

RIVERS TO STILL RUN THROUGH IT

When the Estuary Partnership was created in the early 1990s, the original Comprehensive Conservation and Management Plan recognized that “freshwater inflow is a major determinant of environmental conditions in the Estuary,” and recommended that the region develop and implement aggressive water management measures to increase freshwater availability to the Estuary. The plan called for additional flow into the system by using conserved and reclaimed water to reduce existing diversions and reduce demand for new diversions.

These goals have not changed. Over the intervening years, the state and the region have made some progress toward overall water conservation and flow restoration. State legislation now calls for a 20% reduction in urban per capita water use by 2020. After many years of negotiations and efforts, water is again flowing down the once-dewatered stretch of the San Joaquin River where salmon are to be reintroduced in 2013. Still to come, however, are the decisions and actions needed to allow enough water to flow into the Delta and Bay to satisfy the basic needs of the fish and wildlife that depend on those flows.

Now the State Water Resources Control Board and the California Department of Fish and Game have developed the tools to begin the conversation about what is needed for biological flows into the Estuary (see Brave New Flows). All of us—upstream diverters, those who divert directly from the Delta, and out-of-Delta exporters, have a role to play in restoring better ecological flows for the Delta and the Bay. Let us hope that reasonable people can now begin the long and hard work to needed to meet these new criteria. The health of our Estuary depends on it.

—Judy Kelly



ESTUARY NEWS

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BRAVE NEW FLOWS

When the State Water Resources Control Board announced this summer that the Delta ecosystem needed 75% of unimpaired flows to be viable, people sat up and took notice. “The legislature asked the Water Board to do something they’d never done before,” says Tina Swanson of the Bay Institute, referring to the Delta Reform Act of 2009. “As a result, the Board finally quantitatively described what the ecosystem needs, instead of setting up a situation where we figure out what people need, and then whatever is left over is what the environment gets. It’s really flipped the paradigm.”

Clearly what’s left of the ecosystem—the fish, the food, the native plants, and habitats—is not viable under current conditions. The Delta is so impaired by dams, water diversions, invasive species, and pollution that endangered salmon and Delta smelt populations are in collapse. Many Delta channels have been straightened or lined with levees, leaving the place more a creature of human ingenuity than natural hydrodynamics and river processes. And yet it is natural hydrodynamics that provide the frame of reference for the State Board’s new Delta flow criteria.

Previously, no more than about 50% of natural “unimpaired” flows made it through the dams, past all the Delta’s little intakes and big pumps, and out into the Bay in most years. In dry years, the trickle down rarely topped 20%. The new flow criteria suggest that if we are to save an ecosystem on its last fins, 75% of Sacramento River inflow and Delta outflow, and 65% of San Joaquin inflow need to be left in the system. “The Board chose 75% as the most protective; they

rolled everything up into one as opposed to doing it species by species,” says Carl Wilcox of Cal Fish & Game. “When you get to 75% it meets all needs, hypothetically.”

Scientists have resisted setting such numbers for decades—arguing that the ecosystem was just too complex. But the Board pressed them, inviting various panels of experts to tell them what the fish need, listening to three days of testimony, and synthesizing all available data on the relationship between flow



Levee, Andrus Island. © Rich Turner www.turnerphoto.com.

and species health and viability. The outcome was refreshingly clear, according to the Board’s Les Grober. “Everyone agreed we are not going to fix the Delta with flow alone, but also that we’re not going to fix it without some flow. All of science suggests that the Delta is not now, in its current condition, a hospitable place for sensitive species, and given this less than hospitable condition,

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RIPARIAN RISK REDUX

The US Army Corps of Engineers surprised resource agencies and flood control districts earlier this year with a complex process for applying for local variances to a national policy that would eliminate most vegetation on levees. If implemented, the policy would destroy riparian habitat vital to endangered species and put local districts in a bind. Critics also say the Corps' policy doesn't allow for differing regional and local conditions and preempts ongoing research efforts to determine whether levee vegetation is harmful or beneficial. Levee operators were initially given until September 30 to apply for a variance.

"I'm finding myself in a position where the Corps is telling us they'll take us out of the flood control funding program and the Regional Water Board won't give us the permits to take the vegetation out," says Mitch Avalon of the Contra Costa County Flood Control and Water Conservation District.

Avalon's district is responsible for levees on Wildcat and San Pablo creeks in North Richmond. The vegetation—including trees—on the Wildcat levee was planted, with Corps approval, as part of a community-designed flood control project in 1980. Now the Corps wants the trees taken out. "We have a maintenance manual that covers the trees, and we look at that manual as our agreement with the Corps," Avalon explains. "The existing agreement is an exemption. We don't need to apply for a variance." His district estimates the cost of preparing a variance request for Wildcat Creek alone as \$250,000. The tab for removing the levee vegetation and mitigating for its loss would be an additional \$1 million.

The Corps has given the Wildcat levee an unsatisfactory rating for three years and has pressed the flood control district hard in recent meetings. Early in September, as the result of what Avalon calls "an unfortunate miscommunication," a district crew cut down a row of buckeyes, live oaks, and other trees back of the creek. "There will be no more cutting of any vegetation out there," he promises.

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BRAVE NEW FLOWS

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it needs more water to protect the fishery resources than it currently gets."

The scientists also hammered home the importance of providing some of the natural variability in flows and seasons native species evolved with. The resulting flow criteria not only embrace this variability, but also emphasize connectedness between upstream, Delta, and downstream habitats, and stress the need for adaptive management. At press time, the Board's sister state agency, Cal Fish & Game, was releasing its own more bio- and species-centric criteria on the heels of the Water Board's hydro-criteria. The two efforts are complementary, says Wilcox, but as yet neither has any real teeth.

Just how far the new flow criteria will impact the amount of water now allocated to other uses—cities, farms, industry—will be negotiated in the next couple of years. The Board hopes the new flow criteria will offer a solid frame of reference for their coming update of the state's water quality control plan for the Delta, and for parallel efforts to finalize a Delta conservation plan (the "BDCP") and inform the new Delta Stewardship Council. All of these public processes must adhere to the Delta Reform Act's co-equal goals of a sustainable, viable ecosystem and a reliable long-term water supply. According to Swanson, "reliable" will soon become an important word to define: "Very few of our water users have gone through the same process we just did for the fish, and asked themselves how much they really need, as opposed to how much they want or are contracted for." According to Laura King Moon of the State Water Contractors, "If the draft recommendations were adopted, it would empty our reservoirs of cool waters required for salmon migration and cripple our state's water supply."

Nonetheless, as the Water Board's brave new flow criteria and Fish and Game's biological objectives make their way through the BDCP and water quality planning process, ecosystem restoration promises to be more directly tied to permits for water diversion and management. Clearly, spending lots of money on ecosystem restoration upstream has not taken the pressure off water deliveries for the environment, as everyone had hoped. Nor has it silenced calls to relocate

the point of diversion from the South to the North Delta, via a new pipeline or conveyance facility. "Like it or not, using the Delta as a conveyance system basically turns it upside down and runs it backwards, entrains fish production, redirects species into areas where they shouldn't be, and creates conditions native species did not evolve with," says Wilcox.

Since all the dead bodies turn up at the export pumps, everyone has looked to the state and federal water projects to shoulder flows for fish in the past, but they may not be so lonely in the future. "Just doing the math, if you have 75% of unimpaired flow at Vernalis, you're looking at a big water hit for upstream users in addition to whatever limitations the Water Board may put on Delta diverters," says one of those users, the S.F. Public Utilities Commission's Steve Ritchie, formerly of the SF Bay Regional Water Board and CALFED. "It would be a big deal if this number made its way into law or regulation. But as criteria, it still has to go through the state's standard setting process. Right now it's just one number that's pretty far out there."

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Ed.'s note: Ariel Rubissow Okamoto is the author, with Kathleen Wong, of a forthcoming environmental history of San Francisco Bay to be published by UC Press in Spring 2011.

SWRCB report: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_Delta/Deltaflow/final_rpt.shtml

DFG reports: http://www.dfg.ca.gov/water/water_rights_docs.html



Great egret at Bullfrog Landing in the Delta. © Rich Turner www.turnerphoto.com

DEADLY DISINFECTANT

If there were ever a poster child for urban stream restoration, Oakland's Sausal Creek is surely it. One of the longest-running such groups in the Bay Area, the Friends of Sausal Creek's accomplishments are prodigious. Partnering with the city, the group recently removed three dams that blocked the creek's steelhead from moving upstream, and restored about 700 feet of channel, planting 1,500 feet of creek bank with some 50,000 native plants they grew in their own nursery. Over the past 14 years, they

have stabilized landslides, teamed up with the Boy Scouts to remove invasives, installed a large native plant garden, produced a watershed plan and trail maps for the creek and

its tribs, built and maintained trails, acquired land adjacent to the creek to preserve as open space, and spent thousands of hours on community outreach and monitoring birds, water quality, fish, rare plants, and even oysters at the creek's mouth.

More recently, the city received a grant to liberate 180 feet of stream from a culvert, part of a project that will restore another 745 feet of stream. Some might say that to see this thriving riparian corridor—and fish—in the midst of such an urban area is nothing short of a miracle. The California Land Stewardship's Laurel Marcus, who recently completed a watershed plan for Sausal Creek, says "Sausal is unique amongst urban creeks and has significantly better aquatic conditions as demonstrated by aquatic insect monitoring." This, says, Marcus, is in part because one of its tributaries flows almost entirely through park land. But is also clearly the result of the city's and the Friends' blood, sweat, and—especially recently—tears.

One of the main motivators for both the city and the Friends is the steelhead, aka "rainbow trout," that live in the creek. No one knows for sure whether the Sausal Creek fish

can make it to the Estuary and ocean and back upstream again; numerous culverts, especially in the creek's lower reaches, may act as barriers. Yet steelhead are surprising, amazing fish, says the SF Bay Regional Water Board's Leslie Ferguson, and sometimes make their way against all odds, a thought that is echoed by the US EPA's Rob Leidy, who lives in the watershed and works with the Friends. Leidy says it is possible that fish could make their way up through the culverts under the right conditions. What is known for certain is that lots of fish are thriving in the creek, especially

in its several deep pools and undercut banks, where they can hang out and feed when flows get too low. One of the Friends' board members, Sean Welch, who walks the creek weekly to conduct

fish surveys, says he noticed shallow gravel beds in the creek with "tons of fry" after this year's wet spring. Others have seen large fish in the creek—close to a foot long—although no one has witnessed them spawning.

On August 5, as the city's Kristin Hathaway was walking the stream with consultants discussing plans for the upcoming restoration project, she discovered several dead trout in one of the pools. Hathaway then walked upstream and found East Bay MUD conducting maintenance of its drinking water pipes in the street a couple hundred feet above the pool. A few hours later, the city went back out to the site with the SF Bay Regional Water Board and found dozens more dead fish. While the cause of the fish kill is still under investigation, there have been numerous problems over the past decade with fish being killed when chloramines—added to water utility pipes to disinfect drinking water—have been accidentally discharged into local creeks.

East Bay MUD's John Schroeter says his agency is still conducting an investigation of the incident but that East Bay MUD crews had



Photo courtesy of City of Oakland.

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The broader issue may wind up in court. On August 2 the Center for Biological Diversity issued a 60-day notice of intention to sue the Corps, charging that the guidelines violate the federal Endangered Species Act. CBD says that since removing levee vegetation will affect endangered species, the Corps should have consulted with the US Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) before changing its regulations. A second charge is that removing the vegetation would result in an unlawful take of listed salmon and steelhead runs, valley elderberry longhorn beetle, giant garter snake, least Bell's vireo, and southwestern willow flycatcher. "Our riparian areas have been so impacted, in some areas the best habitat left is associated with levees," says CBD's Lisa Belenky. "Endangered species have come to depend on this altered environment as a replacement for their natural environment."

The Corps announced on September 8 that the final variance request policy and responses to public comments would be made public late in October. The deadline for variance requests has been extended to April 30, 2011. "This gives us some breathing room," Belenky says.

Meanwhile, the Corps' northwestern division commander has taken a collaborative approach to the levee issue. In a joint statement with Fish and Wildlife and NMFS regional administrators, Brigadier General John McMahon said the variance policy overlooked the potential benefits of levee vegetation and established an "overly cumbersome" process for approving variances. He and his resource agency counterparts recommended developing a regional framework for levee maintenance, allowing "emerging science and ongoing research" to inform regulations, and giving variance applicants more time for compliance.

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TINY TRESPASSERS

Not so long ago, nanotechnology was the stuff of science fiction. Now it's big business. By one estimate, over a thousand consumer products contain ultra-small particles of silver, gold, zinc, or other elements. Inevitably, nanoparticles are entering the environment; but they're barely on the regulatory radar and little is known about their effects on water quality and ecosystems.

Marie-Noëlle Croteau of the US Geological Survey is among the first to explore the bioavailability of nanoparticles. She and her colleagues worked with nanoparticulate zinc, a common ingredient in sunscreens and also present in biocides and industrial catalysts. "Zinc is highly abundant in the natural environment," she says. "If you add a lot of nanoparticles, it's hard to detect." So she had materials scientists at UC Davis tailor nanoparticles of an enriched stable isotope of zinc, readily distinguishable from background levels.

Her test organism was an algae-grazing freshwater snail (*Lymnaea stagnalis*), fed diatoms loaded with the engineered nanozinc. The snails were a surrogate for other creatures at the same trophic level, including such common Bay-Delta residents as worms, amphipods, and filter-feeding clams. "We wanted an organism that feeds a lot," Croteau says. The snails assimilated the particles as efficiently as regular zinc, retaining up to 86% of what they ingested. High concentrations of isotopic nanoparticulate zinc were associated with disruption of gut function and reduced feeding efficiency.

"We don't know if the zinc is released from nanoparticles in the snail's gut or if the entire nanoparticle enters the cell," she says.

A "Trojan Horse effect" has been hypothesized, in which the particle is a delivery vehicle for other bioavailable and potentially toxic metal ions: "It would act as a carrier that will bypass a lot of defensive barriers and enter the cell, a carrier that can fool the system. But we couldn't show that clearly," says Croteau.

"Further investigation is warranted of whether ingestion of metal nanoparticles

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put in a new pipe and then chlorinated it for 24 hours to protect public health. The water was then flushed from the pipe into a tanker truck, where it underwent dechlorination, says Schroeter. "Our crews did what they were supposed to do; they dechlorinated the superchlorinated water," he says. After the water sat in the tanker truck for two to three hours, it was released via a three-quarter inch hose into the storm drain system that flows into Sausal Creek. "We added almost half again as much dechlorinating agent as was needed," says Schroeter. "We have no reason to believe the water wasn't fully dechlorinated. According to an East Bay MUD report, the superchlorinated water was over 200 ppm chlorine (regular tap water is about 2 ppm).

Schroeter says his agency is still "looking at some issues" but admits that the water from the tank was not tested before it was released into the storm drain and creek. "If anything," says Schroeter, "We probably erred on the side of over-dechlorinating." Schroeter says there was another discharge of chlorinated water into the creek back in July when a truck knocked over a fire hydrant and flooded Dimond Park (where the same trout pool involved in the August 5 incident is located). "We're looking into that too. Maybe the fish were already stressed and we're seeing some residual effects." Why not discharge the dechlorinated water into the sanitary sewer treatment system, just to be on the safe side? "That is not normal practice; normal practice is to dechlorinate and release into the storm drain system." Nonetheless, as its maintenance operations continued on the site, East Bay MUD began trucking the water to its main wastewater treatment plant.

While the cause of the August 5 fish kill will probably be under investigation for a while, water line breaks and problems with chlorinated discharges and fish kills have been a problem for years around the Bay, with its aging pipes, and itchy faults shaking the ground. Most water purveyors in the Bay Area have switched to using chloramines (chlorine and ammonia) to disinfect drinking water because it lasts longer than chlorine. But chloramines are highly toxic to aquatic life, according to a May 19, 2009 SF Bay Regional Water Board letter to the California Water

Service Company, which twice discharged chlorinated water into Polhemus Creek, a tributary to San Mateo Creek in the South Bay, washing out a restoration project being done by the San Francisco PUC and killing at least 32 steelhead. After a spill in Berkeley's Strawberry Creek a few years ago that killed at least 30 Sacramento suckers, another native fish (see "Chlorinated Clues," ESTUARY, February 2006), the Water Board held several meetings with East Bay MUD, the public, and city officials with the goal of encouraging East Bay MUD field personnel to better respond to spills. Yet problems with chloramine discharges into waterways have continued. In the city of El Cerrito, resident George McRae says Pacific chorus frogs disappeared from Baxter Creek after multiple discharges of chloramine-containing water from East Bay MUD maintenance activities.

If chloramines are found to have caused this kill and, if tests show that the steelhead in Sausal Creek are anadromous (migrate to the Bay and ocean and back), NOAA Fisheries could prosecute for "take" of a threatened species. Steelhead that are able to make their way between creek and ocean are covered by the "threatened" listing while steelhead blocked by dams or culverts are not, and the only way to prove whether these fish are migratory or not is to sample their otoliths, or inner-ear bones. Those tests show whether the mother of the fish or the fish itself had ever been in the ocean (it is impossible to test the paternal side). Even if the fish are determined to not be migratory, NOAA's Dan Logan says that the Department of Fish and Game and the Water Board still have "longstanding clear authority to enforce state laws or regs that relate to either unpermitted killing of wildlife or introduction of chemicals to a waterway, either chemicals put in for preparing the water for human consumption or chemicals put in to dechlorinate."

While the bodies of the dead fish from Sausal Creek await testing at NOAA laboratories, the Friends' Kimra McAfee said she hopes something can be done to prevent any further, similar incidents. "Maybe something good can come out of something terrible. What's sad is that we try to educate every creek neighbor to do everything they possibly can for the creek, and this is our utility district—if they screw up, then poof, the fish are gone."

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BILL SEEKS MORE BOOM, NO BLOWOUTS

In the final days of the regular legislative session, a bill inspired by last year's Dubai Star oil spill and the disaster in the Gulf of Mexico cleared the Assembly. At press time, AB 234, sponsored by Assemblymember Jared Huffman (D-San Rafael), awaited Governor Schwarzenegger's signature or veto. AB 234's passage through the legislature was no slam dunk; strongly supported by environmental groups, the bill drew fire from shipping and maritime labor interests, as well as the California Department of Fish and Game whose Office of Spill Prevention and Response (OSPR) stood to benefit from the legislation.

AB 234 addressed spill prevention during fuel transfers, funding for OSPR, and the safety of offshore drilling operations. The bill would require prebooming during ship-to-ship transfers when determined by the transfer unit to be safe and effective. Salvage of sunken vessels and operations at onshore terminals would not be covered. Current law allows standby booming as an alternative to prebooming; in practice, there's no indication that operators ever preboom in San Francisco Bay. In addition, 234 would augment the revenues of the Oil Spill Prevention and Administrative Fund (OSPAP) by increasing the maximum assessed on barrels of oil landed at a marine terminal from five cents to six cents and authorizing OSPR to fine-tune the fee amount. An amendment after the Gulf blow-out mandated redundant emergency systems on California's offshore platforms.

"I think we've covered the three essential bases," says Huffman. "Vessel-to-vessel transfers are clearly an area of need. Pre-booming would have prevented the damage from the Dubai Star. We obviously have to shore up the fiscal integrity of OSPAP, which is on trajectory to go millions of dollars into deficit as quickly as a year from now. We should be doing much more training and inspection; without that we can't do it. Finally, the obvious need in light of the Gulf spill is making sure offshore platforms have redundancy systems in place to prevent the kind of blowout we had in the Gulf. You should never have a spill in one of these facilities that you can't shut off."

Advocates of the bill encountered an entrenched belief in the local maritime community that prebooming is unsafe in



A tanker gets refueled by a barge in the middle of the Bay. AB234 would require some configuration of boom to be used during such an activity. Photo by Lisa Owens Viani.

currents greater than 1.5 knots. According to the Coast Guard and OSPR, that would be the case at Anchorage 9, in the middle of San Francisco Bay, where the Dubai Star spill occurred. (Oceanographer Toby Garfield of San Francisco State University's Romberg Tiburon Center says currents at Anchorage 9 did not exceed 1.4 knots at the time of the spill.) The 1.5 knot threshold was in fact written into the California Land Commission's regulations governing fuel loading at terminals. "If I speak to people in the Bay Area they say we can't do that here," says Jackie Dragon of Pacific Environment. "Then I speak to people in Washington State, New York State, New Jersey, and Puerto Rico where they have currents exceeding 1.5 knots and are successfully booming. They say it's a necessary evil, it's become part of the routine, it's not that hard."

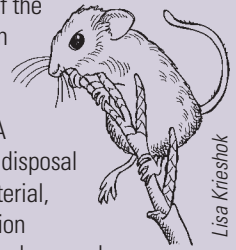
On a parallel track, OSPR has been holding workshops on booming practices with an eye toward revising existing regulations. That process was Fish and Game's rationale for opposing the bill. The agency's draft language includes the 1.5 knot threshold. OSPR's Steve Edinger says that could remain in the regulation even if 234 becomes law: "I haven't seen anything in 234 that dictates what we consider safe and effective." He adds: "Prebooming at a faster rate of speed is neither safe nor effective." What's the evidence for that? "I don't know of any empirical studies that were done," says Edinger. "I'd like to ask OHMSETT [the Oil and Hazardous Materials Simulated Environmental Test Tank in New Jersey] to do this for us. What we have is anecdotal. There's no study that actually says that using this kind of boom in this kind of current with this type of oil, this is what occurs."

"We're quite pleased that OSPR restarted the regulatory process and is looking to re-

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OF MICE AND BOATS

Martinez, home of the celebrated downtown beavers, may have a new rodent celebrity. Anchor QEA Engineers, surveying disposal sites for dredged material, discovered a population of mice in a pickleweed-covered portion of a pond near the Martinez marina. "We were walking on pickleweed and mice were literally running over our boots," Katie Chamberlain told the *Contra Costa Times*. Anchor's Joshua Burnam describes "maybe a dozen scattered throughout the pond. We didn't trap them for positive identification, but we assumed they were salt marsh harvest mice from the habitat."



If so, the presence of a federally and state endangered species could stymie ongoing plans to keep the shoaled-in marina accessible to boats. Biologist Howard Shellhammer, who has studied the salt marsh harvest mouse for years, says the reported behavior is unusual for this furtive species: "Salt marsh harvest mice are typically cover-dependent and not flushed out like that... I wonder if they were seeing western harvest mice, a similar-looking little mouse, or some mixture of various species. The only way to be sure is to trap the area."

Burnam says his company, contractors with the city of Martinez, has met with the US Army Corps of Engineers, the San Francisco Bay Regional Water Board, and the Bay Conservation and Development Commission about the mouse issue. "We need the ponds," he says. "Otherwise dredged material will end up in the Bay." One option being explored is to trap and relocate the mice to suitable habitat on East Bay Regional Park District land. But Ryan Olah of the US Fish and Wildlife Service says that would be considered a take under the federal Endangered Species Act, requiring mitigation.

An alternative to removing the mice, according to Burnam, would be to allow the dredged material to move through the pond without disturbing the pickleweed.

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AG BILL FALTERS

A small step toward improving the water quality of agricultural discharges hit a wall of opposition in this year's legislative session. AB 2595, introduced by Assemblymember Jared Huffman (D-San Rafael), was an attempt to increase participation in the state and regional water boards' agricultural water quality programs. Farm interests supported the bill after an initial round of amendments but changed their stance when clarifying language was added in August to reassure environmental groups, so 2595 never went up for a vote on the Senate floor.

Water-quality oversight of irrigated agriculture has a complex history in California. The federal Clean Water Act does not regulate agricultural use; the state's Porter-Cologne Act was intended to fill that void. Initially, growers who irrigated were given blanket waivers and were not required to monitor or report discharges. In 2000, Senate Bill 390 began a process of replacing the blanket waivers with conditional waivers, good for five years unless revoked. This involved growers obtaining individual waste discharge requirements, equivalent to permits. The Central Valley and Central Coast Regional Water Boards have been active enrolling growers in conditional waiver programs; other boards have not made it a priority.

AB 2595 would have leveled the playing field between regions by promoting waiver program enrollment statewide. It would have allowed county agricultural commissioners to withhold pesticide operator identification numbers if growers or other users failed to respond to regional water board requests for pesticide use information, obtain a waste discharge requirement, or enroll in a waiver program. The bill would not have changed agricultural waiver program requirements, although that's already underway in some regions.

A coalition of growers and farm organizations, including the California Farm Bureau, complained that the August amendments "broaden[ed] the regulatory scope of the bill," giving the State Water Board "the potential to eliminate local decision-making and priority setting."

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Conservation

SEEING SEABIRDS

Seabirds—who live much of their lives in the water, on rocky cliffs or in other hard-to-find places—often nest in remote spots unseen by the public. Yet, with more people hiking, climbing, kayaking, fishing, and otherwise "recreating," these reclusive birds are increasingly being flushed off of their nests, leaving their eggs and young to be picked off by predators. "Most people don't even think about or see seabirds," says PRBO Conservation Science's Melissa Pitkin, who began an outreach effort several years ago called Seabird Aware. "Our goal was to try to get the message out to different audiences about how vulnerable nesting seabirds are to disturbances."



Brandt's cormorant displaying. Photo by Peter LaTourrette.

Pitkin and her staff began working with fourth and fifth graders in San Francisco schools to create educational posters and with National Park Service biologists on Alcatraz Island to get more people to see—and learn about—seabirds like double-crested and Brandt's cormorants, pigeon guillemots, and Western and California gulls, and water birds like snowy egrets and black-crowned night herons, which also roost on the island. Although birds stopped using the island during the military years, since 1963 it has once again become a refuge—its name derives from the Spanish "alcatrazes" or seabirds, given to it by the early Spanish explorers who found it covered with seabirds and guano. Today, the island is covered with people too: some 1.5 million people visit it each year.

To balance the needs of birds and visitors, the Park Service closes off large

portions of the island during breeding season and has created a brochure and an educational exhibit in the old military bombproof barracks. "It's a priority for us to protect and manage this island to provide habitat for nesting seabirds," says the National Park Service's Lara Rachowicz. "At the height of the breeding season, we can have over 10,000 birds here."

Pitkin says the Park Service's docent program has been particularly effective in creating awareness about the birds and their plight. Between April and August, volunteer bird docents spoke to over 20,000 visitors, says Rachowicz. They also give "seabird walks" once or twice a week, with up to 80 visitors on each one. PRBO and the Park Service have also worked to keep aircraft from flying too low during breeding season, and boaters from coming too close to nesting areas. "Surprisingly, some of the quieter boats, kayaks or fishing boats, can creep up on colonies and startle them," says Rachowicz. The Park Service is practicing what it preaches. "There are only five months out of the year where we can go in and do maintenance and historical restoration projects—the island is closed to the staff as well as the public in these nesting areas."

The often-misunderstood gull—disliked by some for frequenting dumps and fast-food joints—is protected too. Says Rachowicz, "When people come here, they have the opportunity to see what incredible parents these birds make, how cute the chicks are, how well they care for their young."

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Pigeon guillemots at Alcatraz. Photo courtesy NPS volunteer Richard Ferris.



CONFERENCES, WORKSHOPS, EXHIBITS & TOURS

THROUGH NOVEMBER 15 ART BY RITA SKLAR

TOPIC: Vanishing birds of the Bay
LOCATION: Thos. Moser San Francisco Showroom, 3395 Sacramento Street, San Francisco
ritaartart@sbcglobal.net

OCTOBER 5 TUESDAY RMP ANNUAL MEETING

TOPIC: Water quality monitoring: linking watersheds and San Francisco Bay
LOCATION: Oakland Museum
SPONSOR: San Francisco Estuary Institute
www.sfei.org

OCTOBER 13-14 WEDNESDAY-THURSDAY SAN JOAQUIN RIVER RESTORATION TOUR

TOPIC: Dams, restoration sites, Merced National Wildlife Refuge
LOCATION: Tour begins and ends in Fresno
SPONSOR: Water Education Foundation
www.watereducation.org/toursdetail.asp?id=845&parentID=821

OCTOBER 21 THURSDAY SUBMERGED LANDS CONFERENCE WEBINAR

TOPIC: Submerged lands restoration and nurseries
LOCATION: On line – ongoing
www.submergedlandsconference.com
SPONSOR: Florida Department of Environmental Protection

NOVEMBER 3-4 WEDNESDAY-THURSDAY 28TH ANNUAL WATERFRONT CENTER CONFERENCE

TOPIC: Urban Waterfronts 2010: The City Resurgent
LOCATION: Baltimore Marriott Waterfront, Baltimore MD
SPONSOR: The Waterfront Center
www.waterfrontcenter.org/Conference/Conference10.htm

NOVEMBER 3-4 WEDNESDAY-THURSDAY WATER QUALITY & REGULATORY CONFERENCE

TOPIC: Emerging contaminants and emergency response
LOCATION: Doubletree Hotel and Convention Center, Ontario, CA
SPONSOR: Water Education Foundation
www.watereducation.org/conferences

NOVEMBER 13-17 SATURDAY-WEDNESDAY 5TH NATIONAL CONFERENCE AND EXPO ON COASTAL AND ESTUARINE HABITAT RESTORATION

TOPIC: Preparing for climate change: science, practice, and policy
LOCATION: Galveston Island Convention Center, Galveston Island, TX
SPONSOR: Restore America's Estuaries
www.estuaries.org/conference

NOVEMBER 14 SUNDAY STANISLAUS RIVER SALMON FESTIVAL

TOPIC: Celebrating salmon and the Stanislaus
LOCATION: Knights Ferry Recreation Area near Oakdale
SPONSOR: East Stanislaus RCD and other agencies
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HANDS ON

OCTOBER 30 SATURDAY HALLOWEEDING AT SAN FRANCISQUITO CREEK

LOCATION: Palo Alto Baylands
SPONSOR: Save the Bay
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NOVEMBER 6 SATURDAY PLANTING SEASON KICKOFF AT EDEN LANDING

LOCATION: Eden Landing Ecological Reserve, Hayward/Union City
SPONSOR: Save the Bay
www.savesfbay.org; (510)452-9261

AG BILL FALTERS

(CONTINUED FROM PAGE 6 SIDE)

"One group after another peeled off and went into opposed mode," says Huffman. "They teamed up with the county agricultural commissioners, who continue to believe that they should never be part of a solution. The agricultural commissioners have some explaining to do." That's when legislative support for 2595 began to erode.

"We may try to revisit the issue next session," Huffman adds. But he warns that success will require more active support from environmentalists: "Part of the challenge was getting the environmental community interested in it. They came on board late in the process, but this needed to be a priority."

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California's Next Million Acre-Feet: Saving Water, Energy, and Money by Heather Cooley, Juliet Christian-Smith, Peter H. Gleick, Michael J. Cohen, and Matthew Heberger. Pacific Institute, September 2010. www.pacinst.org/reports/next_million_acre_feet/index.htm

Slow It. Spread It. Sink It! A Homeowner's and Landowner's Guide to Beneficial Stormwater Management. Southern Sonoma County Resource Conservation District, August 2010. www.sscrdd.org/rainwater.php

A State of Change: Forgotten Landscapes of California by Laura Cunningham. Heyday Books, October 2010. www.heydaybooks.com/nature/a-state-of-change-forgotten-la.html

West Coast Governors' Polluted Runoff Action Coordination Team Final Work Plan. May 2010. http://westcoastcoceans.gov/Docs/Polluted_Runoff_Final_Work_Plan.pdf

NEW VIDEO PODCASTS!

Fish Friendly Farming

Fish Friendly Farming® is a certification program for agricultural properties that are managed to restore fish and wildlife habitat and improve water quality: an interview with Laurel Marcus, Executive Director of the California Land Stewardship Institute California Land Stewardship Institute.

Help from Harbors

Harbors lining San Francisco Bay are impacted by oil spills but harbor masters are often overlooked as resources and potential responders: Ted Warburton, Harbormaster at the Brisbane Marina, talks about his experience during the Cosco Busan oil spill.



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BILL SEEKS MORE BOOM, NO BLOWOUTS

(CONTINUED FROM PAGE 5)

quire pre-booming when safe and effective," says Dragon. "I want to give them credit for responding to concerns over the Dubai Star. But the current draft language with the 1.5 knot threshold is tantamount to saying we may not boom in San Francisco Bay at all. We will continue to work with OSPR and encourage them to write a regulation that's more effective than what we have now. We simply want the 'best achievable protection' we are due under state law passed 20 years ago."

Understanding the fiscal side of the bill, which would increase revenues to OSPAF, requires some background. OSPAF is one of two funds earmarked for oil spill contingencies. It covers OSPR's administration, salaries, training, and an imminent threat of a spill: a sunken vessel whose fuel has not yet leaked, or a pipeline break that lets oil into a storm drain system. Once the oil hits the water, operating expenses for the response come from the Oil Spill

Response Trust Fund, fed by fees from marine terminal and pipeline operators and refiners.

Eddinger says OSPAF money is used for boom grants to cities, counties, and harbor districts to help contain or exclude oil. OSPR has done field evaluations of a Norwegian product called Current Buster, which is claimed to be effective in currents up to 4 knots. "We found it did not work as advertised," he says. Most of the boom products, including the Norwegian products, says Eddinger, are "a little more specialized. We need something that's easily deployed and cost-effective."

As the deadline for gubernatorial action approached at press time, Assemblymember Huffman was cautiously optimistic: "We've got a legitimate chance for signature. We need to make the case to the Governor why California needs to stay on the cutting edge of oil spill prevention and response. The

Governor has pivoted a bit on some of these issues, including offshore drilling." And in the worst-case scenario? "If it's vetoed, I'm not going to let this issue go."

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TINY TRESPASSERS

(CONTINUED FROM PAGE 4 SIDE)

into food, in general, could introduce into consumers, and perhaps entire food webs, either potentially toxic metals or metal nanoparticles," Croteau and colleagues wrote in an article for *Nanotoxicology*. She says there have been a couple of trophic transfer studies with gold nanoparticles: "It's hard to follow the pathways. But we're slowly getting there."

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