YOUR INDEPENDENT SOURCE FOR BAY-DELTA NEWS & VIEWS

# ESTUARY

## OFF-STREAM GATHERS STEAM

Whatever strategy CALFED selects to fix the problems of the Bay and Delta, the chances are good that it will include increasing the state's water storage capacity. Among the many ways to store water, the one currently getting the most attention involves so-called "off-stream" storage, rather than traditional in-stream reservoirs.

Historically, reservoirs have been created by damming rivers, backing them up to form artificial lakes. In contrast, off-stream storage involves pumping water out of the source river to a man-made reservoir that may be located miles away. Off-stream is likely to be the wave of the future because "there are probably no feasible sites in California for in-stream reservoirs large enough to meet our storage needs," says CALFED's Dick Daniel.

New storage figures in all three of the alternatives proposed by CALFED, the cooperative state and federal effort to meet the state's water needs and restore the ecological health of the Bay-Delta, but how much and where remain big questions. One possibility is to raise existing dams, such as Shasta, to increase their capacity, but this approach can cause significant environmental impacts, according to Daniel. Storing water underground in aquifers is another possibility, also with possible drawbacks. "Large-scale groundwater withdrawals can cause land subsidence," says the Kern County Water Agency's Lloyd Fryer.

Daniel notes that the off-stream approach has a number of advantages. It allows water managers to pump water away from a river during high flow periods and hold it until needed. "It gives us an opportunity to store water with less environmental impact than traditional reservoirs, which disrupt natural flow patterns," says Daniel. It's also preferable to groundwater storage says Kern County's Fryer because "it lets you cycle water in and out of the reservoir rapidly enough to meet peak demand schedules. Cycling of groundwater is slower and steadier."

Another advantage is that intakes for off-stream reservoirs can be located so as to minimize interference with natural processes. For example, Daniel says that CALFED is looking at a possible diversion point on the Sacramento River near the town of Colusa, where levees begin to hem in the river. Above this point the river is still in a relatively natural state, with its flood plain largely intact. "Off-stream storage lets you capture water after it has done its work," says Daniel, adding that three possible reservoir sites near Colusa are the "front-runners for off-stream storage north of the Delta." Other possibilities include the Los Banos Grandes Project near the San Luis

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# The Art of a Clean Beach

There's a mystery in the making on the Oakland waterfront, and the first clue isn't a knife in the dumpster but a snackpack wrapper on the beach. Indeed locals scouring the trash and boatwreck-cluttered shoreline discovered a second important clue when they scrutinized the plethora of empty wrappers: no pricetags. Since they're not marked for individual sale, clean-up crews speculate that they may be coming from a school upstream.

The detective on the case is Patty St. Louis, one of 150 artists, boatbuilders, woodworkers and other craftspeople who live and/or work on the Fifth Avenue Peninsula near Clinton Basin. Locals here often pop out to this small, ecologically sensitive stretch of shoreline amid the busy Oakland harbor for a breath of fresh air and a look at what St. Louis deems a "large population of watchable wildlife." But geography and local activities have conspired to make the Clinton shoreline both a catch basin for floating trash and an aquatic parking lot for derelict fishing, sailing and pleasure boats.

> "Stopping solid waste pollution is very much a place-based issue"

Neighbors — organized through the one-year-old 5th Avenue Waterfront Alliance — began tackling the trash last September by volunteering for California coastal clean-up day. St. Louis then pulled together an ongoing beach patrol and contacted the Bay Conservation and Development Commission about the boats. They in turn gleaned a promise from the Port of Oakland to spring clean what locals call "Shipwreck Point" this May.

The community's efforts on their shoreline's behalf caught the attention of the state coastal clean-up day organizer, the California Coastal Commission, as well as the Center for Marine Conservation. Last year the Center mobilized over 370,000 volunteers in 90 countries in a campaign to attack what the Center's Seba Sheavly calls "the most solvable marine pollution problem we have."

The two groups were particularly interested in Oakland as a model project for a new Center program aimed at getting beyond the beach clean ups to the sources of local debris, and at empowering communities to change disposal habits. Indeed this spring, the Coastal Commission, as local sponsor, asked 5th Avenue to become the newest of six such model projects across the nation.

"Stopping solid waste pollution is very much a place-based issue," says Sheavly. For a New Jersey boardwalk, for example, the problem is packaging of everything from french fries to salt water taffy, while for Pinellas County Florida, it's 120 marinas in dire need of waste recycling programs. Another model project, this one in Puerto Rico's San Juan Bay, is juggling eight communities with many beachside restaurants and kiosks, not to mention numerous cruise ships and commercial vessels calling into port with their tourists and refuse each week. In this project, locals have been put to work on trash surveys, restaurants on earning "green" certificates, and vendors on switching to more eco-friendly food containers.

The Center for Marine Conservation supports these model projects via small grants, education tools and data cards for logging types of litter collected (toys, condoms, magazines, diapers, fishing lures, syringes, oil drums and hard hats — you name it, it's on the card list). Sheavly plans to develop a tool kit of information gleaned from each model so that other areas can find site-specific approaches for their "kind of beach, kind of trash, and kind of community."

Oakland's close-knit 5th Avenue neighborhood clearly has a unique approach. Since last fall, the Alliance has organized a well-attended naturalist-led estuary walk and a

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## BULLETINBOARD

**COWS AND HORSES IN DEEP DOO** — This February's storms flooded numerous stable stalls, paddocks and horse pat piles, sending soil and manure into nearby ditchs and creeks. So this spring, the Alameda County Resource Conservation District announced plans to fund an equestrian facility demonstration project complete with water quality-minded strategies for streambank protection, erosion control, manure management and more. February also found the district giving a water quality planning course to 15 area ranchers. The course stressed that many conservation practices — such as watering cattle at troughs rather than streamsides — are as good for cattle and cattlepeople's pocketbooks as for land, water and wildlife. Contact: (510)371-0154

**NEW FILL RULES** — Filling the Bay to improve fish and wildlife habitat can only occur if the project meets certain conditions, according to new guidelines being drafted by the S.F. Bay Conservation and Development Commission. Specifically, the site must be permanently preserved and managed as a wildlife refuge, the project must be the only possible way to improve wildlife habitat, the location and type of fill used must be based on competent environmental studies and consistent with the advice of wildlife agencies, and the project must use the least possible amount of fill material and must not adversely affect water quality. Furthermore, the project must have measurable objectives and establish a program to monitor its success. If it fails to meet its objectives the fill must be removed. The Commission will hold a hearing on the draft guidelines on May 7 (comments accepted until then). Contact: (415)557-8773

**DELTA-FIX HITS STREETS** — CALFED has finally released its long-awaited draft programmatic Environmental Impact Statement/ Report on three alternative plans for fixing the Delta. For a copy call (916)657-2666

**FROG RECOVERY PLAN** — Recovery planning for "one of California's literary icons," the red-legged frog, is underway says U.S. Fish & Wildlife's Patricia Foulk. The frog, made famous in Mark Twain's short story about the Calaveras County jumping frog, was named a federal threatened species in 1996. Fish & Wildlife is now seeking public input on the plan, which will define management actions to help the frog, the largest native frog in the western U.S. Comments to Field Supervisor, U.S. Fish & Wildlife, 3310 El Camino Avenue, Sacramento, CA 95821-6340.

## BUSINESS

### FARMERS TO SLAKE SUBURBAN THIRST?

A small agricultural irrigation district is making plans to sell enough water to serve the next 80,000-100,000 homes in San Joaquin County.

The South San Joaquin Irrigation District (SSJID) currently diverts about 225,000 acre-feet of water each year from the Stanislaus River to farmers within a 70,000-acre area around Escalon, Ripon and Manteca. Now, the district wants to sell 50,000 acre-feet of its surface water allotment to the growing cities of Lathrop, Manteca, Tracy and Escalon. Manteca and Escalon are located within the water district boundaries, but Tracy and Lathrop are not.

In addition to the 50,000 acre-feet of water that SSJID wants to sell to the four cities, the district has teamed up with the other major water diverter along the Stanislaus River, the Oakdale Irrigation District, to sell an additional 30,000 acre-feet to the Stockton East Water District, which serves some of the Stockton metro area. Farmers and environmentalists question whether there is enough water in the Stanislaus to sell to the cities without putting existing agricultural operations and the environment at risk during drought years.

Not to worry, say the general managers for the two districts, they have plenty of "excess" water to sell. When the New Melones Dam was built in the early 1970's, the two irrigation districts negotiated a contract with the U.S. Bureau of Reclamation (BurRec) for 600,000 acre-feet of Stanislaus River water. The two districts now use an average of about 500,000 acre-feet or less during normal years, although the amount varies from year to year.

SSJID manager Rick Martin estimates there would be enough water during eight years out of ten, but during drought some parties would have to be cut back. However, history has shown that when urban toilets and swimming pools are competing with farmers and fish for water during drought years it's usually the latter who lose.

The most outspoken critics of the planned water transfers are those who stand the most to lose during drought years: farmers like Alex Hildebrand in Manteca who depend on riparian water rights along the lower portion of the San Joaquin River, downstream of the Stanislaus. Riparian water users claim that there is no "excess" water from the Stanislaus to transfer to suburban growth and that sale of that much water out of the district will adversely affect downstream farmers who rely in part on "return" flows (water from irrigated lands that flows back into the river system and recharges groundwater). Hildebrand and the South Delta Water Agency have already threatened lawsuits to stop the water sales.

The irrigation districts seem to believe that if they don't use their excess water (by selling it), they will "lose it" by letting it flow into the Delta, where the federal government will pump it to Southern California cities. The districts also believe that the Feds will claim any unused water to release higher flows down the Stanislaus and San Joaquin Rivers to help fish migration.

This "use it or lose it" water philosophy has been embraced by pro-growth city officials and developers who need the surface water to fuel an explosion of planned suburban development in San Joaquin County over the next twenty years. Hugely speculative projects like the 11,000-home Califia/Gold Rush City project in Lathrop cannot be built without a surface water supply. In Tracy, the city wants to quadruple its population by building 45,000 homes and desperately wants the SSJID water instead of having to rely on negotiating new contracts with BurRec for more Delta water. Similar large-scale transfers of water from agricultural irrigation to suburban water districts to serve new growth are being discussed in the adjacent counties. In Stanislaus County, for example, the Turlock Irrigation District is proposing to sell 11,000 acre-feet of water to the Diablo Grande "new town" project being built in the arid hills south of Tracy. Diablo Grande is designed as a high-end golf and residential project, with 5,000 homes and six golf courses.

In San Joaquin County, SSJID is now preparing two separate environmental impact reports to study the effects of their proposed 80,000 acre-feet of water transfers to Stockton and the four cities. After the EIRs are released later this summer, the agency will hold public hearings. Coincidentally, CALFED recently unveiled its long-awaited blueprints and EIR for improving water supply reliability, repairing levees and restoring the Delta ecosystem. It seems likely the SSJID will approve the water transfers before CALFED makes a final decision about how water may be reallocated to accomplish a far different common good than suburban bliss in the valley. Contact: Rick Martin (209)823-3101 or Eric Parfrey (510)420-8686 EP

# RESTORATION

## A TALE OF TWO CREEKS

Can urban streams, many partially channelized for flood control or buried in city culverts, ever again offer viable fish habitat? Can their rural riparian cousins provide anything better, with their dams, pumps and streamside cultivation, grazing and timber-cutting? Both once offered clear and bubbling spawning grounds for big runs of chinook, coho and steelhead, and their would-be-restorers believe they could do so once again. When it comes to restoration, rural and urban creeks surprisingly face many of the same issues: physical obstacles such as dams and weirs, as well as legal and political battles over instream flows.

## BUTTE CREEK

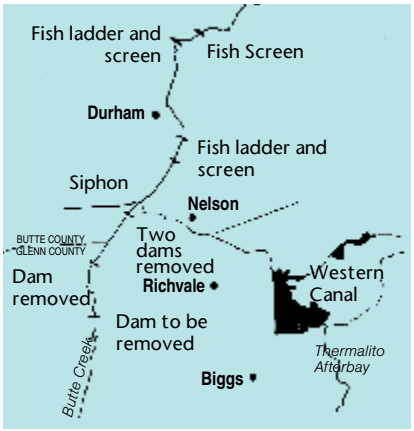
Herculean efforts to improve passage for fish on Butte Creek — including the installation of a gigantic inverted siphon 30 feet beneath the creekbed — are underway on this Sacramento River tributary that flows through rice country far upstream in the Estuary watershed. Dams are coming down and fish ladders going up, in the hope of enabling fish — particularly spring-run chinook salmon— to reach better upstream habitat.

Butte and two neighboring creeks to the northwest, Deer and Mill, are key habitat for the remaining wild, genetically pure spring-run chinook, once possibly the Central Valley's most abundant salmon. In recent decades, runs of these chrome-colored fish have seriously declined, and the dozen or so water diversions to rice and farm fields along Butte Creek made many people think that restoring the salmon here was a lost cause. One of the worst problems was a large unscreened diversion that, with the help of two dams, moved diverted Lake Oroville water through the creek to irrigate rice fields (see map). The dams also altered flows and presented an obstacle for adult fish trying to swim upstream to spawn. And during low flows, the large diversion sucked juveniles out of the creek and onto rice fields.

Eventually, rice farmers in the Western Canal Water District (which owned the dams) began talking about what might be done to help salmon. They knew that if spring-run chinook were listed as endangered (see Species Spot), their diversions might be shut down just when they most needed the water. "Our primary motivation was the fish and the potential listing of the spring-run," says Lance Tennis, Western Canal's President. "We needed to get water across the creek without the dams, somehow. After considering all of our options, we decided on the siphon because we knew it would work. We weren't sure if a fish screen would work on that diversion, plus it would have needed high maintenance."

The new siphon pulls the diverted Lake Oroville water 30 feet beneath the bed of Butte Creek in three 850-feet long parallel tubes (each ten feet in diameter) and across to the creek's west side. Designed by CH2M Hill, the siphon eliminated the need for the fish-unfriendly diversion and the two dams. Upstream, three new fish ladders and four screening projects are also under construction.

**BUTTE CREEK: BARRIERS AND BENEFITS**




The $9.5 million for the siphon, new delivery canals and the demolition of four dams is coming from Western Canal, the CVPIA, CALFED's Category III and Tracy Pumps Mitigation funds. All parties involved hope their efforts will lead to a sustainable spring and fall run of chinook. Cal Fish & Game's Paul Ward thinks fish may soon stand a chance in Butte Creek: "This project opens up 18.5 miles of creek to the fish and allows the stream bed to return to more natural conditions."

## ALAMEDA CREEK

Like its country cousin, Alameda Creek's biggest obstacles for fish are dams and insufficient flows. The creek— which drains over 700 square miles of the South Bay region — is the target of efforts to save a different migratory species — the threatened steelhead trout. Last December, a Fremont boy discovered a dying steelhead trying to swim up the creek. Two weeks earlier, a 20-pound chinook was found trying to climb a concrete weir under the BART tracks — the same spot where 25 chinook were found struggling a year ago.

These sightings motivated Jeff Miller to form the Alameda Creek Alliance, a community group interested in restoring the creek's natural ecosystems and native fish. The Alliance is focusing on steelhead but, as

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# SPECIESSPOT

## MIGRATING FISH ROCK THE BOAT

The "window of opportunity" when water can be pumped from the Delta with relatively little harm to migrating fish may become harder than ever to find as a result of several actions this winter by the National Marine Fisheries Service. In February, the Service proposed listing wild fall-run chinook salmon as "threatened" and spring-run as "endangered" under the Endangered Species Act. Less than a month later the service designated Central Valley steelhead trout as a "threatened" species. The state now has a year to head off final listings for the salmon runs by coming up with a plan to restore them, while the Service is working with the state to develop restoration actions for steelhead.

Until now, fish protection strategies have largely focused on already-listed winter-run chinook and striped bass and, says U.S. EPA's Bruce Herbold, have centered on getting young fish past Delta pumps as quickly and safely as possible. These strategies will likely be inadequate to protect steelhead and spring-run and fall-run chinook, each of which has very different habits from the winter-run.

As the name implies, adult winter-run chinook, which historically spawned in the very cold streams of Mount Shasta, move upstream in the winter to Shasta Dam. They spawn below the dam in the summer, and the young move out through the Delta early in the spring. Fall-run chinook begin migrating upstream at the start of the rainy season each autumn. Young emerge from January to March, and two or three months later move through the Delta, where their relatively small size makes them highly susceptible to entrainment and predation.

Spring-run, on the other hand, spend much more time in creeks. Adults move upstream in April and May, now primarily into relatively unspoiled Deer and Mill Creeks, where they remain until they spawn and die the following fall. Young may remain in the creeks for up to a year before moving out.

"Spring-run tend to move out during the time when we are pumping the most. Protecting them means keeping more water in the streams during the peak irrigation season," says the Bay Institute's Elise Holland. What's more, Herbold says that in some years, for unknown reasons, the spring-run fry move into the Delta much earlier than usual and remain there

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## SPECIES CONTINUED

until they are ready to continue out to the ocean. Steelhead are similar to spring-run chinook in that they move far into tributaries to spawn.

Holland notes that fish protection currently depends on a strategy of pumping water from the Delta during periods when it poses the least threat to fish. With the new listings, "there will always be protected fish at some life stage in the system," she says.

As a result, the listing actions may give advocates of new storage (see cover) and water conveyance facilities some ammunition. "Historically, water suppliers have taken more water in the summer months when there's less to take," says Herbold. "This will intensify the pressure on CALFED to take more water when there's more available," which might well mean developing additional storage capacity. The listing actions will also "draw everyone's attention to conveyance, a critical component of recovery," says the Fisheries Service's Gary Stern. "There's no question that the current location of the export pumps in the south Delta is lousy for the fish."

The Fisheries Service is putting much of its faith in the CALFED and Central Valley Project Improvement Act processes to "carry most of the load for restoring flow regimes and habitat for these species," says the Service's Jim Lecky. He says his agency intends to stand by the commitments made in the Bay-Delta Accord not to require farms and cities to relinquish more water for fish protection. "If it turns out that we need more water we will find other ways to get it," he says. Many CALFED participants, however, are wary.

"It complicates the problem of how you apportion water and money to protect all listed and potentially listed species," says Holland. Jason Peltier of the Central Valley Project Water Association agrees. "We are all struggling to understand the potential consequences of these actions," he says, citing the possibility that groups unhappy with CALFED's outcome might use new ESA listings as the basis for litigation.

"This just creates one more reason why all parties should want CALFED to succeed," says Peltier. "If the dark side of the ESA comes out it could create the kind of conflict that could stalemate us." Contact: Elise Holland (415)721-7680 or Jim Lecky (562)980-4000 CH

## CREEKS CONTINUED

Miller explains, "Any benefits to the steelhead will also benefit other salmon."

After yet another obstacle-weary steelhead turned up this March, Miller convened a group of engineers, hydrologists and biologists from Cal Fish & Game, the National Marine Fisheries Service and the East Bay Regional Parks District at the creek. While they were there, a group of steelhead serendipitously appeared, just below the BART weir (see map). "Their timing was impeccable," says Miller.

The 12-foot sloping weir (built to protect railroad and BART piers and owned by the Alameda County Flood Control District) is the second barrier fish face as they begin their swim upstream. The first is one of three inflatable dams used by the Alameda County Water District to impound and divert water for groundwater recharge in nearby gravel pits. Farther upstream in Niles Canyon, two old dams owned by the San Francisco Water Department impede fish migration too, particularly during low flows. As neither dam has been operated for some time, creek supporters hope they can be taken down.

Much farther upstream, dams at Calaveras, Del Valle, and San Antonio Reservoirs impede flows and de-water the lower stretches of the creek, preventing juvenile steelhead from reaching the Bay on their out-migration. A complaint filed by CalTrout requires the San Francisco Water Department to release water for rainbow trout (the steelhead's nonmigratory "cousin") and other native stream-dwellers in a 4-6 mile stretch just below Calaveras Reservoir, which would also benefit steelhead — but just in that stretch. However, the water department has plans to recapture that water just a few miles downstream and pump it back into Calaveras Reservoir for municipal supplies.

The Creek Alliance believes that with the steelhead now federally listed as a threatened species, upstream dam owners are obligated to guarantee flows throughout the creek so the fish can move, unimpeded, between their spawning habitat and the Bay (and ocean). San Francisco City Attorney Josh Milstein hopes that "something can be done for the steelhead" within the context of the City's new Water Supply Master Plan, but says it will take time.

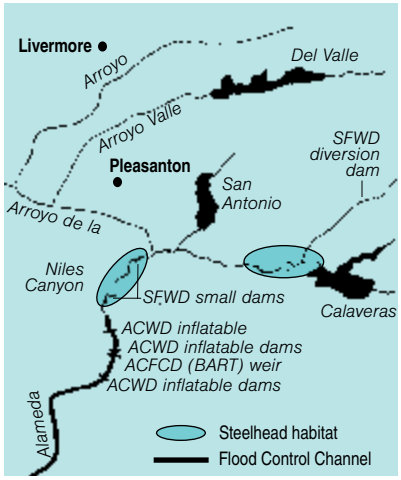
The Alliance, meanwhile, is "negotiating with everyone" and hoping for help from seemingly unlikely sources. One possible solution might be for the Army Corps, under a Section 1135 planning grant (that allows environmental restoration on previously built flood control projects), to help build a fish ladder on the BART weir and excavate a passageway for fish within the old flood control channel that carries the creek for its last 11 miles into the Bay. This year, a few steelhead even tried to spawn in the shallow channel itself. "They dug out their redd in gravel that had been deposited in the channel, but moved on when they saw concrete just a few inches below," says East Bay Park's Pete Alexander ("redd" refers to a shallow nest for their eggs). "We are looking at these lower creek channels only as migration corridors to get the fish to ancestral spawning habitat upstream." Until better solutions emerge, Alameda's water district has agreed to keep alive any fish it finds below the concrete weir or in the channel.

Alexander believes a restored Alameda Creek could support runs of steelhead and possibly chinook, especially since good habitat exists in the creek's upper reaches. "A large percentage of the watershed is still relatively natural," he explains but admits that issues like pollution from runoff and illegal dumping still need to be addressed.

"We're focusing on lower watershed access issues right now," says the Alliance's Miller. "But we're working our way upstream, like the fish. The habitat is there. It's just a question of getting the fish to it."

Contact: Lance Tennis (916)342-5083, Paul Ward (916)527-8987 or Jeff Miller (510)595-8671 LOV

### ALAMEDA CREEK CHALLENGES



# SCIENCE

## EL NIÑO: THE GOOD, THE BAD AND THE UGLY

Though El Niño browned the Bay and clouded the skies this spring, this periodic ocean-atmospheric disruption named for the Christ child can't be blamed for everything. Scientists looking at the life below the brown chop are finding that most critters are weathering the deluge of mud and freshwater runoff fairly well, and that in the South Bay aquatic springtime is filling the water with more blooms and blossoms than anyone has seen in the past quarter century.

The most obvious impact, the brown Bay, alarmed the local citizenry more than the biologists. This March, TV reporters listened as callers claimed the Bay was "dying" and blamed El Niño. But when the media finally questioned scientist Jan Thompson about the cause of the brown water, she pointed out that similar conditions occurred in 1997, long before El Niño's rebirth.

Like last year's "Pineapple Express" from Hawaii, El Niño's rains sent masses of new sediment and water into the Estuary. But the impacts were much more spread out and even than the sudden havoc of last year's storms. Levees haven't failed — in fact the Central Valley remains largely unscathed. And contrary to early news reports, El Niño hasn't killed all the clams and other critters living on the Bay floor — by burying them in new mud — or deprived them of their dinners. "You have to remember that widely variable conditions are exactly what estuarine organisms are adapted for," says the U.S. Geological Survey's Thompson. "Before we put in dams and reservoirs they lived in a world like this." Clams crawl in their shells and hunker down until things get better, says Thompson, and pockets of survivors easily replace any losses by reproducing with unusual speed.

On a mid-March Geological Survey cruise from the North to the South Bay, hydrologist Cindy Brown noticed a couple of inches of new sediment and a few dead clams at the mouth of the Sacramento River, but plenty of survivors crawling up out of the mud there and further down at Roe Island. At the Carquinez Strait, however, the bottom was completely "scoured clean" of mud, says Brown, much more so than in previous high flow years. Past the strait in San Pablo Bay she found no live clams at all, but she attributes this to their intolerance for fresh water rather than smothering. Indeed the flush of fresh water has reduced San Pablo Bay salinity from a recent average of 12-25 parts per thousand to 4-19 ppt. But none of these conditions are going to "wipe out" the clams, says Brown.

Down in the South Bay, it's going to be a remarkable year in terms of biological production, according to the Geological Survey's Jim Cloern, also aboard the mid-March cruise. "It's like watching the trees bloom and the daffodils come up — the water column is coming to life. This the largest abundance of phytoplankton I've seen in 25 years," he says. The very high freshwater flows that have turned the North Bay "into a giant river" this year, according to Cloern, have also strongly stratified the South Bay water column, producing ideal conditions for a big spring bloom. The layering stimulates plant and animal growth in the fresher, sunlit upper layers. The amount of chlorophyll in the water — an indicator of plankton growth and food production — was more than double that of previous years

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# THE MONITOR

## CENTRAL VALLEY PINPOINTS HOT SPOTS

The Central Valley's most polluted waterways occur near the City of Stockton, according to a report just released by the Regional Water Quality Control Board. While the most ubiquitous pollutants are the insecticides diazinon and chlorpyrifos, mercury, which has accumulated in sediments throughout the Estuary, may be longer lived and harder to control.

According to the report, runoff from the 500,000 pounds of diazinon sprayed each winter on Central Valley orchards has made the Delta toxic to zooplankton at the base of the aquatic food chain. And runoff of diazinon and chlorpyrifos — ingredients in household products like Raid, Ortho and Black Leaf — have caused several back-sloughs and urban creeks near Stockton and Sacramento to be designated as candidate hot spots as well.

"If we could control the offsite movement of the insecticides, they could be gone in a year," says the Regional Board's Chris Foe, "but with mercury, even if we rolled up our sleeves and starting working right now, we might see improvement in 50 years. We managed, through Placer gold and mercury mining, to create this problem over a long period of time. It's going to take a long time for nature to heal that."

Another hot spot—the San Joaquin River near the Stockton wastewater treatment plant—is less of a long-term problem but may still be difficult to solve. Although the treatment plant has attempted to comply with stringent effluent limitations, the river consistently tests low in dissolved oxygen. Modeling performed by the City, however, showed that the river would not meet dissolved oxygen standards even without the plant's discharges. In late summer, when the big pumps at Tracy are exporting large amounts of water, the San Joaquin's flow near Stockton is sometimes zero—or is even reversed, contributing to even lower oxygen levels.

Low dissolved oxygen levels are also suspect in frequent fish kills in four urban waterways in the South Delta listed as hot spots. Although the cause of the low oxygen is thought to be urban runoff, the exact chemicals depleting the oxygen are yet to be identified. Foe says most of the kills occur when the first rain of the season washes leaf litter and urban debris—as well as anything illegally dumped in storm drains—into the sloughs, which "don't flush very well themselves."

DeltaKeeper Bill Jennings, who recently found 5-Mile Slough toxic to fathead minnows, thinks most people don't realize the degree of toxicity in these waterways. "Following storms, all of the waterways in and around Stockton go toxic," he says. "Almost every bioassay we send up to Davis comes back showing acute mortality." Jennings attributes the low oxygen problem to discharges from area dairies and food-processors, some of which have repeatedly violated discharge standards, he says.

The Regional Board plans to work with stakeholders over the next six to eight months to finalize a cleanup plan for the hot spots. The Board must report its findings to the state board by December 1998 for inclusion in a California-wide hot spot plan to be turned over to the legislature.
Contact: Chris Foe (916)255-3113
or Bill Jennings (209)464-5090 LOV

## CLEAN BEACH CONTINUED

March 21 spring festival complete with water taxi tours and an introduction to the rich histories of local boatbuilders, ironworkers and artisans.

"As an arts community, we respond deeply to the marine aesthetic of our neighborhood," says St. Louis, who recently supervised art students in painting a mural of two rare local birds — the Barrow's Goldeneye and California least tern — on a wall visible both to diners at the Seabreeze restaurant and to wildlife winging by. "I thought a really big picture of the birds might attract some from far away," she says.

St. Louis is also making a colorful flag out of the mysterious snackpack wrappers dominating her litter logs. By this summer, she hopes to have tracked down their source. After that, St. Louis hopes to reach out to other neighborhoods, with help from the City and the Center, in an Oakland-wide educational campaign to stop shoreline litter. Only then, perhaps, will all the clues and characters in this waterfront mystery surface.
Contact: Patty St. Louis (510)465-0718 or Seba Sheavly (757)496-0920 ARO

## READERS!!!

Call, fax or email us your story ideas! What have we been missing? Who should we interview?

(510)286-4392

(415)989-9024 fax

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# ENVIRO-CLIP

## FLOOD OF HCPS RAISE QUESTIONS

Habitat conservation plans, the agreements used to broker deals on land where endangered species are found, are likely to be the central battleground for biological diversity over the next decade. With more than 200 HCPs approved since the Clinton administration took office in 1993 and 200 more in the pipeline, the agreements are coming under fire from environmentalists — and their lawyers — who are clamoring for better scientific scrutiny, more solid funding sources and increased citizen input. "I'm not against HCPs," says Peter Galvin of the Southwest Center for Biological Diversity. "But they have to be done right."

How to do them right remains the question. Formal debate began with a case successfully argued by prominent wildlife attorney Eric Glitzenstein, which forced U.S. Fish & Wildlife to issue a regulation formalizing a controversial element of the HCPs — the "no surprises" policy. The policy assures landowners that they will not have to provide any more land or money than called for under the HCP, even if new scientific evidence shows that species are declining, either because of changing conditions or flaws in the plan. The final rule on the policy took effect March 25.

The debate continues as legislators consider two alternative revisions to the Endangered Species Act. Idaho Senator Dirk Kempthorne's revision, S. 1180, codifies many of the practices now being used in HCPs, including the no surprises policy. Rival ESA bill H.R. 235, put forward by California Representative George Miller, contains many of the landowner incentives found in the Kempthorne bill but also has strong provisions for citizen input and scientific review of HCPs.

The 1982 amendment to the Endangered Species Act that made HCPs possible was suggested by two California real estate attorneys working for a Bay Area developer. Steve Shimberg, who now works for the National Wildlife Federation, was on the staff of the Senate Environment and Public Works Committee in 1982, when the lawyers came to him with a proposal to protect a chunk of land on San Bruno mountain outside San Francisco if the rest of it could be developed without interference.

*Swainson's hawk protected by Yolo County HCP.*

Shimberg thought this might be a good idea, but insisted on strengthening protection for the mountain's mission blue and callippe silverspot butterflies. What resulted is Section 10 of the ESA, which allows endangered animals or plants to be killed in exchange for protection and management in other parts of their habitat. An HCP is a mandatory, stakeholder-negotiated, public-private planning document that outlines the conditions under which this exchange can take place.

"HCPs were supposed to contribute to recovery of the species, to be a net gain for species, not a net loss," says Shimberg. "But now, they (U.S. Fish & Wildlife) say if you're not jeopardizing the species, that's enough. They seem so gun-shy that they'll do anything to keep the developer from complaining."

Last year, the National Science Foundation and the American Institute for Biological Sciences funded a team of 119 graduate students and professors from eight universities to evaluate 206 HCPs. Their findings echoed Shimberg's critique. One problem they found is that adequate research to support the plans often doesn't exist. The other was that even when good science is available, it is often eclipsed by politics.

"There are a huge number of HCPs that probably should not have been written," says the University of Washington's Peter Kareiva, who organized the study. "On the other hand, people have said there's no science in HCPs and that's just not the case. Where the information exists maybe half get the science pretty well."

Eric Glitzenstein believes that the emphasis on habitat conservation plans obscures the fact that U.S. Fish & Wildlife is simply failing to enforce the Endangered Species Act's prohibition on destroying habitat, which has been legally defined as a prohibited "take" of species. "They've never tried to enforce in any meaningful way the provision against taking (or harming) species on private land," says Glitzenstein. "Imagine trying to enforce the Clean Water Act by telling people we won't enforce any action on what comes out of the pipes, it's all voluntary. Do we offer people incentives to comply with criminal laws? The ESA should be like other laws, not the bastard stepchild of environmental law."

To see the federal register go to *www.access.gpo.gov/su_docs/aces/aaces002.html*

SZ

# PLACES TO GO & THINGS TO DO

## MEETINGS & HEARINGS

APR TUES – THURS 21 THRU 30 / MAY TUES – THURS 5 THRU 14

**CALFED HEARINGS**
Topic: Draft EIS/EIR
Locations: Ontario, Fresno, Oakland, Burbank, Bakersfield, Santa Cruz, Irvine, Walnut Grove, Chico, San Diego, Pittsburg, Redding
7:00 PM
(800) 700-5752

## WORKSHOPS & SEMINARS

MAY SUN – WEDS 3 THRU 6

**WATERSHED '98**
Topic: **Watershed Management: Moving from Theory to Implementation**
Sponsor: Water Environment Federation
Location: Denver, CO
(703) 684-2400

MAY SUN – WEDS 3 THRU 6

**NATIONAL CONFERENCE ON ENVIRONMENTAL DECISION MAKING**
Sponsor: National Center for Environmental Decisionmaking Research
Location: Knoxville, TN
(423) 974-0280

MAY WEDS – FRI 6 THRU 8

**ACWA SPRING CONFERENCE**
Topic: California Water At The Crossroads
Sponsor: ACWA
Location: Monterey
(916) 441-4545

MAY SAT • SUN 9 10

**SF BAY REGIONAL WETLANDS CONFERENCE**
Topic: Creating the Wetlands Activist Agenda. Speakers include Assembly members Carole Migden and Ted Lempert, and pollster Celinda Lake.
Sponsor: Campaign to Save California Wetlands
Location: UC Berkeley
(415) 585-5304

MAY THURS 28

**ADAPTIVE MANAGEMENT, ECOSYSTEM RESTORATION AND THE LAW**
Topic: One-day seminar examines the legal underpinnings for ecosystem plans. Case studies examine specific instances of adaptive management and restoration within the context of ecosystem plans.
Sponsor: UC Extension
Location: San Francisco
(510) 643-7143

## HANDS ON

MAY SAT 2

**WATERSHED FAIR**
Topic: Celebration of accomplishments in watershed education. Activities include workshops on aquatic insect sampling, water quality, monitoring, creek and wetlands art and using wetlands to teach literacy.
Sponsor: Aquatic Outreach Institute
Location: EBMUD Watershed Headquarters, Orinda
9:00 AM—1:00 PM(510) 231-5783

MAY SAT 2

**LOS VAQUEROS RESERVOIR DEDICATION**
Festivities include environmental exhibits, hiking, music and activities for children.
Sponsor: Contra Costa Water District
Location: Los Vaqueros Reservoir near Brentwood
11:00 AM-5:00 PM
(925) 625-6504

MAY SUN 10

**43RD ANNUAL MOTHER'S DAY BARBECUE AND SILENT AUCTION**
Topic: Benefit party for Marin Audubon Society and Audubon Canyon Ranch.
Sponsor: Marin Audubon Society
Location: Volunteer Canyon, Bolinas Lagoon
(415) 453-4715

MAY WEDS THRU FRI 13 THRU 15

**WATER TOUR OF CENTRAL CALIF-SAN JOAQUIN VALLEY**
Topic: Discussions of surface and groundwater use are enhanced with visits to Kesterson Wildlife Refuge, Mendota Pool, San Luis Reservoir, Westlands Water District, Kern Water Bank, Friant Dam, the San Joaquin River Parkway, local farms and agricultural processing plants.
Sponsor: Water Education Foundation
(916) 444-6240

MAY SAT 9

**PRBO Open House**
Topic: Open house and annual meeting celebrating international migratory bird day, including mist-nesting demonstrations, a Bolinas lagoon walk, lunch and a talk on "Aliens, Marine Reserves and Fisheries" by guest speaker Warner Chabot of the Center for Marine Conservation.
Sponsor: Point Reyes Bird Observatory
Location: Bolinas (415) 868-1221

# EL NIÑO CONTINUED

(200 versus 70-80 milligrams per cubic meter), says Cloern.

Food out in the ocean has been scarcer, however, say others monitoring El Niño impacts. For example, some Pacific herring returning from the ocean to the Bay to spawn have been feeding instead, an unusual behavior according to Cal Fish & Game's Diana Watters. Watters says spawning biomass is down to 20,000 out of an expected 60,000 tons this year, and many of the already-tiny herring are not only underweight for their length, but are also carrying eggs with more than a normal share of abnormalities. "It's going to be a poor year for the fishery," says Watters.

Those nesting and burrowing on the wet edges of the Bay may not be faring so well either. The water level under El Niño has been a consistent 4-6 inches higher than recent averages, according to the Survey's Richard Smith. Add to this the 1-2 feet of extra water accumulating on a short-term basis with each storm and the result is flooding further up into the fringes of the Bay.

Endangered salt marsh harvest mice in these wetlands may have suffered from the El Niño flooding, particularly in backfilled marshes with steep sides and little escape cover, according to San Jose State mouse expert Howard Shellhammer. Where such species could historically flee up gentle slopes to wild hinterlands, such escapes from high water no longer exist on today's built up shores. Mice might now end up fleeing to levee tops where the "chances of them getting picked off by hawks goes up," says Shellhammer.

News of endangered California clapper rails is equally sketchy. U. S. Fish & Wildlife has had anecdotal reports of flooding in breeding territories during the season when rails begin to pair up. "It might have postponed breeding," says the Service's Jim Browning, "but the real effect is basically unknown."

While biologists may be celebrating the big blooms of phytoplankton, Jan Thompson also sees cause for hope in the citizen concern. "They're paying close attention to their Bay," she says. "Now it's up to us to better educate them about what's really going on."

Contact: U.S. Geological Survey (650)853-8300 or Howard Shellhammer (408)924-4897 or Diana Watters (650)688-6357. For summaries of recent USGS cruises *http://fbay.wr.usgs.gov/access/wqdata/index.html*

ARO

## OFF-STREAM STORAGE, CONTINUED

Dam and the Montgomery Reservoir, between the Merced and Tuolumne rivers.

Daniel points out that water stored off-stream might be managed differently than in-stream water. For example, Daniel notes that stored water retains heat, which is good for some users, such as farm crops, but not for Delta fish. "The last thing I want is for us to discharge warm water into the Delta," says Daniel. "But we could serve stored water directly to farmers to substitute for cold water coming out of the river." Stored water might also facilitate efforts to restore flows on waterways such as Stony Creek and Thomes Creek. "We could build a ditch to serve the people who have water rights on those creeks with stored water instead," suggests Daniel. The release of stored water can also generate electricity, although the energy gained does not offset the amount used to pump the water to the reservoir in the first place.

Several off-stream facilities are already in the works, like Contra Costa Water District's Los Vaqueros Reservoir, which will be dedicated this May (see calendar), and the 800,000 acre-foot Eastside Reservoir under construction near Los Angeles. Indeed CALFED has been looking into an expansion of Los Vaqueros, which was constructed to provide better, not more, water to Contra Costa Water's customers. "Our water allocation is the same as it was before—195,000 acre-feet—but we will be able to take it from a different part of the Delta," says the District's Ed Novi. The new intake at Old River, which is equipped with state-of-the-art fish screens, avoids the salinity problems that plagued the old intake at Rock Slough during dry periods. The flexibility provided by the extra storage also helps to protect fish. "During the spring spawning period we will shut down all pumping and serve our customers using stored water," says Novi.

Daniel cautions that since off-stream storage requires flooding habitat, it is by no means environmentally benign. There are also big operational questions, says the Bay Institute's Peter Vorster. "How high do river and Delta flows need to be before we can safely start diverting and storing?" he asks.

And then there's the cost. Daniel estimates that new water supplies, including stored water, will cost $300-$400 per acre-foot, and others believe the costs could be much higher. "We should look at it only after more cost-efficient alternatives, such as conservation, water transfers, acquisition and conjunctive use have been exhausted," says Vorster.

Governor Wilson's proposed $1.3 billion water bond includes funding for off-stream storage feasibility studies. Environmentalists oppose the funding on the grounds that it predetermines CALFED's decision on storage. Furthermore, says Vorster, agriculture would be one of the big beneficiaries of new storage, and "we don't think that public money should be used to subsidize agriculture's environmental obligations." Although he does not dismiss off-stream storage as an option, Vorster says "the big questions are where in the game do you introduce it and who pays?" Contact: Dick Daniel (916) 657-2666 or Peter Vorster (415) 721-7680 CH

YOUR INDEPENDENT SOURCE FOR BAY-DELTA NEWS & VIEWS

ESTUARY

APRIL 1998 VOLUME 7, NO. 2

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