

RED FLAGS OVER MONTEZUMA

Two environmental groups visited a Solano County courtroom this November to challenge the adequacy of an environmental impact report on Levine-Fricke's proposal to restore 1,800 acres of seasonal wetlands in Suisun Marsh to tidal marsh.

"Restoring wetlands is a noble and good idea, except in this case, the 'restoration' site is simply a depository for contaminated dredge spoils," says one of the plaintiffs, Lesley Emmington-Jones with the Friends of Suisun Marsh.

Friends of Suisun Marsh and Save the Bay fear that the Montezuma Wetlands Project's use of 17 million cubic yards of dredge spoils to raise subsided peat soils to tidal levels may introduce contaminants harmful to the marsh's wildlife, including several endangered species.

Levine-Fricke says the dredged material has been thoroughly vetted and will be buried deeply enough — three feet below the surface — that any contaminants will not leach into groundwater or rise to the surface. "We're just as concerned — maybe more so — about contaminants as anyone," says project manager Doug Lipton. Lipton says concentrations of contaminants in sediments used at the site will be similar to existing levels in Suisun and other North Bay marshes. He adds that most of what the Friends of Suisun Marsh call "seasonal wetlands" are really just degraded grazing lands, and that only about 20 acres have been designated as high quality habitat for the endangered salt marsh harvest mouse.

The Port of Oakland's Jim McGrath says the Port is always looking for better ways to dispose of the material it needs to dredge to keep its harbors and shipping lanes passable, including about 5% that is not suitable for disposal in the ocean or Bay, where most of the material now goes. "The truly dirty stuff goes to landfills while modestly dirty material is dried and used in construction or beneath parking lots and golf courses," says McGrath. "All of this Montezuma material is much cleaner than that. If we're going to do something other than put this stuff in landfills, then we've got to find creative solutions, and they're going to have to be cost-effective. Jim Levine's solution — to recycle it, re-use it at levels at which the contaminants become nutrients or innocuous — is better." McGrath says the opposition to the project is "truly a tempest in a teapot," and that the S.F. Regional Water Quality Board's standards for using "non-cover" (the more contaminated) materials in restoration projects are very protective.

Not protective enough for the environmentalists, perhaps. In their lawsuit, the groups say they want to see the EIR address the potential impacts of 65 contaminants in the dredged sediment, some of which is unsuitable for Bay disposal. They also want to see the EIR address the cumulative effects of

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Experts Wallow in Mud Math

"Grey, slimy stuff," up to 65 million cubic yards of it, is how one scientist described the young Bay mud that might need to be scooped up off the bottom to make way for a proposed new runway for the San Francisco airport. Add another 95 million cubic yards of less slimy stuff, needed to provide firmer footing and a higher elevation for a possible 1,200 acre new runway area, and you have some mind-numbing mud math that has scientists worried about impacts on sediment dynamics in the Bay. If this solid-liquid balance gets out of whack, shorelines may retreat, newly restored wetlands may languish underwater, and steelhead may suffer and stray.

So just how much mud-moving is too much? "We asked ourselves are these numbers big or small?" says the U.S. Geological Survey's David Schoellhamer of some of the back-of-the-envelope calculations made by he and other top scientists gathered at an October 20 brainstorming session. The session, organized by the National Oceanic and Atmospheric Administration and co-sponsored by local regulators faced with a potential permit for the biggest Bay fill in 30 years, aimed to list research questions for a forthcoming environmental impact analysis of various options for new runways to be built on fill, pilings or floats.

In the case of the fill option, Schoellhamer concluded the numbers are "very big" when compared to the 4-6 mcy now dredged from the Bay every year to keep ships and boats from running aground. And the grey matter swirling around this option doesn't stop there. Based on the sediment deposition history of San Francisco's current runways, Bay tides and currents could import another 30 mcy of mud into the low-wave energy areas between and

behind the new structures, says Schoellhamer. Scribbling on a different envelope, hydrologist Philip Williams put the figure at closer to 50 mcy.

Shifting so much mud and sand around, not to mention mitigating for the runway fill with restoration of vast acreages of below-sea-level wetlands, could create some sizable new sediment sinks in the Bay. "There's a dynamic equilibrium in the Bay between sediment supply and erosion and deposition," says Schoellhamer. "Any new sinks will tend to fill up with sediments that have to come from somewhere."

Sediment isn't very sexy, but it could end up being a pretty ugly issue for San Francisco airport.

According to other USGS scientists, the Bay only gets about 8-10 mcy of new sediment from its rivers and watershed every year, and this number has decreased due to more dams and less mining upstream. Partly as a result of such declines, San Pablo Bay has become erosional rather than depositional in the latter half of this century. So what does this mean for the airport project?

"You're basically adding a lot of sediment sinks in the context of decreasing sediment supply and increasing Bay floor erosion. The question becomes, is there enough material for all this?" says

Schoellhamer. "The answer is you get a higher likelihood of erosion."

Out comes that envelope again. Say the airport creates a 10 mcy sediment sink (airport related sinks could add up to 14 times that amount if fill material is "borrowed" from the Bay itself), and assume the material is going to come from erosion of the Bay floor. The area most likely to erode is the part less than two meters deep, about 250 square miles. Take 10 mcy off the top of this area and you get a half inch drop in Bay bottom level, estimates Schoellhamer. With a little more math (based on a natural 1:1000 slope that evolves wherever land and water meet noted by Phil

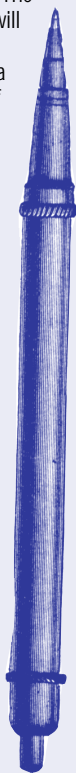
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BULLETIN BOARD

STEELHEAD PROTECTIONS — The National Marine Fisheries Service will propose new rules to protect steelhead by December 15 under a legal settlement with a coalition of environmentalists. Although the species has been listed as threatened since March 1998, the agency has not yet issued regulations to protect it. Meanwhile, the agency is seeking experts to serve on a new science review panel that will guide recovery planning for all 26 protected populations of salmon and steelhead in Washington, Oregon, California and Idaho, as well as two technical review teams. The Federal Register notice describing the solicitation is on line at www.nwr.noaa.gov.

WATER BOND — The Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act of 1999 — the largest general obligation water bond ever — will appear on the March 2000 ballot. If approved by voters, the measure will provide \$1.97 for a variety of flood control, watershed protection, pollution control and water conservation programs, as well as water recycling, groundwater storage and Bay-Delta improvements.

PETALUMA PESTICIDES — Two insecticides turned up in the upper Petaluma River watershed at eight spots monitored by Bruce Abelli-Amen of Baseline Environmental Consulting in 1998, with the help of a \$10,000 Rose Foundation grant. In summer, he found hardly a trace of the diazinon and chlorpyrifos, but during the winter almost half of the samples contained levels potentially toxic to microorganisms in the water. In one sampling the diazinon concentration reached 1,368 parts per trillion (ppt), almost ten times the level considered toxic. Another found nearly 80 ppt of chlorpyrifos in one tributary — the substance is considered toxic at 30 ppt or above. Abelli-Amen found the highest levels of the substances in creeks that flow through residential and commercial neighborhoods and reasons that if people were better educated about their proper use (and less toxic alternatives) the River's overall health could be improved. Contact: (707) 762-5233.



PAPERWORK

SAGE STRATEGY FOR BAY WETLANDS

The word "implementation" may be long enough to put most people to sleep, but it's the most sensational word on the title page of the latest paper blueprint for Estuary health. This "Implementation Strategy" for the 23-member, public-private San Francisco Bay Joint Venture, approved in October (see Now in Print), proposes to protect, restore or enhance 236,000 acres of baylands and creeks over the next 20 years, and suggests specific partnerships and tools necessary to do this. Venture partners say the Strategy is both the necessary outgrowth of decades of contentious regional consensus-building on Bay wetlands, and the pre-requisite for an official seal of approval that can earn the Venture bigger bucks from Congress.

"A lot of big plans don't go anywhere, but this document shows that everyone here has bought into restoration as a public goal, and allows us to say 'Show me the money,'" says John Zentner of Zentner and Zentner ecological consultants who is also a partner in the Joint Venture. The Venture is a five-year-old partnership of 23 public agencies and stakeholders formed to coordinate wetland acquisition and restoration on a regional basis, and one of 14 such ventures across the continent. The ventures were formed under the international North American Waterfowl Management Plan of 1986, which requires them to write an implementation strategy. With the Strategy in hand, the Joint Venture is now officially eligible to pursue the \$1.8 billion it needs to make good on that key

word "implementation." This may seem pricey but, as Venture Director John Steere points out, the sum is about what it recently cost to rebuild two East Bay freeway exchanges.

"We're at a pivot point," says Venture partner Arthur Feinstein of the Audubon Society. "We can either go toward one of the most spectacular restoration scenarios in the world, or we can see the Bay disappear as a habitat for living things, and become a habitat for more concrete and glass."

If anything is a legitimate step into that brave but more biologically-beautiful new world, it is the Strategy. Looking back over the last twenty years of wetland protection efforts, every step ahead met with opposition except this last, according to Zentner. The first step involved creation of regional consensus on the S.F. Estuary Project's 1993 Comprehensive Conservation and Management Plan (CCMP) for the Bay and Delta, where even at the end of five years of discussion among over 100 stakeholders, a minority remained opposed to the plan's wetland to-do list. Next steps coming out of the CCMP effort were the push to provide a sound scientific basis for figuring out what kind of wetlands, and where, were needed to sustain estuarine health (Habitat Goals, 1999) and to create a mechanism for buying and securing threatened wetlands (Joint Venture, 1995), both of which also had their share of rocky moments. But by the time the Venture began funneling the results of all these efforts into an implementation strategy, "We'd all sat around long enough together that nobody had to call the cops to break up a fight anymore," says Zentner.

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SAN FRANCISCO BAY JOINT VENTURE WETLANDS GOALS 2000-2020 (IN ACRES)

| Subregions by Goals Categories | Bay Habitats | Seasonal Wetlands | Creeks and Lakes | Total by Subregion |
|--------------------------------------|----------------|-------------------|------------------|--------------------|
| Suisun Subregion | | | | |
| Acquire | 3,000 | 11,000 | 250 | 15,000 |
| Restore | 2,000 | 1,000 | 1,000 | 4,000 |
| Enhance | 2,000 | 6,000 | 4,000 | 12,000 |
| North Bay Subregion | | | | |
| Acquire | 23,000 | 18,000 | 250 | 42,000 |
| Restore | 15,000 | 4,000 | 1,000 | 20,000 |
| Enhance | 13,000 | 12,000 | 4,000 | 29,000 |
| Central Bay Subregion | | | | |
| Acquire | 9,000 | 1,000 | 250 | 11,000 |
| Restore | 4,000 | 0 | 1,000 | 5,000 |
| Enhance | 4,000 | 1,000 | 3,000 | 8,000 |
| South Bay Subregion | | | | |
| Acquire | 28,000 | 7,000 | 500 | 38,000 |
| Restore | 16,000 | 1,000 | 2,000 | 19,000 |
| Enhance | 42,000 | 4,000 | 11,000 | 57,000 |
| San Francisco/San Mateo Coast | | | | |
| Acquire | TBD | TBD | TBD | TBD |
| Restore | TBD | TBD | 3,000 | 3,000 |
| Enhance | TBD | TBD | 5,000 | 5,000 |
| Total | 161,000 | 66,000 | 33,000 | 260,000 |

Derived from SFEI Regional Habitat Goals, July 1999

RESTORATION

DAM DEMO FREES FISH

Dams are coming down right and left on Butte and Battle Creek, two Sacramento tributaries at the heart of the state's crusade to bring back the salmon.

Most of the recent headlines herald the planned demolition of five P.G. & E. dams on Battle's two forks and tributaries to begin in early 2000. The demo project, along with the retrofit of three other dams with fish screens, is the product of a much-touted agreement between conservation groups, CalFed, P.G. & E. and private landowners. The result will not only be restoration of 42 miles of salmon spawning grounds, but more importantly more water for fish, according to Cal Fish & Game's Harry Rectenwald.

"Everybody thinks it's a dam story," he says, "But flows are really the story. It's when you take the minimum required flows of 3 cubic feet per second and increase them to 40-50 cfs that you get restoration." Pre-dam base flows were around 120 cfs.

Tinkering with Butte Creek's hydro-hardware isn't going to produce a statewide blackout either. "These dams are little dinky things compared to hydro systems on nearby rivers or the future power gains we'll see with some of the proposed CalFed reservoir expansion

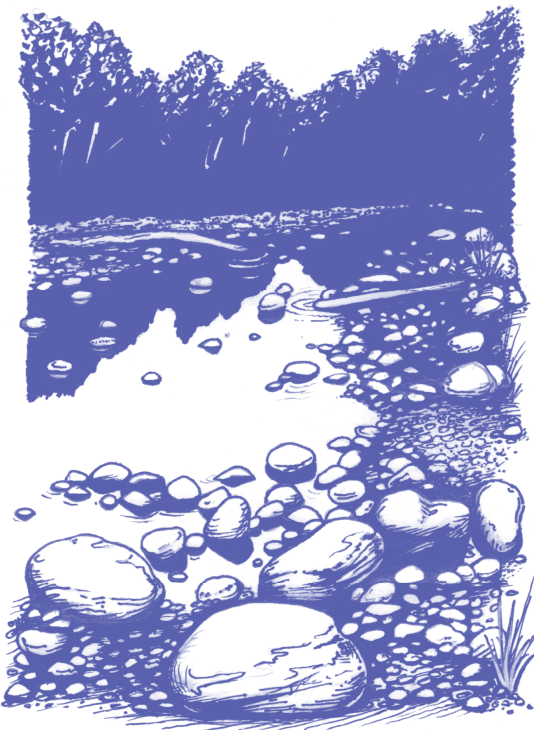
projects," says Rectenwald. Removal of Battle Creek's dams represents a loss of enough electricity to power about 40,000 homes. Keeping them intact, but adding screens and ladders for the fish, would have been prohibitively costly.

Costs to hatchery fish vying for space in the soon-to-be freed stretches of creek are less clear. Biologists and managers are concerned that fish from the federal hatchery, which sits just downstream of the decommissioned dams, could breed with native wild fish. While the genetic integrity of hatchery fish is always a concern, the real problem may be more one of pure biomass in the lower creek: "They load the stream with fall run hatchery product, so some years you've got up to 90,000 fish where 5,000 could ordinarily spawn," says Rectenwald. "Remember that this hatchery was designed to compensate for the loss of 100 miles of a river — and it's on a stream."

Managers currently install a barrier in the creek to keep the hatchery fish from swimming upstream and prevent interbreeding. The dam removal/stream restoration project really targets winter and spring-run salmon, and steelhead, which move through the stream at different times than the fall run. "It can become a traffic problem, though, when 12 million hatchery smolts are released on top of the wild juvenile salmon that are rearing in the stream."

No hatchery conflicts cloud the rosy restoration picture on Butte Creek to south, however. Five dams have already come down in the middle reaches of this creek, most owned by rice farmers. Now stakeholders in the lower watershed are completing studies on removing 8-10 fairly large dams and looking for funding to build 40-50 new fish screens.

Last year, biologists counted a record 20,000 spring-run returning to Butte Creek to spawn (the historical high was 9,000). While Cal Fish & Game's Paul Ward is hesitant to directly attribute the good numbers to dam deconstruction, especially since last year was a wet year, he says the creek's freer flows can only be helping. (During some years less than 50 fish turned up.) Butte's been getting better flows for fish on and off since the early 1990s as part of dam relicensing agreements, and the recent swell in salmon may be in part attributable to those increases. Dam or no, wild or hatchery, Californians can always count on the real issue in any riverine restoration debate being water. Contact: Harry Rectenwald (530) 225-2368 or Paul Ward (530)895-5015 **LOV**



SPECIES SPOT



FLYING COMEBACK

High above the Bay, beneath its many bridges, an enigmatic, dark-eyed flier is quietly making a comeback. Peregrine falcons, which dive at speeds of up to 200 mph to catch ducks, shorebirds and big city pigeons, have just been removed from the federal endangered species list.

Their removal can largely be attributed to the ban on DDT that began in 1972, as well as extensive captive breeding efforts. DDE, a breakdown product of DDT which the peregrines ingested from contaminated prey, was thinning their eggshells, causing reproductive failure. In 1970, biologists checked over 100 nest sites throughout California and found just two pairs breeding successfully, says Doug Bell, peregrine expert with the San Francisco Bay Bird Observatory. But by the early 1990s, the Bay Bridge boasted two resident breeding pairs, and peregrines were wintering on most of the other bridges and even at the Bay Bridge toll plaza's radio towers.

This past spring, says Bell, peregrines attempted to nest on the Richmond, Antioch, and Bay Bridges, a sea cliff near Muir Beach, and even an office complex at Redwood Shores. "It's likely that five to seven pairs of peregrines now call the Estuary their home," says Bell.

Because young peregrines are often hit by cars and even drown when they first try to leave their urban lofts, says Bell, the U.C. Santa Cruz Predatory Bird Research Group has been removing the young from the bridges in the spring and releasing them elsewhere around the state.

Could there ever be too much of a good thing when it comes to something as magnificent as a peregrine? They definitely have an impact on concentrations of shorebirds as well as nesting terns, admits Bell. "But the key is to provide enough habitat for the prey — in this case, to maintain a diverse estuarine system that allows the intricate balance between predator and prey to play out. Peregrines are not new to the Bay Area — they undoubtedly witnessed the coming of the first Spanish explorers. Now, thanks to an enlightened public, the peregrine has a second chance to reestablish its rightful place in the Bay Area's ecosystem." And for anyone still worried about their prey, Bell adds, "They eat far more pigeons and doves than ducks." Contact: Doug Bell (408)946-6548 [LOV](#)

FARMING

A HARD LOOK AT LOW VALUE CROPS

With California's water debate increasingly cast in terms of people and fish vs. farms, obtaining water from the alfalfa, cotton, pasture and rice grown on almost 3.8 million acres of California farmland looks to some like the answer to the state's water prayers. All four are thirsty crops and have relatively little dollar value compared with the state's luscious avocados, citrus, tomatoes, grapes and orchard fruits.

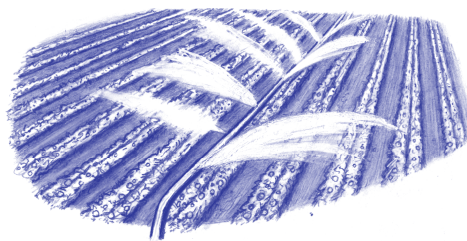
"Even the most horrible scenarios for urban water demand and future population growth could easily be met by diverting some water away from these four low-value crops," says the S.F. Regional Board's Larry Kolb. He notes that according of state Department of Finance figures, these four crops account for only about one-quarter of one percent of the state's economy while using about 30% of its developed water (water that is either pumped out of the ground or diverted from surface water sources for human uses, be they urban or agricultural). "Together these four crops use about 14 million acre-feet of water a year, while all urban uses combined only use 5 million," he says.

Needless to say, farming interests object to the notion that crops should be sacrificed for the sake of cities and the environment, and cite Department of Water Resources statistics in agriculture's defense.

"Agriculture and related industries provide nearly one out of 10 jobs in the state, and nearly 28% of the jobs in the Central Valley," says Michael Wade of the California Farm Water Coalition. In addition to farming jobs themselves, these figures include processing, trucking fertilizer manufacturing and sales and other farming-related jobs, says Wade.

However, Kolb points out that while high-value crops are labor intensive and provide lots of jobs, low-value crops are not. Indeed, from a grower's perspective, this is one of their virtues. "If you've got cheap water and very low labor costs, you can still make money even if the price of the crop itself is relatively low," he says.

But some say crop value and employment numbers shouldn't be the whole story and cite alfalfa as an example. Wade points out that other industries depend on alfalfa and rice giving these crops a role in the state's economy that far exceeds their dollar value. For example, U.C. Davis' alfalfa specialist Dan Putnam says the high quality and low price of alfalfa is



one of the primary reasons for the explosive growth of the state's dairy industry, the largest in the nation and the state's largest agricultural enterprise.

Putnam says some low-value crops have also have less obvious benefits. "Most growers grow a mix of crops for very good economic reasons. First of all, if everyone just grew a very high value crop, in five years you couldn't make any money off it" because the laws of supply and demand would drive prices too low. Furthermore, he says low value crops such as alfalfa are important as rotation crops even to growers of high-value crops such as tomatoes and lettuce, which "are of higher value but are also higher risk." Putnam says lettuce growers in the Imperial Valley have told him that they make money on lettuce only one or two years out of five. "Lower value crops really have a major role in keeping farms alive — they don't make farmers a lot of money, but they keep places going," he says. Putnam adds that alfalfa in particular also helps keep soil healthy. "Alfalfa obtains most of its nitrogen from the atmosphere. This means we don't have to use nitrogen fertilizers on alfalfa, and it contributes nitrogen to the next crop."

Defenders of low-value crops also point to their role in preserving habitat. Putnam says that Central Valley studies of wildlife in different types of landscapes have found that many species prefer alfalfa even over wild areas nearby. "Alfalfa is high nutritive forage so it's good for any type of herbivore, including rabbits and gophers. Then you get the predators — raptors and foxes — that prey on them."

Apart from the pros and cons of individual crops, Putnam thinks the whole low-value vs. high value issue may just cloud a bigger picture. "Agriculture is in the same boat as the environment when you start making an economic argument — urban interests will always win. You can always make more money per acre foot of water with a high-rise full of lawyers than with any crop that I've ever heard of. So if you look at water use purely economically, we'd better just give up and let the whole state look like Los Angeles." Contact: Larry Kolb (510) 622-2372; Dan Putnam (530)752-8982 or Michael Wade (916)441-7723 [CH](#)

POLLUTION

PATTYCAKE PROTOCOL

Dairy producers and environmental agencies traditionally have an uneasy, if not downright adversarial relationship. The regulators worry about impacts that dairy cows have on the state's water — each one produces about 22 tons of waste, i.e., manure, per year, which adds up to an annual total of almost 30 million tons statewide. Contamination of surface or groundwater can lead to fish kills, nitrate contamination, and the growth of bacteria and viruses, including *E. Coli* and *giardia*.



The dairymen have had their own beef with the regulators. They must deal with over a dozen state, federal and county agencies, each with its own procedures and regulations that often overlap and sometimes conflict. Simply sorting through all the different rules is a monumental task — failing to comply with them can result in fines and even jail time.

Help may finally be at hand. A couple of years ago, producers, regulators, and the University of California began working together instead of fighting. After lots of hard work, the California Dairy Quality Assurance Program is putting the final touches on an Environmental Stewardship program aimed at educating the ranchers and helping them make sure they are following all the rules.

The Partnership sponsors a six hour class taught by the staff of the U.C. Davis cooperative extension. During the sessions, instructors go over regulations governing such things as the size and construction of holding ponds for waste water, distances cattle need to be kept from ponds, ditches and riverbanks, and how waste products can be used as fertilizer without contaminating surface or groundwater.

Attendance is limited to actual dairy producers, which allows them to talk about their concerns without inhibition. The question and answer sessions can be quite freewheeling, says U.C. Davis' Deanne Meyer, who teaches the classes. Participants ask about the latest technology and how to interpret the more arcane regulations. Some dairymen, she says, bring in letters from agencies, and ask instructors "for interpretations into English."

The partnership is also developing a comprehensive checklist, outlining what must be done to bring a ranch into full compliance with the different agencies. A third party evaluator will visit the operation and go over

the list with the dairyman, checking for possible violations.

The Partnership's Michael Payne emphasizes that "evaluations" are not "inspections" in the regulatory sense. The evaluators are from the Department of Food and Agriculture, which has no enforcement powers in the environmental area, and the walk through is aimed at pointing things out before they become an issue with regulators.

"This is all voluntary," he says. Those who successfully complete the course and the evaluation will be awarded Environmental Stewardship certificates. Payne says that several producers are interested in certification in advertising or possibly as stickers on milk cartons. Those who fail the

evaluations don't get penalized in any way. "They simply aren't certified."

Creating the checklist wasn't easy, he adds. Every item had to be reviewed and re-reviewed by all the agencies involved, and it had to be put into a format that would be usable by the producers. The Partnership has completed a series of test evaluations at dairies around the state, and Payne expects the agencies to sign off on a final draft of the checklist this month. In September, the EPA awarded a \$443,740 grant, which will fund ten more sets of classes and over 1000 evaluations. "We're working to try to get us all on the same page," says EPA's Jovita Pajarillo. Contact: Michael Payne (530) 752-7507 O'B

WATERSHED

GIVING CREEKS & COWS SOME SPACE

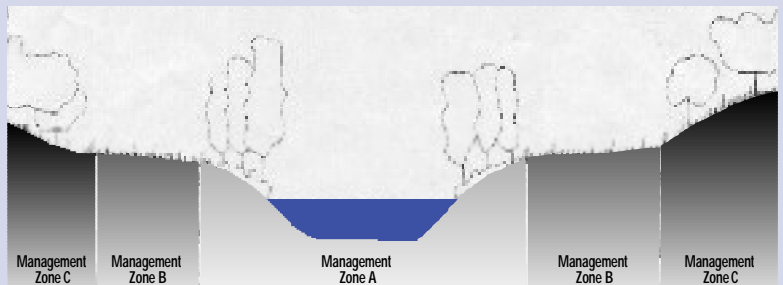
Astronauts lurching among the stars and cows grazing along Southern Alameda Creek have something in common. Resource managers for the creek employed a hazard analysis model developed by NASA and widely used in the food safety world to systematically identify, control and monitor contaminants to local waters. Such an exacting system, and the whole new celestial approach to bestial grazing in the 38,000 acre watershed it launched, became necessary when the landowner threatened to kick out the cows. Calves can convey the sometimes deadly bacteria *Cryptosporidium* into creeks, and the S.F. Public Utilities Commission didn't want this particular contaminant anywhere near its ratepayer's source of tap water.

It's been five years since the SFPUC made its threat and cows still dot the hillsides, but they aren't grazing the same way they used to due to the watershed protection project developed by the Alameda County Resource

Conservation District, the U.S. EPA, the PU and local ranchers leasing public lands. Among many measures, the project limits grazing in pastures near the creek and riparian areas to certain seasons (see diagram), fences off 24 miles of creekside, develops alternative cattle ponds and troughs away from sensitive areas, requires lessees to do herd health plans, sets stocking rates so that a minimum of 1,000 pounds of dry grass are still on the ground come fall and winter (just enough to reduce runoff but not too much to fuel fires), and prohibits calves under four months old from grazing in the watershed during peak flow events in April. Statewide studies suggest that about 10% of two-month-old calves "shed" (the polite word for poop) *Cryptosporidium* versus less than 1% of mature cattle.

As a result of new project's preventive measures, use of the watershed lands by cows is now down by 40%. Other measures aim to reduce sediment and pesticide

TITLE?



Management Zone A: Reservoir and Riparian Corridor Protection Zone. Livestock access is controlled to prevent direct contact with source water. Vegetative cover acts as a natural filter of surface runoff flowing to the stream or reservoir.
Management Zone B: Riparian Pasture Protection Zone. Pastures adjacent to reservoirs and sensitive riparian corridors are non-calf pastures.
Management Zone C: Cow-calf area. Early fall calving in the remaining areas. A 40% reduction in stocking rates will also be implemented to maintain adequate residual dry matter.

MOCTEZUMA CONTINUED

the project rather than deferring mitigation to some future date.

Environmentalists are also concerned that use of dredge spoils and disturbance of the marsh may not stop at the Montezuma project's 1,800-acre boundary. The red flag suggesting that their fears of expansion could come true is Solano County's recent decision to rezone 57,000 acres around the project's 2,400-acre "rehandling facility" to industrial use. The facility would process 400,000 cubic yards of Bay sediments per year, pumping water from onsite shallow groundwater wells to rinse the sediments and then using them in the Montezuma project or eventually shipping them to various Delta locations for levee repair.

Save the Bay's David Nesmith says the potential impacts of this facility are not adequately addressed in the EIR. "This rezoning means that industrial use in the marsh could continue for a couple decades beyond restoration. What about the ongoing impacts from hauling dredge materials on and offsite?" Enviro's are also suspicious that the rehandling facility, the county's zoning changes and a toll road proposal could all add up to more development in and around Suisun Marsh. In their lawsuit, they ask that Solano County's amendments to its general plan, including the rezoning, be set aside until an adequate EIR is completed.

Meanwhile the "tea" in the pot is beginning to boil, as others add their voices to the fray. Tony Arnold with the Suisun Resource Conservation District (which represents duck club and private landowners in the area) says they've kept a low profile so far because it seemed prudent to "let the engineers decide what was best." But, he says, the district has begun to be concerned about contaminants from spoil material leaching into the peat. He admits that the clubs could use some "good stable material" to maintain their levees.

The Audubon Society's Arthur Feinstein is no longer willing to put complete faith in restoration engineers: "Increasingly we're seeing examples of restoration experiments that are not coming out right — where engineers have goofed measuring acreage, hydrology, and elevations. Maybe we're not ready yet to do restoration with contaminants." Stay tuned: Levine-Fricke's permits are pending before BCDC and the Army Corps of Engineers. Contacts: David Nesmith (510)452-9261 or Doug Lipton (707)433-2094 **LOV**

MUD MATH CONTINUED

Williams), a half inch drop could result in a 40-foot retreat in shoreline or mudflat — another "big" number.

"If there's a lot of erosion, we may be losing just those habitats we're trying to preserve and increase," says Schoellhamer. "Sediment is the basic building block of the marshlands people want in the Bay."

So why not take that 65 mcy of grey slimey stuff from the airport and put it in our wetland projects to bring them up to sea level? "We may end up valuing dredged material a lot more as material for wetland creation because of declining sediment inputs," says Phil Williams.

If there isn't enough mud to go around, we could end up with a Bay ringed with lakes not pickleweed and cordgrass, especially if levees are breached to allow water into huge new areas proposed as airport mitigation sites, such as Cargill's 20,000 acres of salt ponds.

"Such a mitigation could turn out to be a bigger hydrodynamic issue than the runway fill itself, by causing major changes to the tidal prism south to the Dumbarton bridge," says Stanford's Steve Monismith, who also attended the October 20 event.

Some of the possible hydrodynamic effects intrigued Monismith and colleague Jeff Koseff, experts in modelling estuarine water circulation. Working with a graduate student over the past year, they plugged one of the proposed new runway configurations into a South Bay circulation model to see what might happen to tidal flows. They found that an eddy formed around the tip of the runway (see graphic), which took water from the main channel and pushed it into the shallows, and vice versa. "How far that

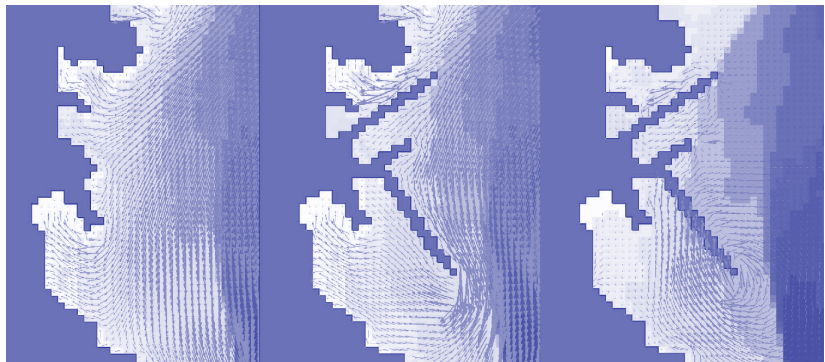
eddy goes out into the main channel could influence flow exchange between the North and South Bays," says Monismith.

But it was fish not flows that dropped a bombshell at the October 20 panel, at least according to Cal Fish & Game's Chuck Armor, who was surprised to find the airport didn't even have endangered species issues on its radar screen. Armor says steelhead and salmon migrate down the west side and channel of the Bay to spawn in Peninsula streams. Armor "strongly suspects" that the steelhead passing the airport are of the recently listed California Coastal variety, and the chinook could be among several listed or candidate runs. If a federal agency (such as the FAA) is involved in a project that might disturb or destroy federally-listed or candidate species, there's a rule that candidate fish must be extended the same protections enjoyed by listed fish, says Armor.

"Sediment isn't very sexy, but it could end up being a pretty ugly issue for the airport in the long run," he says.

Other issues worrying the panelists included loss of shorebird habitat (those shrinking mudflats), toxics stirred up by shoreline rearrangements, and incursions on some of the best halibut fishing shoals in the Bay to name only a few. A summary of the panel's suggested research questions is now being drafted by moderator Dr. Jerry Schubel of the New England Aquarium. But given the airport's projected two-year turnaround for an EIR on the street, who knows whether the science used to justify it will manage to leap off the backs of envelopes or sink under its own weight. Contact: Dave Schoellhamer dschoell@usgs.gov or Chuck Armor (209)948-7800 **ARO**

WATER CIRCULATION CHANGES AROUND PROPOSED RUNWAY



Eddy formed by one of the proposed airport runway configurations, as projected by Stanford graduate student Satoshi Inagaki using a circulation model known as "TRIM." TRIM is a computer code developed by Italian mathematician Vincenzo Casulli and previously used to assess how and where copper moves around the South Bay.

PLACES TO GO & THINGS TO DO



WORKSHOPS & SEMINARS

FEB
23
WEDS

LEGAL BRIEFING

Topic: Challenges to water rights, from Bay-Delta issues to Central Valley Project environmental restoration controversies.
Sponsor: Water Education Foundation
Location: San Diego
Cost: \$95
(916)444-6240

APR
25
WEDS - THRU
27
FRI

NATIONAL MONITORING CONFERENCE 2000

Topic: Monitoring for the Millennium
Sponsor: National Water Quality Monitoring Council
Location: Austin, TX
(405)516-4972 or <http://nwqmc.site.net>



MEETINGS & HEARINGS

JAN
19
WEDS

FRIENDS OF SAUSAL CREEK

Topic: Five-year action plan
Sponsor: Aquatic Outreach Institute
Location: Oakland
(510) 231-9566

MAR
13
MON

REGIONAL MONITORING PROGRAM FOR TRACE SUBSTANCES

Sponsor: SF Estuary Institute
Location: TBA



HANDS ON

JAN
21
SAT

FRIENDS OF SAUSAL CREEK MONTHLY WORKDAY

Location: Dimond Park, Oakland
9:00 A.M. — noon
(510)231-9566

FEB
19
SAT - SUN
20

20TH ANNUAL RIVERS FESTIVAL

Topic: Launch new effort to obtain Wild and Scenicstatus for the dwindling number of free flowing rives in California.
Sponsor: Friends of the River
Location: San Francisco
www.friendsoftheriver.org

WATERSHED CONTINUED

problems identified in the NASA hazard analysis.

Faced with the public health threat, especially to S.F.'s more susceptible immunodeficient population, everyone's first instinct was to "fence every drain and draw" says the district's Sheila Barry. "But it's not like a city on a flat map. When you look at the land, it just doesn't work." A more sophisticated approach evolved as stakeholders ranging from AIDS activists to ranchers to scientists to water quality specialists joined in discussing their concerns. "If there's one axiom of watershed management that works, it's that you've got to get all the people out onto the land. They all need to be out there together to see the resource issues together and talk about them together."

The PUC, for its part, also changed its land leasing conditions. "In the past the quality of our tenants suffered, and the system was mismanaged, because it was revenue-driven — the highest bidder got the grazing contract," says PUC's Tim Koopmann, also a fourth generation rancher. The PUC now conducts a stringent screening and scorecard tenant selection process. As a result, five of its 17 tenants turned over, and the PUC absorbed a \$200,000 loss in annual grazing lease revenue. Despite the hole in his pocket, Koopman is pleased with the environmental success of the program and says the only hardship on cattlemen has been the labor involved in so much fencing.

"This became a hot issue because of the health hazard, and the threat of a public body making a big decision that would affect everybody's lives, both ranchers and urban

NOW IN PRINT & ON LINE

Bay Area Creek Locations and Contacts (five-county list)

Aquatic Outreach Institute
Copies from (510)231-5778

Central Valley Project Improvement Act Final EIS

Bureau of Reclamation
Copies from (916)978-5190 or www.mp.usbr.gov

Conjunctive Use: A Comprehensive Approach to Water Planning (video); Groundwater Quality: Managing the Resource (video)

Water Education Foundation
Copies from (916)444-6240

Habitat Fragmentation: Spatial Processes and Restoration

Gary R. Huxel
http://two.ucdavis.edu/~huxel/hab_frag.html

Farm Water Works! (video)

California Farm Water Coalition
Copies from (916)441-7723

Lower Mokelumne River Restoration Program EIS/EIR

Bureau of Reclamation, et al
Copies from (209)369-6808

Natural History of the Islands of California

Allan C. Schoenherr, C.Robert Feldsmith,
Michael J. Emerson
University of California Press

Restoring the Estuary: An Implementation Strategy for the San Francisco Bay Joint Venture

San Francisco Bay Joint Venture
Copies from (510) 286-6767

The Salmon Story and Unwelcome Visitors (slide cards)

Water Education Foundation
Copies from (916)444-6240

REQUEST FOR PROPOSALS

The Alameda Countywide Clean Water Program is seeking proposals for educational projects to help prevent stormwater pollution and help restore the health of local creeks, watersheds and the bay. Deadline: January 24, 2000.
Contact (510)670-5394 or
louisec@acpwa.mail.co.alameda.ca.us.

The Watershed Assessment Resource Center, now being set up by Friends of the Estuary, seeks contractors to inventory existing watershed assessment programs, develop cooperative working agreements with community groups and government agencies, provide technical support, develop regional watershed assessment implementation plan and find long-term funding. Contact: Steve Cochran (510)622-2337

FROM PG 2 CONTINUED

The Strategy aims to more than double the region's tidal wetland acreage and triple riparian habitats ringing the Bay. It seeks to achieve 75% of the 50-year scientific blueprint for biological health mapped out in the Habitat Goals, a percentage that some partners thought impractical, given economic and social realities, and others thought not bold enough. Steere says the Venture settled on 75% in 20 years largely because of mounting threats from population growth and associated increases in land prices. "The longer we wait, the harder it will be to accomplish anything," he says. "So we front-loaded the acreage goals."

In addition to acreage goals for acquisition, restoration and enhancement of habitats in each of five sub-regions, the Strategy names specific partners and general actions necessary to achieve these goals. It suggests, among many ideas, developing a wetland and riparian "extension service" to help landowners be good environmental stewards; working with ports to use dredge spoils for tidal restoration; enhancing wildlife values on

Cargill's salt ponds; holding a restoration festival; creating incentives for the military to stop filling and degrading wetlands on bases; and encouraging "management and monitoring endowments" as part of project construction budgets.

"The Strategy provides a collaborative, entrepreneurial way of delivering on those goals and reaches across public-private boundaries to magnify everyone's resources," says Steere.

What the document is not is a check-list of target properties and projects. A special committee will identify "high activity" projects and set priorities on an annual basis, according to Steere, although some priorities are obvious right now, including expansion of the San Pablo Bay Wildlife Refuge to encompass the North Bay's Marin shore, restoration of Bair Island and Baumberg Tract in the South Bay, development of a wetland management and restoration plan for Point Edith and the Concord Naval Weapons Station along Contra Costa's shore, and support for environmental stewardship in the East Bay's Marsh Creek watershed. Such areas are where the Venture, a non-regulatory

endeavor that only works with willing landowners, feels it has the property, people and pennies all poised for progress.

The Strategy also breaks the waterfowl-centered mold of the 14 other joint ventures by taking a multi-species, multi-habitat approach. Higher ups in U.S. Fish & Wildlife have called the S.F. Venture a test case in broadening the scope of the North American Waterfowl Management Plan.

Test case or not, dollars and cents speak louder than paper and words. "You need an ambitious agenda to build the political will and public interest that will make all this possible," says the Bay Institute's Grant Davis, another Venture partner. Davis testified before a House subcommittee this November in support of the Estuary Habitat Restoration Partnership Act (HR1775 & SB738), a potential funding vehicle for the Strategy. "Our document conveys a regional direction with a sense of urgency, and tells Congress the Bay Area is ready to go." Contact: John Steere (510)286-6767 [ARO](#)

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Editorial Office: PO Box 791
Oakland, CA 94604
(510)622-2412

Estuary Web site at
www.abag.ca.gov/bayarea/step/news/newsletter/index.html

Subscription Q&A: (510)622-2321

STAFF

Managing Editor: Ariel Rubissow Okamoto
Associate Editor: Cariad Hayes
Graphic Design: Darren Campeau
Contributing Writers: Lisa Owens-Viani

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