go after the bad actors."

All and all, from local water districts on up to state regulatory agencies, McCreary thinks that "for the first time, we're seeing real linkage between water quality, supply and land use." Even federal water interests are getting into the land use act. McCreary, for example, was hired by the S.F. Estuary Project to develop priorities for protection efforts among the 12-county Bay-Delta region's 34 watersheds and receiving waters. McCreary did a resource-based risk assessment that identified, for example, the North Delta as the most threatened by increasing runoff due to urban growth.

McCreary's findings could make the environmental basis for land use controls more scientific. "Before this, the approach was just to set arbitrary urban limit lines," says Kassandra Fletcher of the Building Industry Association. "Now any type of proposed lines could be based on real resource risks. We could have value-based land use management."

The Estuary Project, in its *Comprehensive Conservation and Management Plan* for the Bay and Delta, lays out actions for going much further into land use issues than environmental risk assessment. The Project is now working to get watershed protection folded into General Plans — the cornerstone of every city and county's vision for land use and development.

"There's an enormous regulatory burden in development decisionmaking, but we still don't have effective environmental controls," says EPA's Sam Ziegler, formerly of the S.F. Estuary Project. The S.F. Regional Board's Tom Mumley thinks sound watershed planning could also help streamline environmental reviews and "mitigate for development impacts up front."

And so water districts and agencies, like it or not, are in the land use loop. As Mumley says, with a deep breath, "We're on new territory."

Contact: Assemblyman Don Cortese (AB2673) (916) 445-8243; Sen. Dan Boatwright (SB1250) (916)445-6083; Scott McCreary (510)649- 8008; Frank Maitski (Santa Clara) (408)927-0710; Sid Taylor (916)657-0432

ARO

NEWS ROUND UP

INTEGRATED RIVER MANAGEMENT

Sacramento almost flooded in 1986. Ever since agencies and homeowners have been struggling to better secure their city. To accomplish this, a new task force launched by the Sacramento Area Flood Control Agency is suggesting improved levee, bank and vegetation management on 26 miles of the lower American River. The multi-interest, public-private task force, facilitated by John Gammon and Scott McCreary of CONCUR, has met every two weeks since February and already reached some consensus on how to enhance both flood control and wildlife habitat on the river, according to McCreary. With the help of hydrologist Mitchell Swanson, the group has already come up with schematics of potential improvements. "We'd essentially rebuild riverbank and levees and recreate habitat," says McCreary. The task force plans to complete its recommendations (to be submitted to the Army Corps) by July. Contact: CONCUR (510)649-8008 *ARO*

CVPIA CHALLENGED

A successful lawsuit filed by four water districts may have brought environmental protections in the Central Valley Project Improvement Act to a standstill, but it may also come back to haunt them. The April court ruling prohibits the federal government from proceeding with the transfer of 800,000 acre-feet of water for fish and wildlife — a transfer prescribed by the act as mitigation for existing water contracts — without first completing an environmental impact analysis. Environmentalists were dismayed by the ruling, which uses environmental laws to block environmental restoration. But Save the Bay's Barry Nelson says the ruling could also backfire on water interests by stalling renewal of expiring water contracts. "If you have to do an environmental impact review to give water to fish and refuges, you have to do one to renew contracts that take it away," he says. Save the Bay and other groups are planning an appeal. Contact: Barry Nelson (510)452-9261 *ARO*

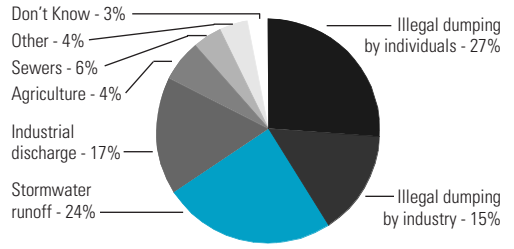
EBMUD WINS SUIT

"Use more, pay more" was the message sent to water users in the East Bay's "hot climate." In an April 18 decision, the state Court of Appeal rejected a challenge from some East Bay Municipal Utility District customers east of the Oakland-Berkeley hills, who claimed that the tiered rate structure initiated by the district during the drought was arbitrary, discriminatory and constituted a special tax. The customers had argued that their warmer climate, larger lots and bigger families naturally led to more water consumption. But the court ruled in favor of EBMUD, saying the district can charge progressively higher rates for higher usage in order to encourage conservation. And on the legislative front, Assembly Bill 1712, which specifically authorizes water agencies to adopt water conservation pricing strategies, was signed into law during 1993.
Contact: EBMUD (510)287-0150 *KA*

POLLUTION AWARENESS JUMPS

A 1994 telephone survey of 251 Alameda County residents shows that since 1992, they've become much more aware that stormwater is a major source of pollution to local creeks and the Bay (see pie chart). Many respondents attributed their increased awareness to the county's investment in educational billboards, busboards, newspaper ads and painting drains with the words "No Dumping;

HOW POLLUTANTS ENTER WATERSHED



Drains to Bay." According to the survey, 45% said the campaign had changed the way they handled pollutants, and 24% identified water pollution as an important environmental issue (up from 17% in 1992). As for types of pollutants entering the watershed, respondents placed more emphasis on auto products, pesticides and household chemicals and less on industrial waste over the two-year span. Contact: Sharon Gosselin (510)670-6547 *ARO*

INSIDE THE AGENCIES

TOXICS LIMBO

A March court decision makes California the only state in the union without water quality standards for toxics, at least temporarily, and has all involved parties wondering what the others will do next.

The plaintiffs, five Bay-Delta dischargers, brought the lawsuit against the California Water Resources Control Board because "statewide plans and permits imposed conditions we couldn't meet and placed us in potential violation..." says the City of Sunnyvale's attorney Bob Thompson. The lawsuit challenged standards for toxics discharge established in the state's inland waterways and enclosed bays and estuaries plans. It accused the Board of failing to adequately address environmental, economic and hydrographic considerations in its plans, considerations required under its own laws and codes. "There's flexibility in their laws to apply standards based on real-life local conditions, and they didn't use it," says Thompson.

The judge ruled in favor of the dischargers. "The [Board] has not merely failed to comply with technicalities," reads the court decision. "It has exceeded its statutory authority...Allowing the standards to remain in effect is not appropriate."

Though the state lost the lawsuit, it's happy about two changes made in the final decision that could save it from a mind-boggling plan readoption process. Deputy Attorney General Cliff Lee says the process is now "doable" because the Board will not have to evaluate impacts of its plans on each of the state's thousands of waterways on an individual basis. "We pled that this was impossible," says Lee. The court agreed. Second, the state will not have to do an impact analysis of every possible treatment option that a discharger might undertake to meet toxics standards. But it must "generally assess" such consequences of its plans, and "generally" is a word Lee likes. "We got half a loaf," he says.

With the state's plans now invalid, a third party enters the scene. The Clean Water Act says that if states don't have standards, EPA must promulgate them. "EPA's the gorilla in the closet," says the S.F. Regional Board's Michael Carlin. EPA's Diane Frankel says her agency has already begun the promulgation process, but warns that the court decision has taken away flexibility about how fast dischargers must comply with standards and where compliance is measured — at the end of the pipe or out in the mixing zone. "The state plans are where the authority exists to do compliance schedules and mixing zone policies," says Frankel. "We don't prohibit these implementation options, but we have no mechanism for using them. We want the state to readopt its plans as fast as possible, so we don't have to complete our promulgation."

Aftershocks of the decision are already reverberating down to the state's regional water quality boards, to which some dischargers are suggesting that reissued permits not include effluent limits for toxics. Environmentalists are concerned that the State Board will use the decision to put off getting tough on industry. Contact: Diane Frankel (415)744-1988 *ARO*

BDOC MAKES ROUNDS

JoAnn Landingham suggested she might have to switch from water to tequila if the state doesn't get on the ball and develop some new water supplies. The Tehama County councilwoman traveled all the way to San Francisco to share her water worries at a May 12 Bay-Delta Oversight Council public meeting. About twenty people turned out for the meeting — one of six recently held around the state. "BDOC's focus is the fair and complete evaluation of options for solving what is perhaps the most vexing and longstanding of California's resource issues," said State Resources Secretary Doug Wheeler at the meeting, referring to the 19-member Council's mandate to come up with long-term plans for solving Delta water supply and environmental problems. The Council is now meeting monthly, and five new technical advisory committees have been busy behind the scenes. Asked how BDOC's work will fit in with revived State Water Board efforts to establish interim Delta water quality standards, Council staffer Greg Zlotnick said, "There's no direct meshing, but we are coordinating." Contact: Greg Zlotnick (916)657-2666

ARO

HOW I SEE IT

LONG-TERM DELTA PLANNING

GARY BOBKER, BAY INSTITUTE

"Environmentalists left the negotiating table on long-term solutions for Delta protection in protest over the governor's abandonment of interim solutions in the form of D-1630. What we want, if we're to come back to the table and the state planning process, are several things.

"First, it's got to be a truly joint effort in which both state and federal government agencies representing both the water supply and resource missions are equal, fully participating players.

Second, the long-term process has to be linked to short-term solutions. There has to be some agreement on having water quality standards in effect by a certain time, so we can keep the Bay-Delta environment viable while we plan ahead. Any short-term agreement must include milestones for standards adoption and implementation. It can't be just another process the state can change in mid-stream or walk away from.

"Third, the goals of the process have got to include full protection and restoration of the Estuary. Neither the draft federal standards, nor the state's parallel process, come close to that goal. Adopting short-term protections is only setting the floor, not the ceiling, of what we need to do to protect the Estuary.

Fourth, long-term solutions considered have to include a full range of water management strategies, addressing not just supply but also demand.

"Fifth, the long-term effort should proceed in the context of efforts that have gone before. For instance, we just went through a five-year state/federal process to agree on the 150 actions in the S.F. Estuary Project's CCMP. It would be a sign of good faith and serious intent on the part of the state to begin assuming its share of CCMP implementation and of other joint projects such as those called for in the Central Valley Project Improvement Act."

HARD SCIENCE

FAIL TO HATCH

It's no wonder the California clapper rail is endangered. Foxes and rats are scarfing the species, cities are engulfing its habitat and pollution is contaminating its food. Just how much this contamination is contributing to the rail's demise is the domain of a recent study by U.S. Fish & Wildlife's Steve Schwarzbach.

"To recover the rail in the long term, we're going to have to build some wetlands," says Schwarzbach. "We need to know what level of risk we can expect from contamination in any sediments we use; an idea of how clean is clean."

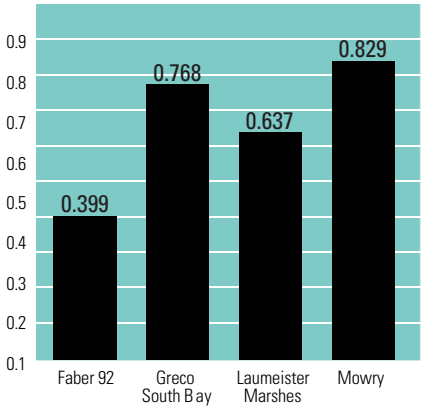
In a 1991-1992 study, Schwarzbach and the S.F. Bay Wildlife Refuge's Joy Albertson examined eggs from 71 rail nests in five S.F. Bay marshes. Schwarzbach measured mercury and other contaminant levels in the eggs and recorded abnormal development, looking for telltale signs of contaminant impacts. To support the nesting study, he measured contaminants in sediments and rail food — purple shore crabs, ribbed horse mussels and mudsnails — collected near nest sites. This integrated study gave him just what he was after.

"We've now got a bioaccumulation factor from sediment to eggs for mercury," he says. Scientists can now take a mercury concentration level in sediments and multiply it by Schwarzbach's factor of 2.427 to predict concentrations in rail eggs.

Schwarzbach found a mean mercury level in sediments of 0.366 parts per million (ppm), a level distinctly higher than the 0.237 ppm at his North Bay reference site. Snails turned out to be the most contaminated prey items, posing a significant hazard. Mercury in the "fail-to-hatch" eggs ranged from 0.19-2.7 ppm. Other lab studies indicate that the lowest observed adverse effect level in avian eggs is 0.5 ppm; at 5.0 ppm embryo mortality soars.

Schwarzbach also measured silver, selenium and DDE (a DDT derivative) and found that concentrations were not elevated to problem levels. He says PCBs may require further investigation. "The one chemical clearly elevated into the toxic risk threshold was mercury," he says.

MERCURY IN RAIL EGGS (PPM - ADJ. WW)



All marshes in the study had abnormally high numbers of non-viable eggs (13.7 - 22.9%). Normal hatchability in rails, even with predation and losses to tides, should exceed 90% according to other studies. Schwarzbach's study is due for publication this summer. Contact: Steve Schwarzbach (916)978-5616 *ARO*

BAY BOTTOM HISTORY LESSON

"Anthropogenic disturbance" may sound like a weather forecast and "human perturbation" a sexual disorder but in a new study of San Francisco Bay's contaminant history they mean one simple thing: human activity. The study documents how human activities over time relate to concentrations of metals, PAHs, PCBs, DDT, and lead and radioactive isotopes in Bay sediments — drawing information from hundreds of cores drilled into the Bay bottom to trap sediment layers in profile. Many have long believed the Estuary too dynamic — too prone to sediment erosion, resuspension and movement — for this kind of study. But the U.S. Geological Survey's Michelle Hornberger says her results on metals show this simply isn't true. "In certain isolated pockets of the Bay we found a clear history," she says, "where metal concentrations taper down from the top of the core to the bottom." The relatively stable sediment pockets were in Richardson, Grizzly and San Pablo Bays.

Hornberger's research challenges another common assumption: that 1850s gold mining is to blame for the lion's share of Bay metal contamination. "The period of urbanization and industrialization had much more of an impact," says Hornberger, who found most of the metal enrichment above 70 centimeters (cm) in Richardson Bay and 120 cm in San Pablo Bay. These two depths are where tell-tale radioactive fallout from 1950s atomic weapons testing disappears. Hornberger also found higher metal concentrations in the North Bay than in Richardson Bay. This may stem from greater industrial discharges in the upper Estuary and more dilution by ocean sediments at Richardson.

Hornberger also discovered a linear relationship between metal enrichments she can trace to human activity (copper, lead and zinc) and two naturally accumulating metals (chromium and vanadium). Levels of the latter two metals don't vary with time, only with geography. "It may be possible to predict what the natural background level of a metal was in a particular part of the Bay based on the chromium and vanadium concentrations," she says. Knowing what metal levels were before people arrived is key to measuring the success of clean-up efforts, adds Hornberger. Her work, as part of the larger study due out soon, may offer the Bay's first record of contaminant history. Contact: Michelle Hornberger (415)329-4467 *ARO*

CAPITOL BEAT

MARKS STALKS BCDC

The S.F. Bay Commission has joined the endangered agency list due to a new bill sponsored by state Senator Milton Marks. According to Joy Skalbeck of Marks' office, SB1933 would authorize a study to identify overlapping, redundant and duplicative mandates among a host of government agencies, including BCDC, the California Coastal Commission, the S.F. Regional Board and the Association of Bay Area Governments. The study would also examine the benefits of merging BCDC with one of the other agencies. The bill is scheduled to come out of the Senate Natural Resources and Wildlife Committee in mid-June. Contact: Joy Skalbeck (916)322-5120 *KA*

ENVIRO-CLIP

THE LAST WILD RIVERS

In California's water wars, each battle has roots in previous conflicts. The Clavey River, a 37-mile tributary to the Tuolumne River that is one of only four undammed rivers left in the Sierra, has become the latest battleground in a blood feud that can be traced to the 1984 California Wilderness Act and even further, to the controversial decision to build Hetch Hetchy's O'Shaughnessy Dam in 1916, a benchmark not only in California water politics, but in the history of the U.S. environmental movement.

The latest salvo was fired April 19 when American Rivers, a national environmental group, placed the Clavey on its top ten list of endangered rivers for the second year. The Clavey is in the top ten not because it has earned a platinum record but because it is a gold standard for undisturbed Sierra riverine ecosystems — and because a $703 million hydroelectric dam project threatens its pristine character.

"If you want a place to study a natural, undisturbed ecosystem, the Clavey comes as close as any place in California," says UC Davis professor Peter Moyle. "My experience is that it's the only drainage in the Sierra with no introduced fish. The Clavey is a reference point for the rest of the ecosystem."

Reference point, shmeference point, says John Mills, director of the Clavey dam project for the Turlock Irrigation District (TID). Mills says the project, which consists of a 413-foot-high dam, four smaller dams and 12 miles of pipeline, is necessary because of California's high growth rate.

"Essentially it's necessary to accommodate the population increase of three-quarters of a million people a year," says Mills. "There's no way you can institute enough conservation measures for that. You need to bring new power on line."

Independent consultant David Marcus came to a different conclusion in testimony to TID's board. Citing several alternative power sources for the district, Marcus stated that the Clavey is "an unneeded, high-cost project that is a poor fit with TID's system."

Evidently feeling the pressure, Mills revealed to ESTUARY that project engineers recently began studying at least one alternative to the big-ticket dam project: a smaller-scale 1986 proposal to divert water farther upstream into an existing reservoir.

Environmentalists interpret Mills' revelation as a sign that they're gaining ground. "He's scrambling now to get anything," crowed Steve Evans of Friends of the River. Mike Urkov of the Tuolumne River Preservation Trust says that if other alternatives are being explored, it's a violation of the law. Urkov says the Clavey River Project, which is now applying for a license from the Federal Energy Regulatory Commission, has not given the public a chance to comment on an upstream diversion alternative, only on the big dam plan. The commission is expected to issue a draft EIS this month.

To win permanent protection for the Clavey, environmentalists must pull off an odd balancing act. The Clavey is set for inclusion in an omnibus Wild and Scenic Rivers bill expected to be introduced to Congress in early 1995 by Congressman George Miller and Senator Barbara Boxer. If the threat to the Clavey recedes too much, it will weaken the environmentalists' case, since a river must be threatened to qualify for wild and scenic status.

The Clavey has been in jeopardy since an 11th-hour compromise between Senators Alan Cranston and Pete Wilson left a loophole in the 1984 California

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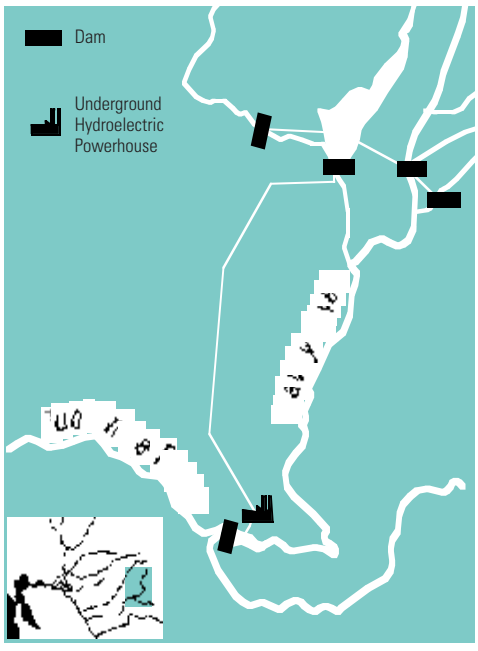
CLAVEY RIVER PROJECT



THE MONITOR

DEMON DIAZINON

Scientists up and down the Estuary are finding the same toxic ingredient in urban stormwater, and it ain't anything "esoteric" like heavy metals from auto brake linings, according to toxicologist Steve Hansen. It's the common garden pesticide diazinon. Hansen's found it in Hayward's San Lorenzo Creek in runoff from residential areas. And the Central Valley Regional Board's Val Connor has found it in City of Sacramento stormwater – enough to kill 100% of the *Ceriodaphnia* (water fleas) in bioassays within 24 hours.

"Here's a situation where you have high levels of toxicity that can easily harm aquatic life in streams and that can just as easily be controlled," says Hansen. "It's pretty obvious what we should do about it. Looking for more esoteric sources of toxicity may not be where it's at."

Hansen's found diazinon toxicity in both dry and wet weather samples. Connor decided to follow his lead but take testing several steps further. First, she wanted to find out how typical her results were. Tests on Stockton, Yuba City and Tracy runoff confirmed the pervasiveness of the pesticide. Second, Connor added piperonyl butoxide (PBO), which inhibits the toxic reaction of water fleas to diazinon and other metabolically activated organophosphate pesticides, to her samples. When the fleas die in PBO-treated samples, which they did in samples from several of Connor's test sites, an additional (and as yet unidentified) toxicant may be present.

The next step, now that diazinon has been shown to be a major urban pollutant, is to track down the source. Though Connor's tests were on city stormwater, Central Valley orchards and farms also use diazinon sprays. "We stuck glass pans out to collect rainwater and wind-blown debris and detected diazinon, which could be from urban or non-urban sources," says Connor. Next year she plans more sophisticated air sampling. Contact: Val Connor (916)255-3111 or Steve Hansen (510)687-5400 *ARO*

CCMP BRIEF

TRACKING IMPLEMENTATION

Citing a common desire to find out who's doing what to carry out actions recommended in the San Francisco Estuary Project's *Comprehensive Conservation and Management Plan* (CCMP), the Implementation Committee at its May 6 meeting set up two subcommittees to gather this information. One group will focus on actions within the wetlands, wildlife, water use and pollution prevention areas. The other will set up geographically focused interagency implementation teams — one each for the Delta, North Bay and South Bay — to synthesize, tailor and localize CCMP actions to sub-watersheds. At the meeting, the Implementation Committee also allocated $150,000 in Congressional add-on moneys for National Estuary Projects to fund a proposal that will help improve livestock management along Alameda Creek. Contact: Craig Denisoff (510)286-0625 *KA*

BOATING POOP

Bay Area boaters may think twice about flushing the head into Estuary waters after a pilot S.F. Estuary Project outreach campaign gets rolling this summer. The campaign implements a CCMP action and is funded through a $120,000 California Department of Boating and Waterways grant under a $40 million federal clean-up initiative. It will encourage boaters to use pump-out and dump stations to dispose of sewage.

The Estuary Project's Joan Patton says vessel discharges threaten water quality and public health, especially in marinas and harbors with minimal water flushing. Wastes from houseboats and other live-aboards have created problems in Richardson Bay, Alviso Slough, Redwood Creek and the Delta, she says. Boating and Waterways' Bill Curry says the program will be a model for expanded efforts in the years to come. "We can't address a statewide problem instantaneously, but the bottom line is we want boat-generated sewage to end up in the sewer, not in the water," says Curry. Contact: Joan Patton (510)286-0775 *KA*

FRIENDS FORGES FORWARD

Seventeen people gathered for a May 13 board meeting of Friends of the Estuary — the nonprofit organization charged with public sector follow-through on CCMP implementation. Board members discussed the formation of an editorial board for this newsletter and heard committee reports. According to Elizabeth Patterson, the Government Affairs committee will work to monitor federal and state legislation that would implement the CCMP. It will also draft language for local-level implementation of the CCMP's land-use, watershed management and nonpoint source pollution control goals. "We want to help local government by providing a model ordinance," says Patterson. See *calendar* for upcoming meetings. Contact: Friends of the Estuary (510)286-0769 *ARO*

TECHNO-FIXES

SCREENING THE SCREENS

Men on the moon, nuclear fission and fish screens. Whether fish screens can move from the realm of scientific utopia to practical use by small farmers is being tested this summer at four quiet spots along the Sacramento River by BurRec in cooperation with farmers, engineers and seven other agencies.

Three types of experimental screens are new this summer. The fourth, musical screens employing underwater speakers to frighten fish away from pumps, are already in the second year of testing near Grimes. Though the sonar has worked to scare off adult fish, it hasn't worked to protect tiny fry or eggs. Officials say the baby fish, even if they wanted to, are too weak to avoid the pumps.

The new idea is to take screens out into the middle of the river and away from the slack water along the bank many believe fry prefer. At the Pelger Mutual Water Company and the nearby farm of Fred Cannell, two different types of experimental self-cleaning mid-river screens are being tested. Further upstream at the Deseret Ranch, the experiments feature more conventional bank screens.

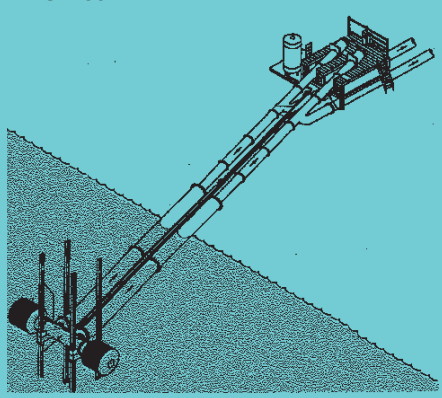
This May, scientists in dive gear examined the Pelger screens — which consist of two tanks the size of Volkswagons on the end of 20 feet of pipe (see diagram) — and found no tears or problems. The tanks are wrapped in screen wire and kept clean by a whirring propeller inside. Water is pumped by conventional slant pumps.

At the Cannell farm, half a dozen 20-inch pipes with smaller tanks on the ends are now being installed. "It's like six straws with a bubble on the end," says engineer Gilbert Cosio, whose company Murray, Burns and Kienlen is overseeing all three field installations. The straw-and-bubble combo is accompanied by an experimental centrifugal pump to suck water from the river and by an air burst pump to clean the screens.

Cosio says BurRec is looking for a lot more than one type of screen. "One screen might work well in deep water but something totally different might be needed in shallow water," says Cosio. He says bank-type screens may be ideal in a place like Deseret Farms, where flow is slow and space to work plentiful.

The 26-foot-deep water in which the Pelger screens are sunk is described as a good test of whether the screens can survive debris and currents. "I've seen whole orchards come down that river," says Scott Tucker, an owner of some of the 3,000 acres of tomatoes and corn served by Pelger.

PELGER SCREEN



Tucker and other farmers put up matching funds for the program. "I think one of the most important things that may come out of this is to show that farmers like Mr. Tucker are willing to put their necks on the line and work with us," says BurRec's Ron Brockman. Contact: Ron Brockman (916)978-5313 *FH*

PLACES TO GO & THINGS TO DO

WORKSHOPS & SEMINARS

San Francisco Bay: The Ecosystem; A Symposium at the Pacific Division AAAS 75th Annual Meeting

MON-WED•6/20-22•All day
Topic: S.F. Bay water properties and quality, physical processes, ecosystem and fisheries resources.
Sponsors: Romberg Center for Environmental Studies, San Francisco State University, U.S. Geological Survey and AAAS
San Francisco State University, San Francisco
Cost: $30-$45 (415)752-1554

The Challenge of Watershed Protection: Tools for Success

TUES-THURS•7/26-28•All day
Topic: Practical tools, action plans, technologies, partnerships and philosophies for watershed protection.
Sponsor: U.S. EPA
San Francisco
Cost: $50 (202)833-8317

Workshop: Bay Area New and Redevelopment Controls for Municipal Stormwater Programs: RWQCB Staff Recommendations

TUES•7/26 and WED•7/27•All day
Topic: How municipal agencies can use S.F. Bay Regional Board staff recommendations to help control stormwater pollution from new and redevelopment activities.
Sponsor: S.F. Regional Board
Hayward and Petaluma
(510)286-0378

HANDS ON

National Fishing Day

SAT•6/11•All day
Activity: Fish without a license at various locations around the Bay-Delta region.
Sponsors: California Dept. of Fish & Game and San Francisco Bay National Wildlife Refuge
Lake Cunningham, San Jose (510)530-2646; William Land Park, Sacramento (916)355-0259; and Dumbarton Fishing Pier, Fremont (510)792-4275

MEETINGS & HEARINGS

CCMP Implementation Committee Subcommittee Meetings

Various dates & locations in June and July
(510)286-0625

State Water Resources Control Board

THUR•6/16
Topic: State Board remand of site-specific copper standard for S.F. Bay and wasteload allocation.
Hearing Room—901 "P" Street, Sacramento
(916)657-0990

Bay Commission

THUR•6/16•1PM
Topics: Public hearing and vote on Galilee Harbor settlement; public hearing on proposed regionwide permit for seismic retrofitting for Caltrans bridge project.
Room 455—State Building, San Francisco
(415)557-3686

Friends of the San Francisco Estuary Government Affairs Subcommittee

FRI•6/17•9:30 AM-12:00 PM
Topic: (*See page 6*).
S.F. Regional Board, Oakland (916)322-7829

Bay Delta Oversight Council

FRI•6/17•All day
Topic: Briefing on introduced species.
Hyatt Hotel, Sacramento (916)657-2666

Central Valley Regional Water Quality Control Board

FRI•6/24•9 AM
Topic: General dredging permit for San Joaquin deepwater channel and other topics.
Redding (916)255-3039

Town Hall Meeting

TUES•6/28•8 AM
Topic: Panel discussion on water issues affecting the San Francisco Bay Area.
Sponsor: Water Education Foundation
Hard Rock Cafe, 1699 Van Ness Avenue, SF
(916)444-6240

Friends of the San Francisco Estuary Board of Directors

FRI•7/8•9:30 AM-12:00 PM
S.F. Regional Board, Oakland (510)286-0460

Watershed Demonstration Projects Quarterly Meeting

TUES•7/19•9:30 AM
S.F. Regional Board, Oakland (415)744-1990

SF Bay Regional Board

WED•7/20•9:30 AM
Board Room – BART Headquarters Building
800 Madison Street, Oakland (510)286-0533

Bay Commission

THUR•7/21•1 PM
Topic: Public hearing on Caltrans I-580/Albany project (tentative).
Room 455—State Building, San Francisco
(415)557-3686

CCMP Implementation Committee

FRI•8/5
Vacaville (510)286-0460

NOW IN PRINT

Biological Resources, Delta Water Supplies, Levee and Channel Management and Water Quality
(draft briefing papers)
Bay Delta Oversight Council
Copies from (916)657-2666

Fisheries, Wetlands and Jobs: The Value of Wetlands to America's Fisheries
William M. Kier Associates for Campaign to Save California Wetlands
Copies are $5 each from (510)654-7847

Investigation of San Francisco Bay Shallow-Water Habitats
Kitting, California State University Hayward
Copies from (707)578-7513

Polluted Runoff: Watershed Solutions
State Water Resources Control Board
Copies from Sid Taylor (916)657-0432

Proceedings: Alameda Naval Air Station's Natural Resources and Base Closure: Planning for the Future; A Scientific Symposium
Golden Gate Audubon Society
Copies from (510)843-2222 (available July 1)

Restoring Central Valley Streams: A Plan for Action
California Department of Fish and Game
Copies from (916)653-7664

Volunteer Estuary Monitoring: A Methods Manual
U.S. Environmental Protection Agency
Copies from U.S. EPA Office of Wetlands, Oceans, and Watersheds, 401 M Street, SW, (4504F), Washington, D.C. 20460

Watershed Protection Techniques (new periodical)
Subscriptions are $34-$54 from Watershed Protection Techniques, Suite 205, 1020 Elden Street, Herndon, VA 22070

ENVIRO-CLIP CONT.

Wilderness Act specifically excluding the Clavey from protection. The loophole was engineered by Congressman Rick Lehman, whose district included Tuolumne County.

Lehman's action was not surprising given the longstanding grudge match between Tuolumne County and San Francisco over both water and power. TID's Mills is a third-generation native of the Tuolumne area. Arguments for biodiversity — the Clavey is one of the state's few surviving native trout fisheries and hosts 14 species under consideration for endangered status — don't seem to impress him as much as the historic competition between the country and the city.

"Tuolumne County gets only four-tenths of one percent of the water it has behind dams," says Mills. "It all goes to San Francisco. The San Francisco Board of Supervisors voted against damming the Clavey. Tuolumne supervisors supported tearing down O'Shaughnessy Dam."

Never mind that the Clavey project was originally designed only to provide electricity. Mills claims that it also will furnish as much as 50,000 acre-feet of water, which can be sold for as much as $15 million a year.

Urkov calls Mills' projections absurd. "There's not going to be any water for Tuolumne County from this dam," he says. "The reservoir is only 120 acre-feet. To take that much water, they would lose their capacity to generate power. If they were honest they would work on an addition to Lyons reservoir and leave the Clavey alone."

If that happens, the Turlock Irrigation District will lose the approximately $8 million it has already sunk into the project.

Mills says he wouldn't be the first soldier to fall on this battlefield. "It's the old water wars of California," he says. "Mark Twain is someplace laughing still."
Contact: Mike Urkov (415)292-3531 or John Mills (209)532-9605 *SZ*

ESTUARY

YOUR BAY-DELTA NEWS CLEARINGHOUSE

JUNE 1994 VOLUME 3, NO. 3

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Co-published bi-monthly by Friends of the San Francisco Estuary, a nonprofit organization, and the San Francisco Estuary Project, a cooperative program of the U.S. Environmental Protection Agency and the State of California. *Views expressed may not necessarily be those of staff, advisors or committee members.* Estuary *is funded by individual and organizational subscriptions, and by a start-up grant provided by the San Francisco Estuary Project. Printed on recycled paper with soy-based inks by Alonzo Printing Co.*

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