ESTUARY NEWS

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FLAKING FLEET

After years of effort by regulators and enviros, tips from investigative reporters, and ultimately a lawsuit, a federal court judge ruled last year that the 57 ships in the mothball fleet sitting in Suisun Bay constitute a "point source" under the Clean Water Act and are discharging pollutants without a permit. The judge ordered the federal Maritime Administration ("MARAD") to clean the ship decks and hulls in a way that does not pollute San Francisco Bay.

The problem with the ships was first discovered in 2006 when *Contra Costa Times* reporter Thomas Peele tipped off the SF Bay Regional Water Board that MARAD was scraping invasive species from the sides and bottoms of ship hulls—along with large flakes of steel and paint containing heavy metals—into the Bay, says the Water Board's David Elias. "Most marine bottom paints even today contain heavy metals designed to kill anything that tries to live on the paint," says Elias. The US Coast Guard had ordered MARAD to clean the ships of invasives before sending them to Brownsville, Texas for dismantling. (At that time, MARAD claimed that cleaning the ships in dry docks in San Francisco—which would have prevented discharging invasives and paint into the Bay—was too costly, according to Elias.)

A report obtained at the time by the *Contra Costa Times* through a Freedom of Information Act request to the Coast Guard showed that a consultant hired by MARAD had found that around 20 tons of copper and other heavy metals was missing, and that lots more—as much as 65 tons—was about to fall off (in paint chips) or was lying around on the ships' decks. When MARAD finally tested the stormwater collected from the ships in 2009, the samples contained high concentrations of heavy metals including lead, zinc, cadmium, mercury, chromium, and copper, says Elias. In response, the Water Board ordered MARAD to deal with the problem

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INSIDE

VACUUMING FOR GOLD

Think of a gold miner and a grubby guy from early California history comes to mind. But up on the north fork of the American River, today's miner is more likely to be clad in an expensive wetsuit, operating motorized machinery, and wielding a hose rather than a pick axe. These modern day miners—among thousands who extract gold from California river bottoms with a floating vacuum called a suction dredge—are now trying to fend off threats to their stake. For two years a moratorium has kept them out of the state's rivers, and proposed new Cal Fish & Game regulations promise to cramp their style in the future.

A suction dredge operating in Slate Creek (Sierra County) in August. Photo courtesy Eric Maksymyk, Lt. Col. (Ret.), U.S. Army.

"What's lacking is a sense of proportion," says Craig Lindsay, a recreational miner who owns land on the bank of the North Fork of the American River. "We're a miniscule group making miniscule impacts, yet others seem to think we're the Antichrist come to Earth to destroy rivers. The truth is, miners are well aware it's not the Wild West 1850s anymore, when hydraulic hoses washed hillsides into the river. We know there need to be regulations. Most miners are happy not to dredge where there might be a Shasta crayfish or a yellow-legged frog."

A few miners working a stretch of river is one thing, but dozens in the same place at the same time, all running motors and rearranging the riverbed is another. Alarmed by the crowd of suction dredgers in their watershed, and worried about impacts on coho salmon, the Karuk Tribe of California sued Fish & Game in 2005 for environmental violations. To give the agency time to assess environmental impacts and update 1994 regulations, the state suspended suction dredging activities California-wide in 2009 (prior to the moratorium there was no cap on the number of dredging permits). This past spring, Fish & Game released a 1,000-page supplemental environmental impact report (SEIR) as a first step to complying with the California Environmental Quality Act (CEQA).

The report evaluated five alteratives, ranging from banning suction dredging altogether to reducing the number of mining permits issued annually to 1,500 to prohibiting dredging in areas with known contaminant problems, among others. "If you've ever watched a suction dredge, it looks like it must be bad. They're sucking stuff off the bottom and dumping off the back end of the dredge, and there's a plume of turbidity in the river behind. As to whether it really is bad for fish, the data are not a slam dunk. We're persuaded that suction dredging can be allowed in ways not deleterious to fish," says Fish & Game's Mark Stopher.

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FLAKING FLEET

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by scraping, sweeping, shoveling, and containing the flaking paint. The Water Board also ordered MARAD to come up with a plan to safely remove the invasives on the remaining ship bottoms. When MARAD did not comply with the orders, NRDC, BayKeeper, and Arc Ecology sued; the Water Board then decided to become a co-plaintiff.

Peeling mothball—or "ghost"—ships. Photo by David Elias.

"The Water Board had never sued the federal government before or partnered with environmental organizations as co-plaintiffs," says Elias. But the end result was a good one for the Bay: the settlement that was ultimately reached after the Obama administration took over mandated that 25 of the most polluting mothball ships be removed from the fleet and scrapped by 2013, and 32 more by 2017. The battleship USS Iowa will be re-used as a museum ship. "This case demonstrates that we can work side-by-side with NGOs to achieve the kind of compliance we otherwise might not be able to achieve," says Elias. "It's a potential road map for other state agencies to regulate the federal government."

And last but not least, says Elias, the simple act of sweeping the ships' decks works: when MARAD tested stormwater from the decks after sweeping them this past winter, concentrations of heavy metals were greatly reduced.The Water Board's Bruce Wolfe adds that the re-opening of the Mare Island dry docks where some of the ships will be dismantled, "provides an ecologic and economic win-win." The re-opened Vallejo shipyard, which was closed in 1995, is expected to create 100 to 120 jobs when it is fully operational. LOV

Feedback

HYBRID SPARTINA AND THE CALIFORNIA CLAPPER RAIL

Editor:

It was just 11 years ago when managers at the Don Edwards San Francisco Bay National Wildlife Refuge realized they were losing the battle to control a non-native cordgrass that had invaded their marshes, and turned to the State Coastal Conservancy for help. UC Davis researchers had recently identified the problem as not merely the introduced cordgrass, *Spartina alterniflora*, an aggressive invader of world renown; even more critical, they found, was the hybridization between the introduced grass and the native, *S. foliosa*. They discovered that the initial offspring backcrossed with the parent species and with other offspring, creating a broad spectrum of fertile hybrid forms called a "swarm." Many of these forms were much taller than either parent, produced bigger flowers with more seed and pollen, and could grow readily in areas where the native didn't grow. Also, the hybrids could pollinate native stands of *S. foliosa*, and produce thousands more invasive offspring. By the time the Conservancy and the Refuge started regional control five years later, the hybrids had spread from 100 acres to over 800.

Protected by the tall stands of vegetation, the endangered California clapper rail, whose populations had been nearly wiped out over the last 100 years by habitat loss, quickly took up residence in the expanding meadows of hybrid Spartina, and their populations began to increase. Open mudflat and flood control channel, such as Colma Creek, north of San Francisco Airport, went from few rails in the 1990s, to dozens by the peak of the hybrid invasion. Modest clapper rail populations in native marshes, such as Arrowhead Marsh in Oakland, exploded as the hybrid cordgrass, dominated the marsh and displaced the native vegetation. Between 1995 and 2008, as the hybrid Spartina cover at Arrowhead Marsh increased from less than 1% to greater than 50% of the area, the clapper rail population increased 500%. While hybrid Spartina may be damaging to native marsh structure and other birds and wildlife, it seems that clapper rails were happy with extra support provided by early stages of hybrid Spartina invasion.

By 2007, the Invasive Spartina Project was seeing real success, and by the end of 2010 the net baywide hybrid area was again under 100 acres. Most of the infested sites now have less than 1% of the peak hybrid Spartina cover, and it is anticipated that by 2013 most of these sites will be at 'zero- detection'. Where hybrid Spartina has been controlled, there has been a large-scale return to a native-plant dominated marsh at mid elevations, and to the original mudflat condition at lower elevations. At Eden Landing in Union City, non-native Spartina has been nearly eliminated from Old Alameda Creek, and the creek banks are now dominated with native tidal marsh plants like *Sarcocornia spp*, *Jaumea carnosa*, *Frankenia salina*, and *Distichlis spicata*. At Colma Creek in South San Francisco, the pre-invasion condition of the majority of the area was mudflat, and the area has transitioned back to mudflat-dominated habitat. Because of the difficulty discerning native Spartina from hybrid, and the risk to the native plants of being pollinated by still-present hybrids, Spartina foliosa has not yet been planted at many sites. However, the Spartina Project has begun experimental plantings to be able to facilitate the reintroduction of the native cordgrass in many areas in the near future.

At marshes where clapper rail populations expanded significantly during the years of hybrid Spartina invasion, annual rail surveys indicate that detections have declined to levels closer to "pre-invasion" conditions. In some cases this decrease is quite noticeable; at Colma Creek, which has returned to mudflat habitat, surveys detected three rails in 2011 (from a peak of 59 in 2005), and at Arrowhead Marsh, there were 35 birds counted (from a peak of 110 in 2008). At some sites, the decline is less dramatic, and at most, the annual change between years has leveled off. A few sites, such as the San Leandro marshes, showed an increase between 2008 and 2011 (from 31 to 52 rails detected). Surveys by the Invasive Spartina Project, PRBO Conservation Science, the Refuge, and East Bay Regional Park District collectively detected a minimum of 896 rails at 139 sites in 2010. Considering that over 1,900 hectares of prime clapper rail marshes were not surveyed, the current baywide rail population is likely greater than 1,400 birds – lower than the elevated levels of 2006, but higher than pre-invasion population estimates. There will be very little additional loss of clapper rail habitat from hybrid Spartina eradication, and the previously invaded marshes are now back on the trajectory to a healthier, more native restored ecosystem.

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VACUUMING FOR GOLD

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The approach Stopher's agency finally settled on involves a mix of equipment and operational restrictions. For example, miners are being asked to use vacuum nozzles of certain sizes, to screen water intakes with a fine mesh, to stay at least three feet away from river banks and to take more care in how they winch rocks out of the way and where they leave their leftovers (tailings).

Numerous caveats and other restrictions are spelled out in Chapter 2 of the SEIR. But more interesting is the long list of tables in this chapter in which Fish & Game has given all the rivers and streams in California a classification between A (no dredging) and H (dredging year round). B-G specify different seasonal windows from 1-6 months in length when miners can use suction dredges to sift riverbeds for gold.

These seasonal mining windows, matched to specific river stretches, correlate with Fish & Game's attempt to protect critical habitats and life stages of various sensitive species of salmon, steelhead, suckers, frogs, toads, and perching birds. "If a suction dredge were allowed to operate on top of gravel with salmon eggs in a redd, there would be a complete loss of those organisms," says Stopher.

"Class A" appears next to dozens of stretches of river in the tables. A sampling includes Sonoma's Petaluma River, most of Butte Creek, the mainstem of the American River between its confluence with the Sacramento River and Nimbus Dam, and the Mokelumne River between Burella Road and the Comanche Dam. The list goes on for 37 pages.

"It's too complicated and contradictory," says Steve Evans of Friends of the River, who has already found what he feels are some major oversights in the SEIR. These include allowing suction dredging in 10 rivers designated as critical habitat for endangered fish; 3 national and 4 state parks where other regulations already prohibit the activity; and on 46 segments of river previously closed to mining in the 1994 regulations. According to these regs, "You can dredge in the Merced River in the heart of Yosemite National Park," he says.

He also questions Fish & Game's decision to organize its restrictions by county. In some cases, especially where rivers form county boundaries, the result is two different sets of regulations depending on which side of the river you're on, he says. Evans is also skeptical about the effectiveness of operational requirements such as staying three feet away from the river bank. "They don't have enough wardens with yardsticks out there to enforce that," he says.

Evans also has a problem with the assumption made by miners, and by Fish & Game to a lesser degree, that because winter storms and Mother Nature rearrange river beds far more dramatically than suction dredgers, the impact of the latter isn't significant by comparison. "You can't hold God to CEQA," says Evans. "Suction dredging is conducted during low water in summer, when fish are seeking deep, cool pools. Dredgers may chase them out. Maybe they'll find another cool pool, maybe they won't."

Gold is more than 19 times as dense as water, and much denser than most other materials, so it tends to end up deep down under cobbles, gravel, and "overburden," as miners call it. With the gold lies its nefarious companion, mercury—a legacy that now presents the state with one of its most ubiquitous water quality problems. The stuff is everywhere in the Sierra watershed, because early miners liberally laced their sorting equipment and sluices with mercury to separate out the gold. Like the gold, it sank down to the bottom and now remains somewhat sequestered—that is, until suction dredgers root around and stir things up. New studies by the US Geological Survey (USGS) suggest the activity promotes the re-release of mercury into the aquatic environment.

"We already get pretty big loads of mercury out of these contaminated rivers in the winter, but when everything's turbulent and cold, there's not a lot of biological activity. But with suction dredging, you're dredging up this stuff in the summer, when flows are lower, the water is warmer, and foothill rivers are enriched with nutrients like sewage," says Rick Humphreys of the State Water Resources Control Board. Under these conditions, nutrients and bacteria conspire to convert mercury into its methylated form, which is much more directly passed up the food web.

The State Water Board helped pay for the USGS research, and rode herd on the water quality portion of Fish & Game's SEIR. They wanted to pin down exactly what happens to

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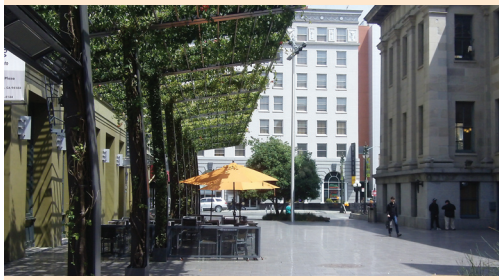
PERMEABLE PLAZA

In downtown San Francisco, a former derelict alley has been transformed into a popular pedestrian plaza that removes as much as a half million gallons of stormwater runoff per year from the city's combined sewer/stormwater system. The project designers divided the plaza—just off of Fifth Street between Market and Mission—into three "mini" watersheds, explains CMG Landscape Architecture's Scott Cataffa. Two of the "watersheds" flow into and through stormwater planters at either end of the plaza; one flows into an almost invisible slot drain. From there the stormwater goes into an underground infiltration basin, where it slowly percolates into the native soil, which is sand and rubble from the 1906 quake, according to



Mint Plaza. Photo by Lisa Owens Viani.

Sherwood Design's Bry Sarte. The new plaza, funded by a special tax assessment district, has spurred redevelopment all around it. Historic warehouses have been converted to condos, high-end coffee shops, and restaurants, while the plaza, in addition to treating stormwater, hosts concerts, farmers' markets, and dance performances.

"It's a win-win-win," says the city's Michael Yarne, who spearheaded the project while working for Martin Development Company. The San Francisco PUC chipped in $150,000 from its depaving fund; that contribution plus $200,000 from a local hotel seeking an open space mitigation site downtown, helped offset the $3.2 million total cost. In an interesting twist of fate, the Old Mint, a Greek Revival building built in 1874, survived the big quake because rainwater had been captured in underground cisterns. Today the plaza "harvests" rainwater in a different way, says Sarte, by putting it back into the ground, helping avoid sewage overflows into San Francisco Bay. LOV

TAKING THE CORPS TO COURT

Two more environmental groups are gearing up to take the US Army Corps of Engineers to court over its directive that would require the removal of trees and shrubs from 1,600 miles of California levees under a new variance procedure. On April 19, Sacramento-based Friends of the River (FOR) and Defenders issued a 60-day notice of intent to sue the agency for violating the Endangered Species Act (ESA). FOR was joined by Defenders of Wildlife; the Center for Biological Diversity released its own notice last August.

Seconding criticism by state and local agencies and 17 members of Congress, FOR's Bob Wright says following the Corps' requirements would be catastrophic: "In many parts of the Central Valley, trees along levees are the last 5% of what once was extensive riparian forest. Destroying that would have enormous adverse consequences for endangered species, fish, and other wildlife. And it would make our rivers look like drainage ditches." By DWR's estimate, tree removal and mitigation would cost $7.5 billion. Noncompliant local agencies could lose their entitlement to federal flood aid.

Wright says the Corps failed to perform the required programmatic analyses under NEPA and ESA and doesn't even consider its own studies on the value of vegetation for levee structure. "We don't have to prove intentional violation of the law to win under ESA or the National Environmental Policy Act, but this case does look like intentional violation." The Corps had not responded to the new notice as of press time.

Meanwhile, says CBD's Lisa Belenky, the agency still says they've never finalized the variance policy. "The Corps is in disarray," she adds. "They created a mess, and local agencies are trying to deal with it as best they can. Some are pushing back while others are scrambling to find ways to comply."

On another track, members of local agencies and organizations, including the Bay Area Watershed Network and Bay Area Flood Protection Agencies Association, are working with the California State Association of Counties to change Corps policy through the upcoming federal WRDA and Corps appropriations bills. JE

Reuse

BIRDS, HAY, OR GRAPES?

Beneficial reuse of dredged material from San Francisco Bay sounds like one of those motherhood-and-apple-pie issues. The idea is to place dredged sediments where they're needed rather than dumping them at sea. The tricky part comes in evaluating whether the placement best serves the public interest. Is the material going to subsided areas that are candidates for tidal marsh restoration, or to commercial operations? Who decides, and on what policy basis?

Carneros River Ranch, also known as Lower Ranch, a 528-acre parcel bordering San Pablo Bay east of the Petaluma River, is an instructive case study in the reuse of dredged material. The ranch, formerly tidal marsh, was long ago diked, drained, and converted to hayfields. Some seasonal wetlands remained, although their extent is unclear.

In 1989 the Sonoma Land Trust and Rosewood Holdings, the owner at the time, finalized an agricultural conservation easement for the property. Bob Neale of the Trust, who was not involved in the negotiations, says the easement specifically prohibits "establishment of any nonagricultural commercial or industrial uses" while allowing the production of "agricultural crops of every nature and description." In response to a comment from Marin Audubon in 2003, the San Francisco Bay Regional Water Board stated: "Trust counsel has advised the property owners that converting the site to wetlands may be inconsistent with the terms of the easement and conversion to any other land use would be virtually impossible." The easement document itself is silent on this point.

Dredged material from the nearby Port Sonoma marina has been pumped onto the ranch's hayfields since 1997. The current owner, North Bay developer Harvey "Skip" Berg, who also owns the marina, subsequently increased the volume of material being moved. "There were pretty big plans to deposit large volumes of dredged material," recalls Neale. "We were concerned that it was inconsistent with the agricultural conservation easement. We were not able to get our questions answered satisfactorily so we had to proceed with a lawsuit against Berg Holdings in 2006."

Marin Audubon, along with other environmental groups, supported the suit. "We came in as a friend of the court," says Barbara Salzman. "As an organization, we have a long history of opposing placing dredged material there. The issue to me is the more fill you put on the property, the less wetland character it has." Coastal ecologist Peter Baye, a longtime critic of local sediment management practices, agrees: "This intensification of agriculture and dredge material disposal in diked baylands defeats the purpose of protecting low-intensity agricultural use compatible with seasonal wetlands and waterbird use. It's not an enhancement, it's a conversion. They're completely burying the original soil profile and original drainage topography."

The Land Trust suit never went to trial; the two parties settled out of court in 2008. "We settled because they brought forward credible information that supported their contention they could use dredged materials in a manner that enhanced agriculture and was consistent with the conservation easement," Neale says. "We were reimbursed for all of our legal costs." Salzman has her own perspective: "The Land Trust couldn't prove otherwise. There's not much legal history on enforcing easements, and it's apparently more difficult than we thought."

Although the settlement document was not available for review, Neale sketched the terms: "The settlement set up a procedure for testing and handling materials. We hired a soils scientist and spent a lot of time developing criteria for salinity, pH, and heavy metals. We get an annual report of their activities, with testing results. We believe the settlement agreement is working well and are very satisfied with Berg Holdings' compliance.

Sediment has continued to flow onto the site, 700,000 cubic yards to date. Some, in 2007, came from Bel Marin Keys. "The Bel Marin Keys community dredged 35,000 cubic yards and pumped it to Carneros," says BCDC's Brenda Goeden. "At the time, other sites were not ready for the material and Carneros River Ranch was closest to them. Bel Marin Keys used FEMA money to pump the material."

Berg Holdings' J. T. Wick says plans call for eventually filling the entire property. At this point, 10 acres have received dredged material, amended with compost and worm castings. Wick boasts that the operation

Oat hay harvest at Lower Ranch. Photo courtesy Peter Baye.

has "the largest worm ranch in California—6 million head. We have gone to worm castings because we want to be a certified organic farm for everything we grow. We're getting better and better at the art and science of creating premium agricultural soils." The hayfields are giving way to vineyards (starting with 300 Syrah and 300 Pinot Noir vines), olive groves, and produce grounds. Wick says Carneros tomatoes, including heirloom varieties, are already being sold to local markets. The ranch will also grow native live oaks for mitigation planting by CalTrans and other agencies.

Mitigation for loss of existing seasonal wetlands is also on the agenda. Wick says this is a voluntary program based on Berg Holdings' own CEQA analysis. "We plan to create 19 acres of seasonal wetlands by the river," he explains. "We have to have the total mitigation in place by the first time we impact any one of the wetlands, probably in 2012. The wetlands will accommodate livestock grazing under a management plan we will develop with the Land Trust which maintains a similar practice on the neighboring North Parcel ranch, so the wetland area will continue to support agriculture just as the existing wetlands continue with hay production."

From the Land Trust's point of view, the easement will not have been violated as long as the land remains in agriculture. "The proof is in the crop," says Neale. "The settlement agreement requires Berg Holdings to grow crops on those areas that have received the dredged materials. Anything they convert can't lie fallow. As for the seasonal wetlands, any requests by landowners are put through a process to ensure that the proposed activities are consistent with the conservation easement."

Salzman, among others, wonders about further, non-agricultural development at Carneros River Ranch: "That's the concern, that they really have something else long-term in mind." But Neale discounts that: "Larger-scale development is simply not allowed under the easement." Says Wick, "We're committed to continued agriculture at Carneros River Ranch as the conservation easement ensures."

Meanwhile, Goeden says regional planners are doing their best to match up sediment sources and recipients. Cullinan Ranch, a deeply subsided federal tidal-marsh restoration area, is in line for 405,000 cubic yards of dredged material. Other projects, including the South Bay Salt Pond restoration, have expressed interest. "There's more dredged material than locations available to take it," she says. "We'll be working more intensively on a regional sediment management program that looks more specifically at how we use dredged material. Through that process we might get to the point of prioritizing."

Observers like Baye would like to see the process speeded up. "Given rising sea level and declining suspended sediment, there is a race to get tidal wetlands past the vegetated threshold before sea level rise accelerates. Yes, BCDC is working on the regional sediment management plan, but projects and plans are moving ahead without it."

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COMPUTER-ASSISTED CONSERVATION

Five years in the making, a new resource just became available for Bay Area conservation planners: the Conservation Lands Network. The CLN, a product of the Upland Habitat Goals Project, represents a collaboration of 125 organizations and individuals led by the Bay Area Open Space Council and funded by the Coastal Conservancy, the Moore Foundation, and others. It provides downloadable maps covering 4.3 million acres and introduces an interactive mapping tool to better inform land use decisions. A printed report will be out by June. "With this and the Bayland and Subtidal Goals Projects, we have the region covered with these three planning processes," says the Council's Bettina Ring.

The Council's Ryan Branciforte explains: "We used a coarse filter to look at vegetation and habitat types throughout the Bay Area and set acreage goals for each habitat type. Then we fed fine-filter data on individual plant and animal species into that." The project also mapped parcel size: "You want large connected landscapes so species can move around and interact with each other. Parcels are surrogates for how fragmented the landscape is."

The Explorer tool makes a huge database available to the conservation community. "Any conservation group can download the full GIS database or use Explorer right on the website," says Branciforte. "Users can select an area and see how suitable it is for conservation."

More sophisticated regional climate change modeling may allow Explorer to generate climate portfolio reports projecting future vegetation patterns and identifying resiliency. The Bay Area Critical Linkages, an effort to save or restore connectivity between protected areas for migrating wildlife, will also be integrated into the CLN.

"The landscape is dynamic and conservation plans need to keep pace," Branciforte concludes. "We're working on a process for keeping up to date and incorporating new information. This will be a living document the community and region can continue to work together on."

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SEEKING REFUGE

Watching and listening to thousands of geese and ducks in motion at one of the Central Valley waterfowl refuges is a stirring experience. It's easy to forget that this natural spectacle is taking place in a completely artificial environment—one of the chain of manmade habitats that have replaced the primordial wetlands of the Pacific Flyway.

Syracuse University geographer Robert Wilson provides that context in *Seeking Refuge: Birds and Landscapes of the Pacific Flyway* (University of Washington Press Weyerhauser Environmental Books series 2010). It's a complicated story, and Wilson tells it well.

Historically, the Flyway was anchored by great shallow lakes and dynamic seasonal wetlands. A few visionaries, like William Finley and Herman Bohlman, recognized the value of preserving these landscapes. But to most Euro-American settlers, the water was an impediment to farming and "reclaiming" the land a moral imperative.

Female common merganser by Colin Talcroft, one of the winning photos in the Estuary Partnership's 2011 Birds of San Francisco Bay calendar contest.

Wilson chronicles the bureaucratic tug-of-war between US BurRec, the ditch-and-drain agency, and US Fish & Wildlife, the manager of the first few National Wildlife Refuges. The political odds favored Reclamation. Fish & Wildlife had a powerful constituency in waterfowl hunters, but that tilted the agency toward production of ducks and geese over other environmental values. Refuge manage-

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Imperiled

SWIFTS, SNAGS, AND SMOKESTACKS

Large old growth trees—dead and alive—have mostly disappeared from California's redwood forests. Yet it is large, old, often hollow trees—including the "residuals" left behind after a logging operation—that provide nesting, roosting, and foraging spots for many wildlife species, not only for the well-known marbled murrelet and spotted owl, but also for red tree voles, fishers, peregrine falcons, bald eagles, wandering salamanders, and a small cigar-bodied bird with sickle-shaped wings, the Vaux's (pronounced like "fox's") swift. Vaux's swifts, which spend much of their lives on the wing, roost in large groups in hollow trees at night to conserve body heat. They are listed as a California Species of Special Concern, and their numbers continue to dwindle; about 95% of the large and old redwoods that they use for roosting and nesting have been logged, according to US Fish & Wildlife Service's John Hunter. Vaux's swifts are fast-flying insectivores that inhabit southwestern Alaska south to central California; they winter in Mexico and Central America. On their migrations south—and back—they stop over in huge groups of thousands of birds to rest for the night in any remaining big trees. They also roost in old smokestacks, which are themselves becoming rarer these days. A few of these old smokestacks remain along the edges of San Francisco Bay.

"It's very important for these birds to have stopovers," says Dr. Evelyn Bull, a retired research biologist for the US Forest Service's Pacific Northwest Research Station. "If you have thousands of birds migrating at once, you've got to stop somewhere and rest. A lot of the hollow trees can't hold 20,000 swifts, so the chimneys are critical."

Larry Schwitters, a resident of Issaquah, Washington, is trying to help by coordinating a swift watch program for Audubon on the West Coast, recruiting volunteers to count swifts and inventory chimneys. In the Bay Area, a large roosting site still sits on the edge of San Francisco Bay in an old smokestack at an old brickyard in Marin. Last fall, thousands roosted there on their way south, and recent surveys show them using it again on their return journey north. Yet, three big chimneys were recently torn down in the South Bay's Niles Canyon before Schwitters could make his case to the landowner.

Photo by Richard Pavek.

"They're tearing down chimneys as fast as we can find them," he laments. In Scotia, in northern California, several old brick chimneys used for roosting were replaced with modern stovepipes after the 1992 earthquake, says Hunter, who suggests that even single random events can lead to potentially significant loss of nesting and roosting structures. In downtown Los Angeles, the chimney on the 84-year-old Chester Williams building supports a huge roosting event every year, as does the Rio Lindo Academy in Healdsburg. In Monroe, Washington, a chimney used by over 20,000 swifts at an elementary school faced the wrecking ball over concerns about seismic safety until Schwitters and three local Audubon societies mounted a campaign and convinced the state to chip in $100,000 to bolster the chimney. The chimney is now the pride of the community and school. "We're trying to save the roost sites for the birds. We've screwed up their other ones; we want to give them sanctuary," says Schwitters.

Schwitters' wants to increase public awareness about swifts and chimneys—large and small. Like chimney swifts on the East Coast, Vaux's also sometimes use private chimneys for nesting although as Hunter points out, chimneys can be dangerous—with fires possibly being stoked at any minute—and may not be comparable to natural sites for sheltering. Hunter says there was an

effort in California a few years back to protect large old trees on private lands by adding restrictions to forest practice regulations, but the effort failed. "To their credit many timber companies, such as Mendocino Redwood Company, have self-imposed restrictions on cutting large old trees, but most do not," he says. Hunter says that the "residuals," once considered of low value due to some bad wood or deformity, are now often targeted by foresters and loggers, despite that the fact that only a small portion of the trees may be usable and the rest is often discarded. In the forests of northeast Oregon, according to Bull, trees over 21 inches in diameter haven't been harvested for the last 10 years. For now, Schwitters continues his efforts to count and save the swifts—and the smokestacks. See www.vauxshappening.org

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SEEKING REFUGE

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ment came to include growing grain for the ducks and geese, pesticide use, and predator control.

The Endangered Species Act gave the refuges a new mission that coexisted uneasily with its duck-farming role. Fish & Wildlife was increasingly caught in the crossfire of the western water wars, leading to confrontations between farmers, wildlife advocates, and Native American tribes in the Klamath Basin and the tragedy of Kesterson, where a poisoned sump briefly became a wildlife refuge. Climate change poses new and unquantified challenges.

Pacific Flyway waterfowl may persist, says Wilson, but not without changes in land use: "[I]f they are to thrive, rather than merely endure in small numbers, they need more than marginal land and waste water from agriculture. Having claimed the habitat of migratory waterfowl to build our farms and cities, it is time to give some of that space back." JE

10TH BIENNIAL STATE OF THE ESTUARY CONFERENCE

September 20-21, 2011

JEAN AUER ENVIRONMENTAL AWARD
Call for Nominations

The San Francisco Estuary Partnership seeks nominations of individuals who have made a significant contribution toward improving environmental quality in the Bay-Delta Estuary. An award, given in memory of Jean Auer, will be presented to the selected recipient at the conference. People may be nominated from the public or private sector. Individuals working on water-related issues will receive special consideration.

Nominations must be received at the San Francisco Estuary Partnership no later than 5:00 PM on Friday, July 15, 2011. For details: http://sfestuary.org/soe2011/

OUTSTANDING ENVIRONMENTAL PROJECTS

Call for Nominations

The Friends of the San Francisco Estuary seeks nominations for outstanding environmental projects that benefit the San Francisco Bay-Delta Estuary and its watersheds. Projects with significant achievements will be featured at the conference and awards presented to the responsible organizations. Nominated projects should fall into one of the categories given in the San Francisco Estuary Partnership's Comprehensive Conservation and Management Plan (CCMP). Call 510/622-2304 for a copy or check online.

Nominations must be received by the Friends of the San Francisco Estuary, c/o San Francisco Estuary Partnership, by 5:00 PM, Friday, July 15, 2011. For details: http://sfestuary.org/soe2011/.

NEW VIDEO PODCASTS: WWW.SFESTUARY.ORG/PODCAST

TRESTLE TROUBLE

Most of the train trestles over creeks and marshes at the Bay's edges were built in the late 1800s or early 1900s; many are undersized, causing creek waters to back up behind them, resulting in localized flooding. When tides are high, and as sea level rises and/or storms become more severe, the problem will only worsen. Some experts say that many costly federal and local flood control projects on the Bay's creeks have been necessitated by these undersized trestles and culverts.

PUMP IT, DON'T DUMP IT! and CLEANER, GREENER BOATING

Over one million registered boats ply the waters of California. Yet these boats—and their owners—can pollute our waterways, including San Francisco Bay. The untreated sewage discharge from one weekend boater produces an amount of bacterial pollution equal to that of 10,000 people whose wastes are treated. One easy solution is to pump out the boat's marine storage device, as demonstrated by the Estuary Partnership's James Muller in Pump It, Don't Dump It! James Walter, San Francisco's South Beach Harbormaster, offers additional tips to boaters for keeping the Bay clean in Cleaner, Greener Boating plus information for other harbormasters about grants for installing pumpouts.

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ESTUARY NEWS is your news source on Bay-Delta water issues, estuarine restoration efforts, and the many programs, actions, voices, and viewpoints that contribute to implementation of the S.F. Estuary Partnership's Comprehensive Conservation and Management Plan (CCMP). Views expressed may not always reflect those of Estuary Partnership staff, advisors, or CCMP committee members. ESTUARY NEWS is published bimonthly and is funded by the San Francisco Estuary Partnership.

VACUUMING FOR GOLD

(CONTINUED FROM PAGE 3)

the fine suspended sediment, and its mercury load, once it was dredged by the suction hoses, and reintroduced into the water column. They wanted to know how long it might take to settle out and how "reactive" it might be once the suspended mercury reached a "methylating environment" downstream like a warm, biologically active delta marsh or foothill reservoir.

"We connected dots never connected before, doing a two step simulation of first the suspension, and then the deposition," explains USGS' Charlie Alpers, referring to studies simulating the fate of contaminated fines dredged from the Yuba River below the infamous Malakoff Diggings gold mine. "We used a 50:1 ratio of the receiving sediment to the spiking sediment, and even with 50:1 ratio we saw methyl mercury double in some cases."

Though Fish & Game analyzed the mercury impacts in the SEIR, and proposed operational restrictions and voluntary BMPs for mining as a result, they can't close the state's rivers to suction dredging for any other reason than the protection of fish and wildlife. Because Fish & Game didn't choose the "no program" alternative, the State Water Board now has to reconsider how to protect water quality, according to Humphreys. "There are areas where the fish issues might warrant a season, but the mercury issues might warrant a closure," he says.

Miners contest that the studies did not accurately simulate a real dredge operation, and suggest that dredgers may actually be removing mercury from the riverine ecosystem rather than reintroducing it at detectable levels. Alpers, meanwhile, is confident of the USGS work but agrees that "the data have to be separated from the interpretation." Though the methylation rates simulated may be alarming, the numbers are still being crunched to guesstimate how many dredgers are working how many hours a week using what management practices to produce how much methyl mercury.

Says Stopher, "I'm confident we didn't get everything right. I expect we will be making some changes based on public input—some of the final regulations may become more restrictive than they are in the draft, some less. That's how public review is supposed to work." So far, he's received thousands of comment letters and hopes to release updated regs by November 2011.

In the meantime, legislators grappling with the state budget are questioning whether a program that does not pay for itself can be allowed to continue. Yet even if budget cuts prevail, one outcome may simply be an extension of the suction dredging moratorium for another five years, leaving the prospect of rivers reopened to miners in a more golden future. ARO

USGS study: http://ca.water.usgs.gov/mercury/southYuba.html

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