ESTUARY

YOUR BAY-DELTA NEWS CLEARINGHOUSE

FLOOD FOOTNOTES

Houseboats crashing into bridges, Bay waters fresh as a lake, collapsing levees, spilling rivers, puny sandbags piled against superhuman forces — these are the images of the flood of 1997. Yet the Delta faired "remarkably well," according to the Department of Water Resources' Curt Schmutte, and so did Sacramento. In 1986, the city narrowly escaped flooding and some big Delta islands went under the high water but levee strengthening, innovative flood control and riverbank restoration since then all paid off when the waters rose again in 1997.

Despite talk in the press of reviving big-ticket flood control projects like Auburn Dam, new planning and funding for flood fighting seems to be centering on less ecologically-destructive measures. One major area into which CALFED may pump money, for example, is the construction of setback levees, which recreate floodplains. Such a project is now being investigated for the south fork of the Mokelumne River. This project would run for about 10 miles and be placed about 1,000 feet back from the riverbed.

"There's now a lot of talk about doing setbacks and bypass channels along the San Joaquin River as well," says Schmutte. "It's obvious that the levee system in San Joaquin is stressed to a much greater degree than the Sacramento River, where we had breaks but didn't exceed the capacity of the system."

Offstream water storage (i.e. dams) is not off the table, but its cost-effectiveness and impacts on fish migration remain in question.

Apart from CALFED's long-term commitment to investing in levee system integrity, $25 million in new dollars for flood management are also coming from passage of Prop 204 and AB360 in 1996. Schmutte says this winter's floods highlighted a "number of weaknesses in the Delta system, such as upper Roberts Island, which will now become priorities for spending the new money." Contact: Curt Schmutte (916)227-7561 *SZ & ARO*

ESA Evolves With Steelhead

Just how dramatically an innovative effort to save a high-end game fish will redefine the debate over endangered species will be seen when the Endangered Species Act comes up for a sorely overdue reauthorization. In the meantime, a good measure of the debate over the upcoming listing of steelhead trout stems from the fact it is almost indistinguishable from the mundane but beautiful rainbow trout, a fish which proliferates in lakes and water impoundments. Often the steelhead share the same territory with rainbows. But the steelhead receives a genetic call to move out to sea. Because of the steelhead's vast range, which stretches from Siberia's Kamchatka Peninsula to Baja California, and its remarkable diversity of behavior and habitats, biologists have had to come up with a complex proposal for listing, protecting and restoring the fish.

"There's nothing comparable to this listing," says Mark Capelli, an analyst for the California Coastal Commission. "This is the most sophisticated, complicated use of the ESA since its inception. There's more science behind this and there are more people involved."

The steelhead trout listing proposal, expected to be finalized this August, reflects the genetics, politics and biology of a complex coastal species that ranges from fresh mountain creeks to the salty ocean deep. In a remarkable essay, John Krist of the *Ventura County Star* describes how steelhead and other members of the salmonid family possess "an onboard desalinization plant" that allows them to drink salt water as they reach the sea, shutting down their kidneys and activating special cells in the gills to filter out sodium and chloride.

"This is the most sophisticated, complicated use of the ESA since its inception."

"It's an elaborate, elegant and remarkable adaptive mechanism," he writes, "offering the seagoing salmon and trout two distinct survival advantages: By leaving the nutrient poor environment of small, high-altitude streams for the richness of the sea, the migratory fish obtain access to an abundant food source. And by escaping the confines of its birthplace, it is free to colonize new river systems — entering from the sea — where competition may be less fierce."

Adaptability could be considered the defining quality of steelhead, paradoxical as that may sound. For fishermen, steelhead and rainbows are quite different. Steelhead grow muscular and tough on their journey to the sea. They are in an entirely different weight class, coming in at around 8-10 pounds instead of the rainbow's two or three.

For biologists, steelhead are what is called an umbrella species, which means that if steelhead are protected, then other species generally receive protection, too. This is because the steelhead's range exceeds that of other anadromous fish. They possess the ability to migrate further upstream than most chinook salmon species and can tolerate a greater range of temperatures. Runs vary across a wider spectrum of the year, which allows them to select from a variety of niches. And steelhead don't always follow the bumper sticker advice "Spawn and Die." Up to a third return to the sea after spawning.

In political terms, the steelhead's adaptability could cause even more clashes with commerce than the listing of various salmon species. The salmon's range stops around Monterey Bay, while steelhead run smack into the tangled plumbing of southern California, probably the most heavily managed water supply in the country.

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BURNING ISSUE

THE SHADOWY RAIL

The strong arm of wetland restoration has flushed a small, secretive rail from the North Bay salt marshes, and it isn't the clapper kind. The last few thousand California black rails live in the last relatively pristine and mature marshes of the North Bay, flanked by more degraded turf that is the focus of dozens of well-intended restoration projects. "These projects are more than a golden opportunity for the rails," says the San Pablo Bay Wildlife Refuge's Betsy Radtke, "Restoring this habitat is essential for their survival."

The black rail has often been overlooked when it comes to conservation because it simply less obvious—and maybe less "charismatic"—than certain other endangered species, according to Jules Evens of Point Reyes Bird Observatory. The clapper rail is "larger and louder" and easier to detect than the black rail.

But there are other reasons for the black rail's obscurity. It prefers well-vegetated upper marsh over the lower marsh used by many species, which "is good news in a way because the rail is so furtive and difficult to detect that its been overlooked in some spots, which may have actually helped it," says Evens. "But the highest reaches of the marsh are also usually the first places to be developed—where the filling and levee-building takes place. So the impact has been greatest there. Of the bay wetlands, this upper fringing habitat has suffered the greatest loss."

Evens predicts that if and when the black rail is finally federally listed (it is currently a state "threatened" species), and its habitat protected, enormous public outcry will be heard from those who will equate preserving rail habitat with lost economic opportunities.

But economics and politics aren't the only enemies of the tiny, oddly-shaped bird ("think of a heavy-bottomed robin or towhee without the tail" says Evens). In extreme high tides, the rail is forced to the upper limits of the marsh where, especially in degraded, poorly vegetated marshes, it becomes easy prey for hawks, egrets, and herons (not to mention numerous non-native predators like feral cats and Norway rats). If forced to, the rail will fly—but not well. "I've seen egrets swoop right down and catch them mid-flight," says Evens.

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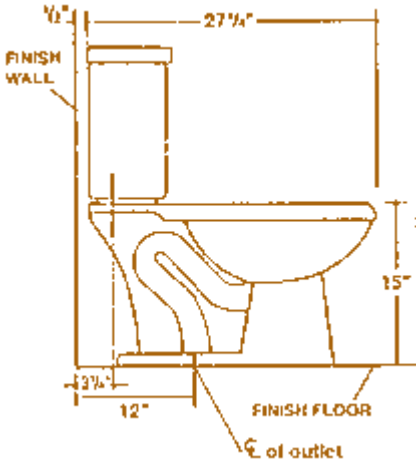
BULLETIN BOARD

PROSPECT ISLAND RESTORATION — What do dead-end sloughs and shoals have in common? Combined with a decent reach of shallow water, they're both favored habitat of the endangered Delta smelt and the focus of a 1,319 acre restoration of Prospect Island. The Army Corps will complete final plans for restoring the island this March, and shortly thereafter release them for public comment and environmental impact review. The mechanics involve excavating a channel down the center of the island, constructing new interior islands, stabilizing some levees and breaching others to restore tidal action. The finished product will offer smelt and winter-run chinook salmon 600 acres of open water, 550 acres of tule emergent marsh, and 100 acres of riparian zone. What's special about this project, according to the Corps' Leslie Lew, is that it's "pretty simple and sustainable." Unlike managing seasonal wetlands for waterfowl, "no one has to go out an remove flashboards and disk cattails on an ongoing basis," she says. Construction is set to begin in summer 1998. Contact: Leslie Lew (916)557-6929

ESTUARY PROJECTS POW-WOW — All 28 of the U.S. EPA's estuary projects, including San Francisco's, will converge on the Bay Area late this February to discuss what they have in common. The projects have been developing comprehensive, consensus-based plans to address the problems facing the nation's most significant bays, sounds and harbors. "The outcome of our meeting will be a report to the nation featuring issues and solutions common across the country, documenting aggregate non-federal dollars leveraged and hours donated by volunteers, and reviewing our success in engaging local communities in stewardship," says Richard Volk, Chair of the Association of National Estuary Programs. Volk says it will be the first time a reporting effort has drawn on input from people participating in the actual programs. The San Francisco program's Marcia Brockbank adds that the pow-wow and report is also "an attempt to muster support in the face of severely shrinking federal budgets." Contact: Marcia Brockbank (510)286-0780 *ARO*



SONOMA HIGH SELLS TOILETS — The Leadership class at Sonoma Valley High School has found a way to turn old porcelain into gold— and helped local residents save more than 10 million gallons of water a year. The class completed its second toilet replacement drive in November, distributing more than 800 ultra low-flow toilets and collecting the old ones, which were recycled into porcelain dust for use as roadbase. The school received $15 for every toilet returned for a total of approximately $12,000. The Sonoma Valley Water Agency picked up the tab for the toilets, while Cooperative Technologies & Services International managed the program for the Agency. According to Mary Lou Teske of CTSI, which has managed dozens of similar programs at high schools in Southern California, the Sonoma students' efforts have been one of the most successful so far. Combined with a similar drive last April, the Sonoma High students have distributed nearly 2,000 toilets, earning a total of $26,000. One final effort is planned for the fall of 1997, after which program organizers expect the market for new toilets to be saturated. Contact: Mary Lou Teske (707)585-3999 *CH*

DUCK CLUB PENALIZED — A "firm stance" on enforcement is what the S.F. Bay Commission's Kimberly Kim calls a February 6 settlement with the owners of the TuleRed property in Suisun Marsh. Without a Commission permit, the owners had burned and mowed vegetation, excavated a ditch, and created a new one-mile-long berm to isolate a wetland area from tidal action for duck hunting purposes. Under the settlement, the owners must fully restore the tidal wetland and pay $20,000. The settlement resolves one of the most significant environmental wetland violations to occur in recent years, according to Kim. Contact: Kimberly Kim (415)557-3686

INSIDE THE AGENCIES

NEW RULES FOR NATIONWIDES

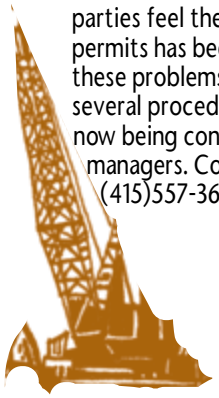
New state recommendations concerning water quality review of a suite of permits known as the "nationwides" will both increase and decrease government regulation of activities taking place in wetlands. The nationwides are Army Corps permits that largely govern small maintenance or construction projects considered to be of relatively minor impact on wetlands and thus worthy of expedited permitting. To further expedite things, the State Water Resources Control Board recently recommended that 17 of the Corps' nationwides be certified as complying with all state and federal water quality standards. However, the Board is also recommending that an additional 22 nationwides be denied certification or certified with conditions and restrictions. Activities covered under these permits will still require individual review by the Regional Boards.

The nationwides proposed for certification cover activities such as the scientific measurement, surveys, and placement of navigational aids. According to the Board's Marla Lafer, the new rules will allow regulators to concentrate on activities that have more potential to cause environmental damage.

Among those nationwides denied state certification is the controversial permit 26. Under 26, fills of up to ten acres were exempt from most reporting and application requirements, while fills of less than one acre did not require notice to the Corps at all. New federal rules announced by the Corps in January reduce the thresholds to three acres and one-third acre, respectively, and will eliminate permit 26 entirely in two years. The denial of state certification means that although Bay Area developers will be able to bypass Corps review for small projects, they will still need permission from the S.F. Regional Board. The Corps' nationwide revisions are available online at http://www.wetland.usace.mil. Contact: Marla Lafer (916) 657-0926 *CH*

ONE-STOP DREDGING REVIEW

Decreased redundancy and increased efficiency are the overall products of a six month-old, one-stop, multi-agency dredged material management office, concludes a new review by the S.F. Bay Commission. Though there's no actual "office," twice monthly meetings bringing together two federal and three state agencies have enabled regulators to jointly review and process some 62 maintenance dredging and disposal permit applications. Their goal is to find a more coordinated way to process permits while improving environmental review and protection. To this end, permit applicants can now fill out a single form (instead of one for each agency) and track progress through a single coordinator. The office is also working on a sampling and analysis template for use by project applicants and their labs. Despite improvements, the Commission review reveals several remaining problems, namely that many permits aren't being processed as fast as the office's interagency agreements dictate, that progress on permits is hard to track and access, and that concerned parties feel their ability to review permits has been reduced. To solve these problems, the review suggests several procedural reforms which are now being considered by agency managers. Contact: Eric Larson (415)557-3686 *ARO*



HOW I SEE IT

NATIONWIDE WETLAND PERMITS

BARBARA SALZMAN, MARIN AUDUBON SOCIETY

"The changes the Army Corps is making to the nationwides (see opposite) are definitely improvements, but you can't get away from the fact that the overall goal of the nationwide permit system is to streamline permitting for development in wetland areas. Many of the nationwides are just piecemealing wetlands away. The Corps has never provided adequate information to support the claim that there is no significant cumulative impact.

"The other problem with the nationwides is they've never taken into account special regional circumstances, such as the fact that California is a semi-arid state where we've already lost 90% of our wetlands. Activities that may be acceptable for states like Florida or Louisiana may be totally inappropriate here. Nationwide number 26 is absolutely the worst, so I am delighted that the Corps is reducing the acreages involved and eliminating it entirely in two years—I only wish they were eliminating it sooner.

"But 26 is only one nationwide. There are still others that are going to continue to cause significant adverse impacts to wetlands and aquatic sites. The second worst one is probably 29, which is designed for single family homes and allows for up to one-half acre of fill in non-tidal wetlands. It's unacceptable. There is nowhere in California where I feel it would be appropriate to build homes on wetlands.

"I also have problems with permit 13, which allows fill placement of up to 500 linear feet for bank stabilization. There is no requirement for mitigation, and there is no assurance that the same ends couldn't be accomplished without fill. The nationwide that allows for fill of up to one-third acre for road crossing is also a concern. There are many wetlands where a third of an acre is a major loss, and in other places, small incremental losses can add up to losses we really can't afford.

"Except for the nationwides that cover things like aids to navigation, scientific measurement devices, and mooring buoys, I think most of the activities covered by the nationwides should require individual permits."
CH

Barbara Salzman is a long-time Bay Area wetland activist who also serves on the Board of Friends of the Estuary.

NATURAL VENTURES

ARROWHEAD MARSH, BORN 1874?

Anthony Chabot liked to think of himself as a creator, and to be sure he was one of the prime builders of the East Bay's water system. But Christoper Richard suspects the "Water King" may also have played an inadvertent role in creating a popular wetland near the Oakland Airport.

While doing research on local watersheds for the Oakland Museum, Richard noticed that the marsh wasn't on the original 1850 U.S. Coastal Survey maps of San Leandro Bay. However, survey charts published in 1895 clearly showed the distinctive arrowhead shape pointing toward the east end of Alameda. A little historical investigation gave him a clue as to what might have happened.

In November 1874, Chabot was in the middle of constructing a 450 foot earthen dam across San Leandro Creek. Then a series of huge rainstorms hit, blowing out the 20 foot clay wall he had built. Richard theorizes that the estimated 20,000 cubic yards of clay was carried six miles down the bloated stream, creating a sandbar in the Bay. From there, organic and inorganic material began collecting, forming the 50 acre marsh.

Core sampling and other testing needs to be done before any conclusions can be reached, Richard says. He's only done "very rudimentary" field work so far, but hopes to do more sophisticated analyses soon.

"It's a testable idea," says wetland scientist Josh Collins of the S.F. Estuary Institute, adding that channelization patterns indicate the marsh probably was created by a "sudden localized event."

Could Arrowhead Marsh provide an example for modern day wetlands restorers? Richard thinks so. "Here's an area where man did nothing more than dump a bunch of dirt, then natural forces did their magic and made us a nice little marsh," he says. "We're probably better off following the lessons learned here — just dump the stuff and let nature define what the site's going to look like."

Contact: Christopher Richard (510)238-2200 *O'B*

BAIR ISLAND SALE

As a result of the surprise agreement by Redwood Shores Properties to sell Bair Island to Peninsula Open Space Trust for $15 million, the billboard strewn eyesore will soon be transformed into thriving wetland habitat. After years of pleas by environmentalists, Redwood Shores finally agreed to sell because the Trust presented a firm offer and cash in hand, according to a company spokesman. The trust will eventually transfer the 1,626 acre property—home to the endangered California clapper rail, California least tern and the salt marsh harvest mouse, among other threatened and endangered species — to U.S. Fish & Wildlife for inclusion in the Don Edwards National Wildlife Refuge. The property has been on the refuge's priority list for acquisition since 1988. *CH*

RESOURCE REVIEW

RUNOFF RESCUE

Paving driveways and patios with permeable materials, installing dry wells or cisterns to store and slowly release rainwater, and varying street widths according to traffic usage are among the stormwater protection strategies suggested in *Start at the Source: Residential Site Planning and Design Guidance Manual for Stormwater Quality Protection*, a user-friendly tool for municipal planners and private developers from the Bay Area Stormwater Management Agencies Association.

"We wanted to illustrate site design principles and techniques that protect stormwater," say BASMAA's Geoff Brousseau, noting that these principles are already used extensively in other parts of the country. "We don't use them in the Bay Area because we're not used to it, but we hope the manual will spur planners and designers to more creativity," he says.

Based on the premise that the best opportunities to reduce nonpoint source pollution and erosion occur in the planning and design phase of a project, the guide offers a menu of stormwater protection techniques from which planners and developers can choose those appropriate to a particular site and project. The guide places its recommendations in context by providing simple explanations of the hydrologic cycle, Clean Water Act requirements and the emergence of impervious land coverage as an environmental indicator. It also includes case studies reflecting the range of geographical, hydrological and market conditions found in the Bay Area, and makes effective use of diagrams and drawings to illustrate points made in the text.

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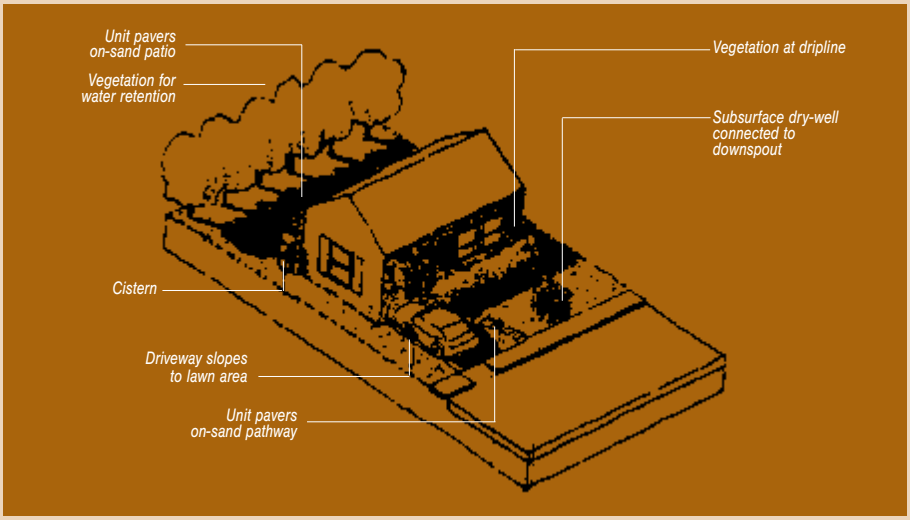
STORMWATER MANAGEMENT ON A SMALL SINGLE LOT



Source: BASMAA, Tom Richman & Associates

STEELHEAD CONTINUED

To make things even gnarlier, a geneticist named Jennifer Nielsen came up with startling results after receiving NASA funding to look at what the steelhead's genetic biodiversity could reveal about global climate change. Nielsen found that genetic diversity was greater in the southern population of steelhead than in the central and northern populations. Because Nielsen was not looking at adaptation but at genetic drift, the changes in genomes that take place randomly over time, this meant that the southern steelhead had been around longer. To Nielsen, it also suggested that, contrary to received scientific opinion at the time, steelhead migrated south as the Ice Age progressed, only returning to the Pacific Coast after the ice caps melted.

"The Sea of Cortez is well-documented as a base or divergence point for an awful lot of fishes during the Pleistocene," Nielsen says. "I still agree that steelhead (which until 1989 or so were once erroneously thought to be offshoots of Atlantic salmon) are part of the Pacific salmon family but there's no reason they couldn't have had a separate and different path during the Pleistocene with a southern refugia."

Nielsen is continuing to research steelhead, including a study of correlations between southern steelhead and southwestern species of Gila trout, Apache trout and Mexican trout, which are found in inland areas surrounding the Sea of Cortez.

For political purposes, though, Nielsen's initial research, completed in 1994, was enough to help propel endangered species protection into a new era. The listing proposal for steelhead reflects the diversity of the fish by utilizing a new concept called "evolutionarily significant units" or ESUs. Robin Waples, head of conservation biology for the National Marine Fisheries Service (NMFS) at the Northwest Fisheries Science Center in Seattle, is credited with developing this concept.

According to Waples, the idea grew out of a controversial provision in the Endangered Species Act that protects distinct vertebrate populations — an even finer distinction than sub-species. This provision was almost dropped from the Endangered Species Act in 1979. Instead of jettisoning it, Congress instructed the Secretaries of Interior and Commerce to apply the provision sparingly.

"There was a lot of uncertainty over what qualified as a population under the Endangered Species Act," Waples says. "Species can be vague. Sub-species can be even vaguer. For populations, that's a whole order of magnitude more vague.

"Some guy can say, 'There's 50 steelhead on my grandfather's farm. They've been there for 50 years. They must be a distinct population.' Other people say salmon have been radiating out since the Ice Age. Most people are in between. But U.S. Fish & Wildlife, which has made most of the determinations regarding distinct populations under the ESA, didn't have consistent guidelines. Sometimes they turned down populations that seemed pretty distinct."

In 1990, Fish & Wildlife held a workshop to formulate population guidelines. The term "evolutionarily significant unit" was bandied about, but nobody formalized the definition or developed firm guidelines after the conference. Waples decided to go ahead and develop the concept to help solve the problem of protecting anadromous fish. He used state-

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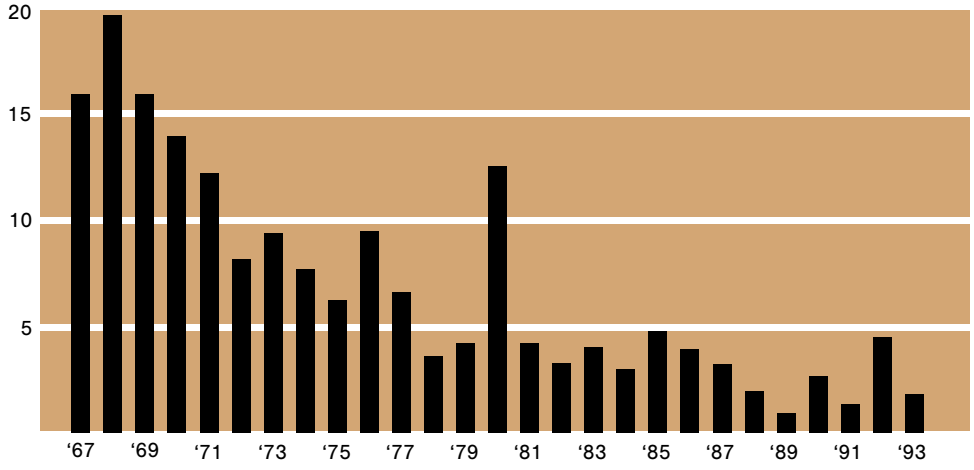
ADULT STEELHEAD COUNTS AT RED BLUFF DIVERSION DAM ON THE SACRAMENTO RIVER (IN THOUSANDS)



THE MONITOR

DIOXIN DEVELOPMENTS

Ever since birds, cats, dogs and even horses began dropping dead in Times Beach, Missouri, 25 years ago, the word "dioxin" has set off alarm bells. Now, after Bay Area studies found dioxin in water and fish tissues, the S.F. Regional Board is starting to take a hard look at dioxin in our waterways. A workshop to brief Board members on the latest dioxin information is planned for this spring. In the meantime, Board staff are designing a study to address some of the many questions about dioxin. Part of the work will be done through the S.F. Estuary Institute's Regional Monitoring Program, which has allocated $7,000 of its 1997 budget to launch a dioxin study program for Bay waters.

Most scientists agree that dioxin — the term refers to a family of chemical compounds with more than 75 variants—has been linked to a range of cancers, endocrine effects, and other disorders. S.F. Estuary Institute scientist Jay Davis says "there is considerable debate over the risk dioxin poses to people," but notes that "in laboratory studies dioxin is extremely toxic to animals. On the basis of these studies, dioxin is considered one of the most toxic chemicals known." The final version of the most comprehensive document on the subject, a U.S.EPA dioxin reassessment, is due to be released this summer. The most recent draft of the assessment called dioxin a "probable" human carcinogen.

"At the national level there are a lot of questions about dioxin," says the Board's Kim Taylor "How prevalent is it? What is the post industrial background level? What are the sources? Are these sources controllable? We want to take a close look at dioxin to try and develop more informed policy alternatives." During the 1995-96 wet season, the Board tested stormwater runoff from oil refineries and municipalities throughout the Bay and found dioxin in almost all samples.

"There is a landslide of new evidence that dioxins are a much greater threat than anyone thought," says Greg Karras of Communities for a Better Environment, who also notes that thousands of people regularly consume fish caught in the Bay. One of the Board's goals is to determine "who is affected and how to communicate

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DIOXIN CONT'D FROM PAGE 5

the risks to subsistence fishermen," says Taylor.

In a 1994 Board study of fish tissues, 16 of 19 samples exceeded screening values established by the study using U.S. EPA methodologies. The findings indicated a potential health risk to humans. However, the Board's Karen Taberski says all the dioxin measurements were within background levels found nationwide by the EPA.

Another major goal of the new Board study is to identify sources and pathways. Taylor and others believe that most dioxin enters the Bay through the "atmospheric deposition". Each type of dioxin has a specific chemical "fingerprint," which the Board hopes will allow specific sources to be traced. "We're going to test Bay water and try to identify the sources that way," says Taylor.

At the Board's request, the Bay Area Air Quality Management District compiled an inventory of regional sources of airborne dioxin. The District's Brian Bateman estimates that 85 percent of the Bay Area's dioxin emissions are from vehicles and residential wood combustion.

But according to Karras, "We already know exactly what dozens of dioxin sources are." Karras cites oil refineries, medical waste incinerators, diesel emissions and sewage plants as examples. "The Board is still being timid about this issue. The real question is, what are we going to do to eliminate dioxin production and release?" Refineries declined to comment.

A question also remains as to whether there's anything to be done about the dioxin already in our sediments and soils, which Bateman says can persist for up to 100 years. "Dioxin can be reintroduced from these reservoirs into the environmental media by dredging, storms, fires or other events," he says. "A major area of uncertainty is how much of the dioxin we see is from current emissions and how much is historic. Even if we shut off all emissions we may still have dioxin in the environment for many, many years." Contact: Kim Taylor (510)286-3821 CH

EPA Draft Reassessment: www.epa.gov/docs/SAB/Reports/Dioxin/dioxin.txt.html

STEELHEAD CONTINUED

of-the-art genetic research, ecological science, and old-fashioned game warden expertise to put together a workable definition of distinct populations. NMFS began applying this definition in 1991 to petitions for listing various Pacific Coast Chinook, coho and sokeye salmon populations. But Waples says the steelhead application is the most far-ranging — covering a lot more of California — and complex yet. Nielsen's research, which focused on extremely subtle genetic distinctions that determined steelhead's location over thousands of years, was only a part of what Waples used in his attempt to provide a framework for dealing with steelhead.

"What we're trying to identify is groups of populations that are important in an evolutionary sense, but it's not tied to any genetic method," says Waples. "There's a lot of information that's indirect, hard to quantify, but nevertheless, gives us a lot of insight."

Run timing, life history differences, spawning times, fish size and shape, age structure, environment and ecology all play roles in deciding what constitutes an ESU. Some critics charge that politics have played a role as well. Peter Moyle, professor of fisheries at the University of California at Davis, criticized the use of the whole concept of ESUs as a bow to political pressure from opponents of the ESA.

"This ESU business is a real mess," Moyle told a reporter for *Western Outdoors* magazine. "NMFS was under a lot of pressure to be consistent when dealing with salmonid stocks. There was Congressional pressure not to list every little population."

Nevertheless, Moyle says there are several populations that can clearly be considered as distinct, including fish on the upper Sacramento, on Mill and Deer Creeks, and south of Point Conception.

Waples defends the ESU concept as an alternative to saving every stream and pond where steelhead can be found. This would include "hundreds or thousands of populations," says Waples, who called such an undertaking a "nightmare," and "completely unworkable under the ESA."

"We're trying to reach some sort of balance," he says. "If we save ESUs that are pretty good chunks of genetic diversity then the species will be viable as a whole."

Diane Valantine of the Oregon Natural Resources Council, a co-plaintiff in a 1994 lawsuit to force NMFS to meet deadlines for listing steelhead, says she isn't interested in quibbling about ESUs. With 95 percent of steelhead habitat in the Central Valley gone and serious problems in many other parts of its range, she's more concerned that the agency will ask for a six-month extension of the listing deadline. Not long ago, NMFS gave itself a six-month extension for presenting its plan to protect the endangered coho salmon.

"It has taken litigation at every turn to make these things happen," says Valantine. "We look to the Clinton administration for that. They're really dropping the ball on salmon protection.

"You have to wonder what they're thinking," Valantine adds. "Protecting salmon and steelhead is a wonderful opportunity for the federal government to show how the ESA works with states and private entities, and how it helps protect jobs and communities. If they're trying to show ESA successes, this is not one to run away from. There are good things going on at the state level to augment federal actions."

The Coastal Commission's Capelli says that the Clinton administration may feel pressure to reauthorize the act because the longer a program goes without formal reauthorization, the lower it is on the funding priority list. As the act has languished without reauthorization, funding levels have dropped below what they were in the Bush administration. History has shown that without adequate funding for implementation, the ESA has a marked tendency to irritate landowners. The downward spiral from there is obvious.

The effort to save steelhead may be new, but the problems with making it a reality are old. As citizen comments pour in over the next months, steelhead biologists will have a chance to see if, once again, in the words of geneticist Jennifer Nielsen, "the voice of the animal gets lost in the politics."

Contacts: Mark Capelli (805)641-0142; Jennifer Nielsen (408)655-6233; Diane Valantine (503)283-6343; and Robin Waples (206)860-3254 *SZ*

PLACES TO GO & THINGS TO DO

WORKSHOPS & SEMINARS

Kids in Creeks
SAT · 3/1, 3/8, 3/15, 3/22 · 9 AM-4:30 PM
Topic: Workshops prepare educators to teach about creek ecology and restoration.
Sponsors: S.F. Estuary Institute, Alameda Countywide Clean Water Program, Contra Costa Clean Water Program, City of Concord, Presley Companies
East Bay locations
(510) 231-5783

Start at the Source Workshops
TUES, WED · 3/11, 4/2
Topic: Residential Site Planning and Design Guidance Manual
Sponsor: Bay Area Stormwater Management Agencies Association
Various locations. Additional dates TBA.
(510) 286-0615

Drinking Water Workshop
THURS · 3/13
Topic: Methyl Tertiary Butyl Ether, (MTBE) a gasoline additive used to meet some Clean Air Act requirements.
Sponsor: Assoc. of California Water Agencies
Location: Ontario Hilton
(916) 441-4545

Watershed Workshop
THURS · 3/20 · 8:00 AM-5:00 PM
Topic: Understanding Groundwater in a Healthy Watershed
Location: California State University, Chico
Sponsor: Sacramento River Watershed Prog.
(916) 255-3111 or (916) 893-5243

Erosion and Sediment Control Workshop
MON, TUES · 3/24, 3/25 · 8 AM-5 PM
Sponsor: Association of Bay Area Governments
Location: Metro Center, Oakland
(510)464-7964

Water Use Efficiency, Storage and Conveyance Workshop
THURS · 3/20 · 8:30 AM-4 PM
Sponsor: CALFED
Location: Sacramento Convention Center
(916) 654-9924

State of the South Bay Symposium
FRI · 3/21 · 8:30 AM-5:30 PM
Topic: Progress of local and regional initiatives to protect the South Bay; pollution prevention benefits to be derived from land use decisions and transportation alternatives.
Sponsor: Silicon Valley Pollution Prevention Ctr
Location: Hyatt San Jose
(408) 291-0131

Ecosystem Restoration Workshop
TUES · 4/8 · 9 AM-5 PM
Location: Beverly Garland Hotel, Sacramento
Sponsor: CALFED
(916) 654-9924

California Watershed Symposium
WED-FRI · 4/23-4/25
Topic: "Whose Watershed Is It? The Management Challenge"
Sponsor: U.S. Forest Service, others
Location: Sacramento Hilton
(800) 738-8733

HANDS ON

Berkeley Bay Festival
SAT · 4.12 · 11 AM-4 PM
Topic: Bay-related educational and recreational activities.
Sponsor: Save the Bay
Location: Berkeley Marina
(510) 452-9261

MEETINGS & HEARINGS

CALFED Bay-Delta Program
WED, THURS · 3/12, 4/10
Topic: Bay-Delta Advisory Council meeting
Location: Sacramento, San Francisco
(916) 654-9924

San Francisco Bay Joint Venture
THURS · 3/13 · 1 PM-4 PM
Topic: Management Board meeting
Location: Preservation Park, Oakland
(510) 286-6767

NOW IN PRINT

Draft National Sediment Quality Survey: Extent and Severity of Sediment Contamination in Surface Waters of U.S., August 1996
U.S. EPA, EPA-823-D-96-002
Copies from (513) 569-7186 (fax)

Start at the Source: Residential Site Planning & Design Guidance Manual for Stormwater Quality Protection
Bay Area Stormwater Management Agencies Association
Copies from (510) 286-0615

Regional Monitoring Program Report 1995
S.F. Estuary Institute
Copies from (510) 231-9539

HOUSE WORK

NEW YEAR'S FELICITATIONS

In 1996, ESTUARY's search for the good story — not to mention someone who could talk intelligently about it — was greatly aided by its editorial board. Consulted every other month, these board members are vital to keeping ESTUARY in touch with the many different voices, interests, points of view and programs influencing the conservation and management of the Bay-Delta ecosystem.

THANK YOU 1996 BOARD

Gary Bobker, *Bay Institute*; Marcia Brockbank, *S.F. Estuary Project*; Michael Carlin, *S.F. Bay Regional Water Quality Control Board*; Arthur Feinstein, *Audubon Society*; Bruce Herbold, *U.S. Environmental Protection Agency*; Ellen Johnck, *Bay Planning Coalition*; Judy Kelly, *CALFED*; Jill Singleton, *Cargill*; Margaret Johnston, *S.F. Estuary Institute*; Will Travis, *S.F. Bay Conservation and Development Commission*; and Leo Winternitz, *Department of Water Resources*.

CHANGES AFOOT

At our annual board meeting this January, we discussed ways to improve ESTUARY, reach more readers, and make it a more useful and valuable publication in the future. If you have comments on this front, please send them to Ariel Rubissow Okamoto, Managing Editor, 465 Chestnut Street, San Francisco, CA 94133. Or fill out the reader survey in the last issue! All input welcome.

CONTINUED STORIES

RAIL CONTINUED

"There is no way the rails can outfly them."

While Evens is happy to see the black rail be noticed at last, he is concerned that restoration efforts take into account the rail's sensitivity to changes in its habitat, particularly alterations to freshwater inflows. "The rails rely on a whole suite of factors," he says. "If you change any one of them, you can alter the whole population within an area." Evens explains that because elevations above the mean high water line tend to be a little less saline, they support a food web of terrestrial organisms which the rails rely on. "It's difficult to keep the elevations correct," says Evens. "If you're creating more sites overall, its got to be good, but to ensure that black rails are going to colonize a site, you'd almost have to micro-manage it." Contact: Jules Evens (415)663-1148 *LOV*

RESOURCE REVIEW CONTINUED

Drainage systems are a particular focus of the guide, which notes that conventional systems are designed only for flood control during large, infrequent storms. Since most damage to streams and water quality is caused by small, frequent storms, the guide emphasizes ways of integrating traditional flood control systems with strategies for everyday stormwater quality control. Throughout, the guide emphasizes that the best stormwater management system will rely on a few simple techniques, applied repeatedly over an entire project or site.

In a foreword, Tom Mumley of the S.F. Regional Board says his agency will use the manual to gauge the efforts of municipal stormwater programs to implement their NPDES stormwater permits and to review developers efforts to reduce the impact of proposed projects.

The manuals will be distributed at a series of workshops to be held this spring around the Bay Area (see calendar). Contact: Geoff Brousseau (510)286-0615 *CH*

ESTUARY

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