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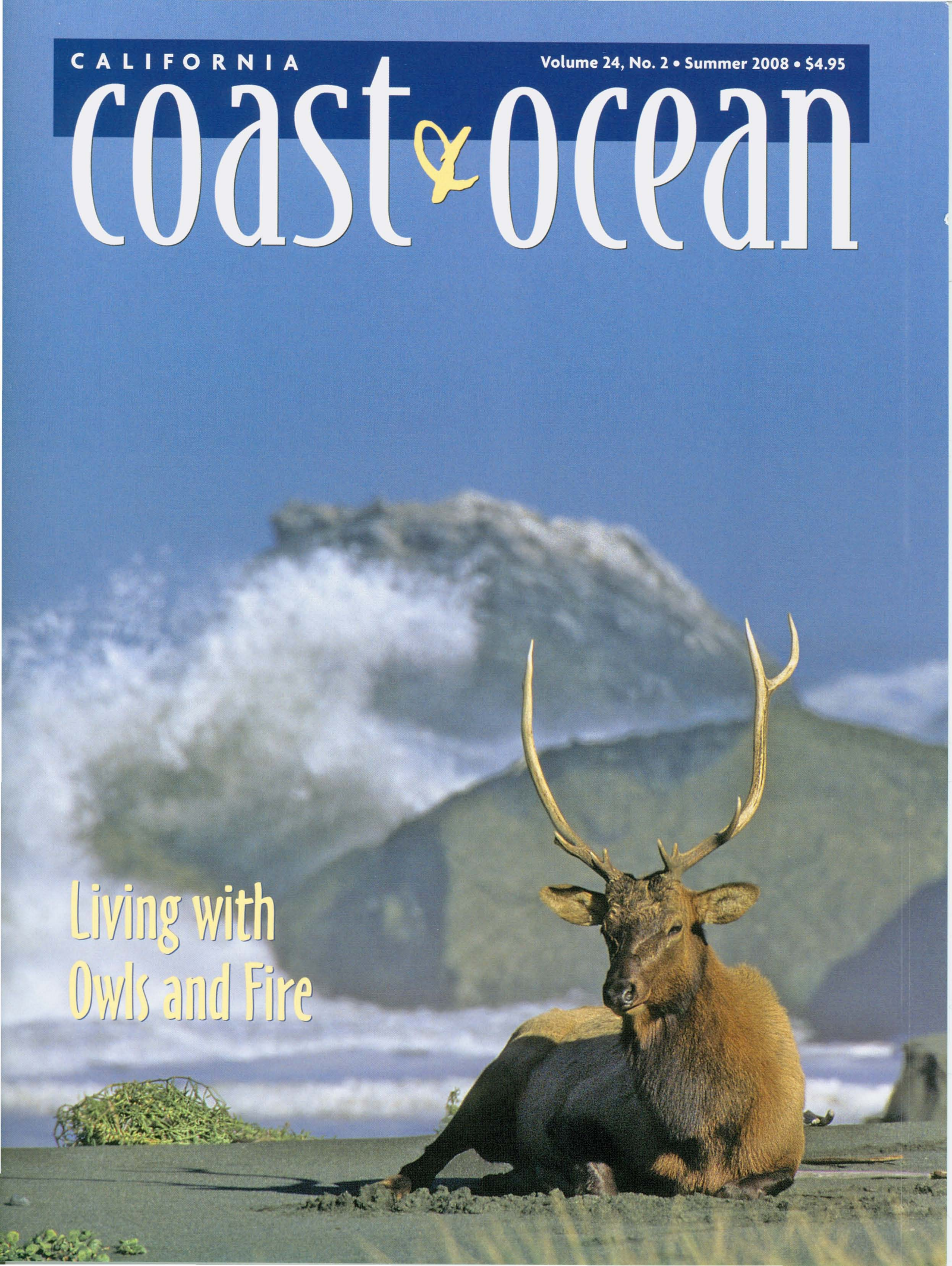

Living with Owls and Fire

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Coastal Conservancy

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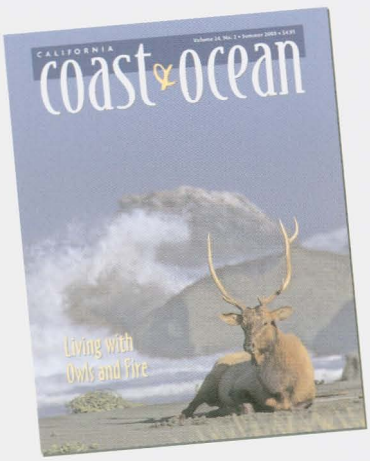

Cover photo: Roosevelt elk near Gold Bluffs Beach, Redwood National and State Parks, by Alan Justice

Inside Back Cover: Big tarweed *(Blepharizonia plumosa)* by Robert E. Preston

Back Cover: Ruth Parsley, an intern at the Golden Gate Raptor Observatory, prepares to release a red-tailed hawk in the Marin Headlands (see p. 39), by George Eade, 2007.

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Marching past the Parade Grounds at the San Francisco Presidio, May 1926

Back to Basics

ONE BASIC LESSON TO BE learned while growing up is that there will be trouble if you don't consider the potential consequences of your actions. Say you drew an excellent portrait of the mean old neighbor lady on the sidewalk in front of her house, forgetting in the heat of creative endeavor that she's usually at her window, looking for things to complain about.

It's likely that soon your father or mother yelled: *What* were you thinking? You're in trouble. There's a price to pay. Maybe it was worth it. Maybe the only thing you regret as you erase your art work is that you used indelible markers. Next time you'll be more careful, think ahead.

A basic skill most of us acquire is how to recognize things that belong together and to put them together. Some learn that only enough to get good grades on multiple-choice tests. Others come to see connections between the chicken on the table and the factory farm where underpaid workers cut up that bird, their hands hurting with tendinitis.

As we mature toward wisdom, we may also notice that "out of sight, out of mind" doesn't work. Everything we try to destroy or banish turns up again, and sometimes it bites us.

Yet as a society we often ignore these basic precepts. Almost all our troubles grow from failure to consider in full the effects of personal, corporate, and government actions.

The young people who converted old school buses to run on fast-food restaurant grease had a good idea. But it's a terrible leap from there to growing subsidized corn for biofuel. Surely it was foreseeable that the price of food would rise around the world, more people would starve, and the destruction of rainforests in Brazil would accelerate. Why wasn't that taken into account?

Failure to examine the effects of new products beyond their intended uses keeps creating new problems. It's more than a half-century since Rachel Carson's *Silent Spring*, yet new chemical substances continue to be marketed in ill-considered ways.

As a society we keep making the same mistake. We grab an idea—maybe a good one, but insufficiently examined—and run with it, not seeing that it's only a bit of some larger whole. Then we trip over what we've ignored. An example is the situation described on page 27 in "Rx Quandary." Billions of dollars are spent on developing and selling prescription drugs, without considering what happens after people buy them. Why are Americans taking so many narcotics—mostly prescribed? Why do so many young people turn to this form of self-destruction? Shouldn't the drug control agencies consider what is missing in so many young lives?

Tangled up in thinking about the "Rx Quandary," I stumbled upon a great remedy for stress and confusion on Labor Day weekend. In front of San Francisco's City Hall, on the formal plaza traditionally used for protests and demonstrations, an amazing Victory Garden had materialized. It was one of several parts of the first-ever Slow Food Nation festival, which brought together some 60,000 people.

Huge mounds of rich, dark soil had been piled atop the concrete and beautifully planted with a wide variety of vegetables. Chard, kale, beets, tomatoes, corn, and other healthy edibles, selected for harmony in shape and color, were glowing with health and vigor. Long beans supported by split-bamboo pyramids reached for the sky. Sunflowers smiled above the crowd.

The garden was enclosed by sinuous low straw-bale walls and threaded by winding paths. Outside it, booths offered farm products to take home, compost and worm castings so you could grow your own, and wholesome food to enjoy on the spot.

The aroma of spicy pork on a grill drew me to a booth where Italian sausage sandwiches with red peppers and onions were being dispensed. The pork came from a farm in Myrtle, Missouri, where pigs get to do what pigs enjoy, and no antibiotics whatsoever are used.

I signed the Declaration for Healthy Food and Agriculture, and then a statement of support for State Proposition 2, which would prohibit the confining of calves, breeding pigs, and hens in tiny cages barely larger than their bodies. (That's long been illegal in Europe.) Then I moved on to a booth where Ben Chan, public relations officer for the San Francisco Public Utilities Commission, was enthusiasticaly dispensing tap water—water fresh from Hetch Hetchy reservoir—in cups made of corn. Delicious.

Slow Foods started in Italy in 1989, in resistance to fast food and fast life, but it has matured and grown a lot since then. This was far more than a celebration of simple foods and the pleasures of growing, cooking, and eating them. Here the entire cycle of our food chain was being considered.

Before leaving, I stopped at a stall selling shiitake mushrooms, $4 for a basket. I usually buy them for $3 at the big City Farmers Market—which started during World War II, when the only other Victory Garden was created in front of City Hall—but the grower I buy from, John Garroni, also has a stand on Sundays a block away, at a farmers' market started many years ago by the American Friends Service Committee. So I walked over and found him. "Why are you not at the Slow Foods festival?" I asked. He laughed. His mushrooms were there—he picked the good-looking ones for that—but he was at his stand for his regular customers. His "uglies" were $3.

Garroni's parents came from Italy after World War II, grew pears, apricots, and other crops in Santa Clara County, and sold them at the City Market. John got into mushroom cultivation. "Have you tried these?" he asked, pointing to some crinkly white fungi. I hadn't. "Here," he said, handing me a paper bag. It was a gift to a long-time customer. What a good feeling. I walked back through the square. The nation is in big trouble, but great stuff has been growing in our communities all along. We only need to look.

EILEEN ECKLUND

—Rasa Gustaitis

Sustainable Forestry—With Owls and Fire

WHAT DOES "SUSTAINABLE FORESTRY" MEAN? To get beyond abstractions, *Coast & Ocean* decided to visit the Salmon Creek Forest in Mendocino County, where the Conservation Fund is attempting some conscientious timber harvesting while restoring a 4,300-acre forest that has been damaged by years of commercial logging. The presence of spotted owls and other endangered species adds to the challenge.

Anne Canright went into the forest with owl biologist Mike Stephens (see overleaf), while Eileen Ecklund was to watch a timber harvest. But nature intervened. A few nights before she headed out, lightning sparked over 2,000 fires in parched northern and central California and set trees and brush aflame in the Salmon Creek Forest. The Department of Forestry and Fire Protection was overwhelmed, so the people in rural Mendocino County had to do much of the firefighting themselves. Eileen's report, "Living With Fire," starts on p. 11.

Outside the region, most of the northern California fires were barely noticed—except for their smoke, which caused eyes to burn and voices to turn hoarse as far away as the San Francisco Bay Area. The media spotlight fell on Big Sur, Paradise, and later on the Yosemite area, where many homes were threatened.

Coming at the beginning of the summer fire season, in this time of global warming and diminishing water supplies, this huge outburst of wildfires invites reflection. Fire is a natural phenomenon that can actually benefit healthy, intact forests—forests such as the Conservation Fund and others are hoping to restore and sustain. It's humans who make fires into disasters.

The concept of sustainable forestry is gaining ground around the United States. The Conservation Fund is by no means alone in attempting it. In the West, the Pacific Forest Trust manages 50,000 acres in California, Oregon, and Washington, and works with landowners to help them move toward sustainable practices. The Redwood Forest Foundation, Inc., recently bought 50,000 acres of forest north of Fort Bragg to restore and harvest sustainably. On July 30, the Mendocino Redwood Company took legal possession of 210,000 acres of Pacific Lumber's Humboldt County lands after that company went bankrupt. Mendocino Redwood, which already owns almost 229,000 acres of forestland in northern California, is also committed to proving that we can have healthy forests and timber, too.

A spotted owl in flight

Into the Woods with Spotted Owls

MIKE STEPHENS KNOWS THEM WELL

STORY AND PHOTOGRAPHS BY ANNE CANRIGHT

MIKE STEPHENS IS A BEAR of a man—appropriately enough, for someone who spends much of his time in the redwood forests of Mendocino County. Also like a bear, he prowls those woods mainly at night, alert to the subtlest of sounds. In particular, he is listening for hoots and whistles. Stephens is a conservation biologist, contracted by the nonprofit Conservation Fund to monitor spotted owl populations on several tracts of land the Fund has purchased in the past several years. This May I went to Mendocino to spend an evening with him—hoping, of course, to get a glimpse of these rare birds.

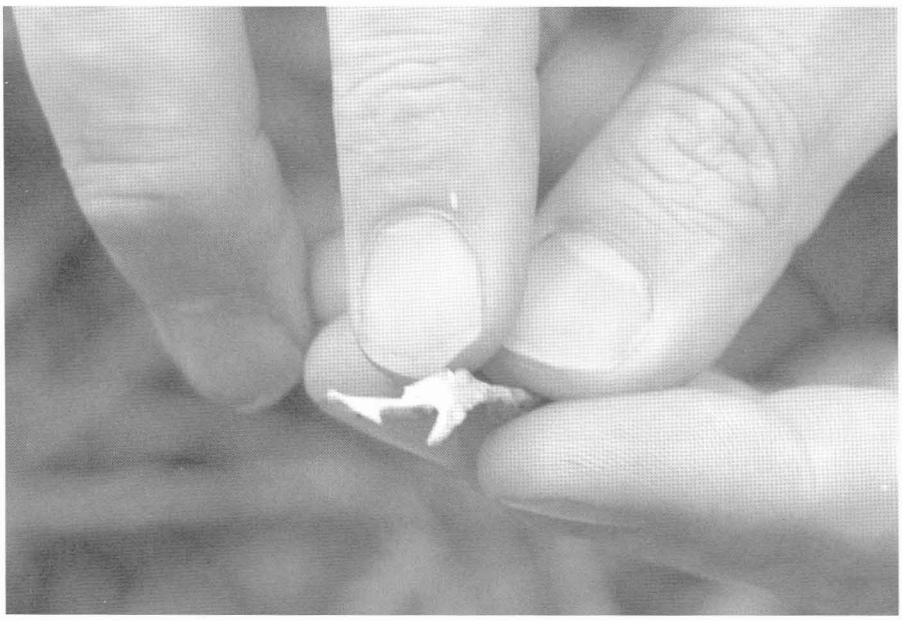
You will recall the war the spotted owl sparked in the late 1980s, when the U.S. Fish and Wildlife Service proposed listing the bird as threatened throughout its range (northern California into Washington) due to loss of old-growth habitat, primarily as a result of timber harvesting. Listing occurred in June 1990, and in 1991 all logging in national forests ceased by court order. The loss of 30,000 of 168,000 jobs was predicted, and in short order stickers reading I LIKE SPOTTED OWLS—FRIED and KILL A SPOTTED OWL—SAVE A LOGGER adorned pickup bumpers, and plastic spotted owls were hung in effigy in Oregon sawmills.

In fact, by the 1980s the timber industry was already in big trouble. Between 1947 and 1964, according to a University of Wisconsin study published in 1988, logging jobs had declined in number by 90 percent in the Pacific Northwest, as old-growth forests dwindled and automation became the rule. While individual loggers and small sawmill operators decried what they considered misguided and excessive environmental protection, larger timber interests saw the writing on the wall: the industry needed to adapt and change. The industry sponsored the Sustainable Forestry Initiative, promoting best management practices that dovetail with stricter regulatory requirements. Large commercial timber companies also continued to sell off forest lands.

Some of the divested lands have "been fragmented into small holdings for single-family homes or weekend getaways," according to the Conservation Fund website. Most acreage, however, has been "sold to timber investment or real estate investment companies, whose harvest practices are often geared toward short-term profit as opposed to long-term sustainable management typically employed by commercial forest products companies." In 2004, to permanently protect an especially sensitive natural area in Mendocino County, the Conservation Fund went out on a huge (or, depending on how you look at it, incredibly spindly) financial limb, purchasing the 24,000-acre Garcia River Forest from Coastal Forestlands Ltd. for $18 million, in partnership with the Coastal Conservancy, Wildlife Conservation Board, and Nature Conservancy. Two years later they upped the ante, paying Hawthorn Timber Company LLC and the Campbell Group $48.5 million for 16,000 acres of redwood and Douglas fir forests surrounding Big River and Salmon Creek—home to coho salmon, steelhead trout, and northern spotted owls.

The Owl Guy

To pay off the large mortgage on these precious lands, the Fund needs to harvest and sell their timber—and they wish to do so sustainably, with a strict eye to such long-term ecological goals as



enhanced water quality, wildlife protection, and improved wildlife habitat. For that to happen, they needed wildlife consultants to census and monitor the more sensitive populations of flora and fauna. Enter (among a small army of others) Mike Stephens, "owl guy."

I met Mike at three o'clock in the afternoon at his tiny house in Albion. He was loading his well-used pickup with the equipment he'd need for the night's work, including a roomy, many-pocketed vest, headlamp, GPS, and loudspeaker system. Crumpled, half-finished bags of snack food littered the truck bed and cab. We headed inland on Albion Ridge Road through the pygmy forest, then turned right onto Elliot Road—one entrance to the Fund's 4,500-acre Salmon Creek property. "This parcel," said Mike, "has the highest density of spotted owls I've ever worked on: there's between seven and eight pairs, which translates to a territory every 650 acres or so." Territories in parcels further inland, he explained, are larger, perhaps 1,000 acres, thanks to drier conditions and a shift from redwoods and firs, which the owls prefer, to oaks and madrones. In the Garcia River parcel to the south, which has several 2,000-foot peaks and many steep-sided canyons, you may get an owl pair only every 4,200 acres or so.

Surveying takes place from early March into June and July, but the focus is on May, the middle of the breeding season. "The birds are most territorial then," said Mike, "and if they're nesting especially, they're in a desperate search for food." The female lays one to three eggs, usually in late March, then she sits on the eggs for a month, getting a half-hour to 45-minute break, max, every day. The male, meanwhile, has to feed himself and the female, and when the eggs hatch, he must provide for the chicks—"eating machines"—as well. Small rodents are their favored fare, especially the dusky-footed woodrat, though they will also take small birds, bats, insects, and sometimes lizards.

Mike parked near a towering, fire-scarred redwood snag, left over from an old round of logging. "It probably had some kind of deformity," he remarked. "Amazingly, the worst trees for the sawmill end up being the best ones for wildlife. This tree probably won't be used by spotted owls for a while because the cavities toward the top are fairly exposed. When the trees around it get bigger and provide a canopy, then you have your classic spotted owl nesting tree." In the meantime, the tree provides habitat for bats, wood-

peckers, Vaux's swifts, purple martins, and smaller saw-whet, screech, or pygmy owls.

"How big is a spotted owl?" I asked as we made our way along an overgrown skid trail.

"About 19 inches," he said. "You'll see—any minute now. In fact, look there," and he pointed midway up a slender Douglas fir tree. There, staring curiously at us (if I may anthropomorphize—and with owls, it's almost impossible not to), was a compact owl, complete with spots. "That's the male; he's a little smaller than the female. And do you hear that whistling sound? That's the contact call. It's the female asking the male, 'What's going on? Who are these people?'"

A pocket on the back of Mike's vest is extra-large—just the right size for a plastic box full of sawdust and a handful of pet store mice. Essential equipment for an owl surveyor. "What I do is, I mimic their call, and the male will usually respond, telling me, 'This territory's already occupied—get out of here and don't come back.' If I continue to call, he will often come over to check me out. But spotted owls, unlike most other owls, aren't really intimidated by people, and if you present them with live prey, the fear motivator is overridden by the food motivator. That's how we determine if they're nesting or not"—by following the male as he takes the prey back to his mate or their voracious young.

He pulled a mouse out of the box, placed it on the back of his hand, and held his arm up in the air. Within a minute the owl's eyes had locked on the jittery little animal, then in silence he swooped off his branch, nabbed the mouse neatly in his talons, and soared midway up a redwood tree off to our right. "The male's going to take it to the nest—if the female lets him. You can tell if a pair has a good relationship, if he's allowed to feed the young." Evidently this pair was still working things out, because she immediately flew over and took the mouse, disappearing with it into the nest—a cavity on the backside of an adjacent snag.

Mike explained that this strategy had led him to the nest in the first place, about a month before. "This happens to be a tree that they've used in the past; but where we parked the car—as soon as I got out and got my stuff together, there he'd be, waiting for me. So I gave him a few mice, and eventually he delivered one to the female. It took three or four tries." The male was banded in 1994; he's been in the area a long time. "We're still learning about nest-site fidelity, but one thing we do know is that the pair doesn't really come back—it's more that they don't leave; they don't migrate, at least not here on the coast."

Finding the nest is the most important part of the survey work, for it will help guide development of a timber harvest plan (THP). "Now you have a tree: it's a dot on the map, and foresters know that, okay, 500 feet out, there's no cutting; 1,000 feet out from the tree, there's possibly a no-cut; seven-tenths of a mile out from the tree, you have to have so many acres in varying types of habitat: this nesting-roosting type of habitat, and also foraging habitat."

The Conservation Fund, though, wants to know how productive the birds are as well. "What could happen is, say we get a torrential downpour, which could cause the nestlings to die. So we want to come back roughly the first week of June and see if the young have fledged the nest—have actually left." The Fund is also committed to continuing with long-term surveys on land that has been selectively logged, to see whether the THPs they adopt are giving the birds what they need or are causing unanticipated problems.

Mike took a mouse and handed it to me by the tail. It squeaked softly. "Go ahead, put it on your hand." I did, held my arm up, and before I knew it, the male owl had taken the mouse up to his branch, leaving as a souvenir a tiny scratch by

Opposite top: Mike Stephens bags a furry owl pellet—the regurgitated fur and bones of the critters they eat—to later dry, dissect, and examine its contents.

Opposite bottom: Stephens holds a shoulder bone from a rodent, taken from a dried-out owl pellet.

Below: Stephens holds out a mouse on his wrist for an owl to pick off and eat.

New Threat to Spotted Owl

THE SPOTTED OWL has continued to decline in numbers since it was listed as endangered 18 years ago and efforts to protect it caused a furor in timber country. The good news is that "at least in the redwood region, it seems like they're doing OK," Mike Stephens said. Habitat improvements in Mendocino and Sonoma Counties have helped, and researchers have also found more owls in these counties than were previously known to exist.

Farther north along the coast, populations have dropped an average of 3.4 percent per year, and in Washington State as much as 7.1 percent per year. Stephens and many others suspect that one major cause is the invasion of the barred owl, a related species native to the East Coast that has expanded westward over the last 50 years and is moving southward in California.

In the last decade, a significant drop in spotted owls in Redwood National and State Parks has coincided with a big increase in the number of barred owls. The newcomer owls are more aggressive, can adapt to a wider range of conditions, compete with spotted owls for food and nesting materials, and may even pass along parasites and diseases. They have also been known to mate with spotted owls, creating hybrids. "The barred owl is probably the biggest threat to spotted owls here in redwood country—more so than habitat loss," Stephens said.

Although barred owls have been found as far south as Marin County, they are not yet as prevalent in Sonoma and Mendocino counties as they are farther north. They have been seen within about five miles of the Salmon Creek Forest, Stephens said. "It's just going to be a matter of time before they show up—I'd say within the next ten years."

—*EE*

my thumb. This time, the female let him administer the meal to their chicks.

Suddenly, a sneeze erupted above us, reminiscent of a tooting party horn. "I've never heard *that* sound before," Mike commented. "But look at how she's shaking her head. She's getting ready to cough up a pellet." And so she did, flinging a sodden gob of wet fur and tiny bones to the forest floor. We went in search of it—"sometimes you have to follow your nose"—and stumbled on an old pellet containing a diminutive collar bone and a shoulder or leg socket, before finding the fresh pellet virtually on top of a little skink. "That's the redwood forest for you," Mike remarked. "You look close enough and you're bound to find something interesting."

The Making of a Wildlife Consultant

Mike went to school in Maine, graduating with a degree in forestry in 1990—the year the spotted owl was listed. "So it was a topic for discussion. One of my profs was asking, 'Who cares about the spotted owl? Maybe it's just time for the spotted owl to disappear.' Of course, he was doing that to get a response out of us. And the other students said, 'Yeah, maybe you're right.' But I was infuriated. I didn't see why you can't have a happy medium between forestry and wildlife and manage the two."

Eventually he found himself in the Sierra Nevada, where he spent three years working on a demographic study of the California spotted owl. When that project wound down, word of mouth landed him back-to-back jobs in telemetry studies of spotted owl foraging habitat, once again in the Sierra Nevada, and then in Mendocino County. "It was my job to capture the owls, put radio transmitters on them—mounted on their backs with a sort of backpack system, the antenna going down their back about the length of their tail—and then go out five nights a week year round and try to get locations on them."

The investigators learned that the owls spend roughly 75 percent of their time in 20 to 25 percent of their home range—"so it's a small area, and it's important to know where that small area is, because it should receive the highest priority for conservation. Parts further out in their home range can perhaps withstand some types of timber harvesting. In fact, some types of timber harvesting may actually enhance the prey species. So the idea is that the nest tree is like the anchor of their territory. As long as you keep that preserved without disturbances, you can do some manipulation to other parts of their home range, and they'll adjust their foraging accordingly."

At the conclusion of the second telemetry study in 2005, Mike got offers of work, but they all involved leaving Mendocino County. After five years, he'd grown attached to the area, and so he decided to see if he could survive doing consulting. The following year, when the Conservation Fund bought the Big River and Salmon Creek properties, he was in the right place at the right time.

Hooting and Hollering

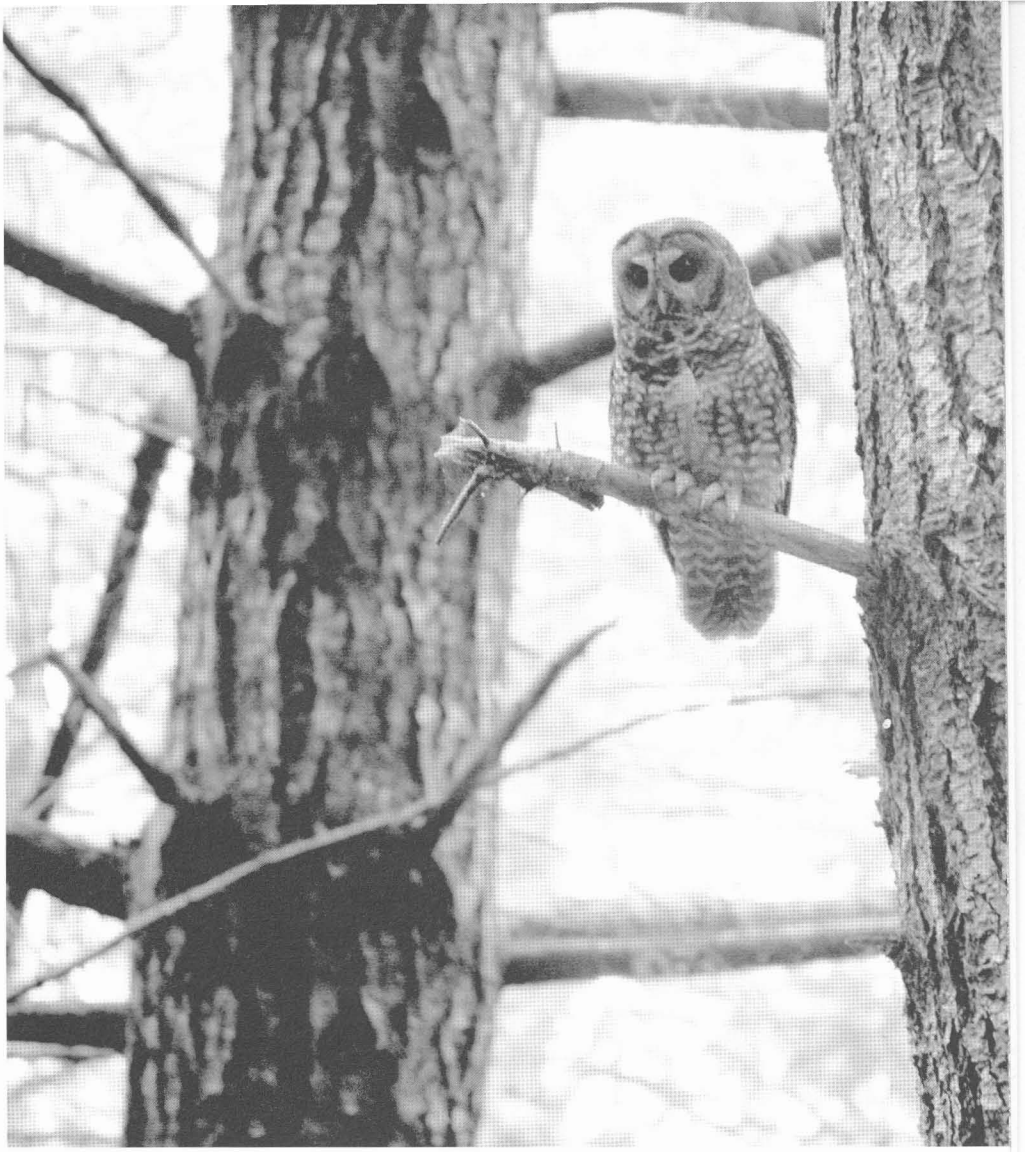
We left the first pair in the deepening dusk. The male looked forlorn, as if, having dutifully delivered three juicy mice to his young, now *he* deserved one for himself. Mike assured me that the fact he'd hacked up a pellet (shortly after his mate) meant that he'd eaten well the night before. "You get no break today, buddy," he told the owl.

We drove a little farther into the parcel and halted next to a small stream. At this site, Mike had spent several days tracking down a pair who led him on a merry chase through the woods.

Only after dedicated pursuit did he manage to find their nest, which is near a tract due to be logged this year and only a couple hundred feet off the road. This habitat is more marginal than the first nesting stand, with younger and sparser trees. The fact that the road is so close to the nest is of concern as well. "If this were a main haul road," Mike explained, "the U.S. Fish and Wildlife Service would say the owls knew what they were getting into when they nested. But for this one that doesn't get used much, if all of a sudden you have ten big-deal trucks a day coming through, it might cause problems. I think what's going to happen is that they won't allow hauling until about the first week of July. And it's up to me to make sure that if there are fledglings, they're able to fly and get out of the way if they land on the road when a truck is coming along. Whereas most operations can start in June, this will just be put off a month. I'll also make sure the nesting process is still happening. If the attempt failed, they will probably be able to haul earlier."

From the fledglings' first flight in early July, the parents have four to five months to teach them what they need to know to survive, before kicking them out of the nest by mid-October. "They'll use feeding as a training session. They'll almost play games, like 'If you want it, you've got to follow me,' and they'll lead the juveniles through all this dense brush." When it's time for the young to be on their own, they're some 20 percent heavier than their parents. This head start doesn't guarantee success, however. "The data suggest that 80 percent or so of juveniles don't make it through their first year. The key is the first winter: if they make it through that, their survival rate goes up to about 90 percent." Part of the problem is territoriality—finding an area that isn't occupied and that has sufficient forage. It's an energetics issue as well, since they may have to fly long distances to find a spot that they can call home.

One-, two-, and three-year-olds often end up as "floaters," with a very large home range but no defined territory. To claim a territory of their own, they typically have to wait for an opening—perhaps running an older male out of his territory or, in the case of a female, seeing if the male of a pair will take a fancy to her and abandon his mate. These newly disenfranchised birds then become floaters themselves. "They're almost impossible to study because they don't vocalize, since they don't have a territory they're defending."



The disk-shaped feathers around the eyes of a northern spotted owl help to channel sound to the ears, which are inverted (one faces up, the other down) and set at differing heights on the head. Using differences in the time sound waves hit the two ears, owls can pinpoint the location of prey very accurately.

We spent half an hour more trying to attract the second pair with small-rodent noises (pursed-lipped squeaks) and the dry rustle of leaves, courtesy of a mouse tied on a string, as well as repeated contact calls. The male showed himself twice, but each time immediately disappeared into the thick forest with his mouse booty, so it wasn't possible to verify whether the nest was still being tended. Mike would have to make a follow-up visit. "Even if they're no longer nesting, they're obviously roosting—it's an area that they prefer. And knowing that is important."

After mouse number two, Mike called it quits. Back in the truck, we creaked and rattled up the rough dirt road so I could observe the main part of his job: hooting or calling. Lasting much of the night and taking him to 15 to 20 stations a night, 75 to 100 a week, this activity helps Mike keep track of the resident territorial owls in the parcel, and of their range. Commonly for THP development, two-year surveys are required, with three calling cycles a year, at least one of which must be done after May 15; the other two generally fall somewhere between March and late July.

By now the sky was deep indigo, and every so often a bit of red reflective tape winked from a black bush in our headlights, signaling a calling station. He chose one at a high point on the ridge, with a good chance of a response.

At each station, Mike explained as he put on his vest (now sans mouse box) and pulled out his GPS unit and clipboard, he plays recorded spotted owl calls—hence the loudspeaker I'd noticed in his truck—and listens for a total of ten minutes. "You make a note of when you start and finish and if you heard anything or not. If you did hear something, you write down the time, the direction you heard it in, a qualitative description of the call, and you try to gauge how far away it was. I also like to make a note of weather," he said, as he jotted down *calm, scattered clouds, dry, 69 degrees.* If possible, he lures the birds in to check their ankles for unique identifying bands; if that doesn't work, he comes back the next afternoon or early evening and does a follow-up visit, traveling to the area he judged the response came from and using the mouse technique combined with a contact call to get a close look and an ID.

Although most of the owl calls are easily mimicked by humans, the $900 device that Mike uses, featuring actual spotted owl recordings, brings more consistent responses. It cycles somewhat randomly between silence and the four basic calls: the upward trending two-note whistle of the friendly "hello-I'm-here-where-are-you?" contact call; the basic four-note call, used to declare territory ("the cadence is the important thing here: one forceful hoot, then two close together, followed by one"); the agitation call, which starts off sounding like an upset monkey and ends in the four-note hoot; and the angry female "crow-bark," which defies description (and, said Mike, defies mimicry as well)—but reminded me less of a crow than of a sick squirrel.

"This is the part of my work that becomes a job," Mike said. "It's a good opportunity to get caught up on your paperwork, but you also need to keep your eyes open, because sometimes the birds won't respond but will just fly in to check you out. Being patient and persistent is key."

The calls boomed out from our ridgetop stance. *HOOT HOOT-HOOT HOOT!* Monkey chatter. Two-note whistle. In the intervening silences, dogs barked. ("Yep, it gets them going too," Mike chuckled. "Makes the job more challenging.") Each station, whether there's a response or not, is entered on a survey form, which the California Department of Forestry and U.S. Fish and Wildlife Service use in THP development.

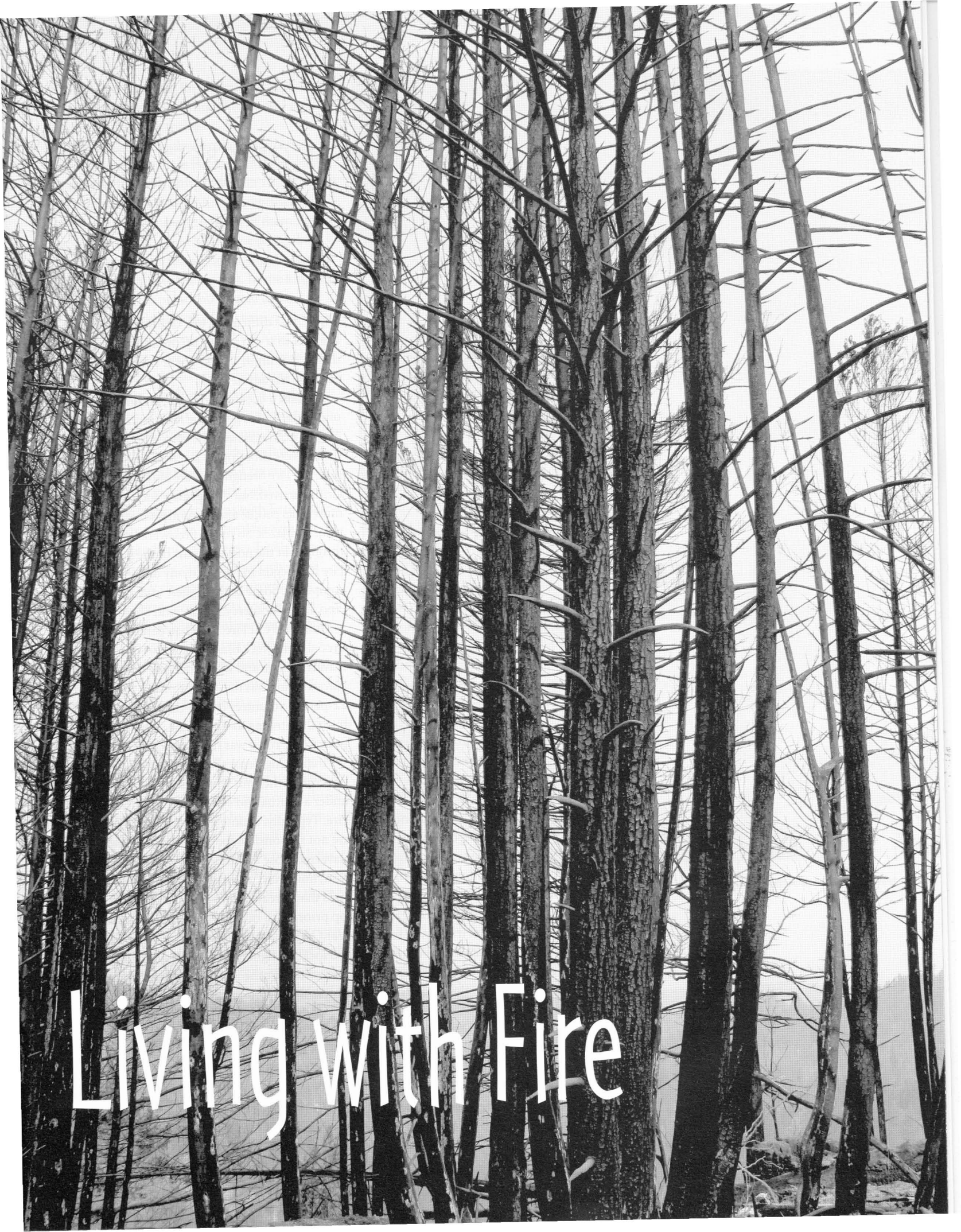
"Actually, when you think about it," said Mike, "it's amazing that you can submit a timber harvest plan in February or March, and then by June or July you can be harvesting trees. For the state government to turn something around that fast, especially when you're involved with endangered species, stream crossings and stream alterations, a whole variety of plants, archeological surveys, geological surveys"—and of course the spotted owl surveys—"it's kind of amazing." If, however, any of these surveys bring to light an impediment to the cutting of trees, the THP is denied. It's one area where things *are* clear-cut.

Suddenly Mike stopped and listened. "I just heard an owl a little while ago, and it sounds like it's coming closer." The recorded calls continued relentlessly—but then yes, I heard the four-note hoot myself. And yes, it was coming closer. We stood in the darkness, looking at the silhouetted trees in front of us. Suddenly, a dark form swept into the upper branches of a Douglas fir. "Stay there!" Mike said softly as he rummaged for the plastic box and pulled out a squeaking mouse, then flung it onto the ground. After a few moments' deliberation, the owl soared down and with pinpoint accuracy snatched the prey off the ground. Perching in another tree, he regarded us, then took the head off the rodent and munched it down.

Our visitor? It was the nesting male we'd tantalized with mousy morsels just a few hours before—identified by the white-on-black markings of the left leg-band. "That's pretty impressive," said Mike, shaking his head. "He came quite a ways for a measly mouse. But it's better than nothing. And I'm glad to give him another—it's kind of a peace offering."

As we rumbled back down the road, Mike mused on the satisfactions of a job that many would consider boring—never mind what it does to your social life (Mike starts his workday shortly before dusk, and *tries* to get to bed by sunrise). "When you're with the birds," he said, "you're forced to be in the present. We're the only animal that doesn't really live in the present—we're always living in the past or future. So maybe the owls activate a different part of your brain. It does *something* to you, I know that. The closest analogy I have is playing music with other people: time loses dimension, and you find really interesting ways of nonverbal communication. For me, it's like that with the owls as well." ■

EILEEN ECKLUND


Living with Fire

LESSONS FROM THE SALMON CREEK FOREST

EILEEN ECKLUND

On the night of Friday, June 20, a rare spring electrical storm rolled in over most of northern California. Jenny Griffin recalled how beautiful it was to watch the dry lightning dance over the ocean from her home in Caspar, a tiny town on the coast just north of Mendocino. "Then I went to bed and had a blissful night's sleep." It was the last good sleep she, and many others, would have for a while. That night and into the morning hours, thousands of lightning strikes hit northern California—some estimates were as high as 6,500—and ignited more than 2,000 fires, including more than 130 in Mendocino County.

Early the next morning, Larry Tunzi, chief of the volunteer fire department for the little town of Comptche, 17 miles inland from Mendocino, was out in his truck scouting for fires in his district. As he drove he could see new ones springing up along the ridges and in the valleys—"a bunch of them." He knew then that his department was in for trouble. It was early in the fire season, when the forests were usually still green and moist, but spring 2008 had been the driest on record in northern California.

Griffin first heard of the fires at 10 a.m., when a forester called to tell her that there was one in the Salmon Creek Forest, on land owned by the Conservation Fund, where she works as a program manager. The Fund, a national nonprofit organization, owns three tracts of formerly industrial timberland in the Mendocino area, almost 40,000 acres in all, which it is trying to restore to healthy forests that can be harvested with a light hand and an eye to long-term sustainability. It had approval from the California Department of Forestry and Fire Protection (Cal Fire) for a timber harvest plan on its Salmon Creek property in July. Two others, for its Garcia River and Big River Forests, were approved for later in the year.

It soon became clear that there were many fires in the area, though just how many, and where, was difficult to tell. Griffin called contractors to try to round up firefighting help, then drove to Salmon Creek. There she found Rick Hautala already at work.

Hautala, a licensed timber operator, had been one of the first to get to the fire's point of origin. "When I came around the corner on the road, flames were shooting 30 feet in the air," he later said. Cal Fire firefighters were also present when Griffin arrived, but the agenncy soon had to shift most of its people and equipment to other, higher-priority blazes. So many fires were burning throughout the northern part of the state that Cal Fire had begun to refer to many of them as fire complexes. Some of the biggest were in Mendocino, Lake, Monterey, Trinity, and Shasta counties.

Tunzi and Cal Fire, together, determined that the Salmon Creek blaze, which was burning on Navarro Ridge and would become known as the Navarro Fire, was the highest priority for Tunzi's 22-person volunteer crew—the fire closest and most threatening to Comptche. When Cal Fire pulled out, Tunzi was made incident commander.

Firefighting departments throughout the state help each other out when conditions require it, under a mutual aid system coordinated by Cal Fire. Typically, county and local fire departments are not responsible for wildland fires like the Navarro: those are under Cal Fire's jurisdiction. Now, however, Cal Fire was forced to do triage. Fires that threatened lives and structures were top priority, so many—such as those in forests near Caspar—were fought primarily by county and local firefighters and contractors hired by landowners. Some in areas far from population centers were left to burn unattended.

Let It Burn?

For the forest, fire can be beneficial. Sequoias, Bishop pines, and other plants need fire to regenerate. When burning at low intensity, fire often clears out underbrush and unhealthy trees,

reducing the potential for destructive high-intensity fires, while opening the canopy so the remaining trees can thrive.

"I hear a lot of people—ecologists, fire managers—saying that these [June 20] fires are doing a lot of good," said J. Morgan Varner III, an assistant professor of wildland fire management at Humboldt State University. "A lot of them are in places where they would have done prescribed burning, anyway, so this is just saving the cost and bureaucracy involved in that. In the long run they'll be great for plant and animal diversity."

As the beneficial effects of fire have come to be more widely appreciated, the West's long-standing policy of suppressing all wildfires has given way to one that includes prescribed burns and even allows some wildfires on public lands to burn themselves out. Prescribed burns are done under strictly controlled conditions, however, when the weather and air quality are favorable. Otherwise, the smoke can spread far and wide, Varner said. "It's an acute health risk."

"One of the biggest problems with letting wildfires burn is that you can't control for weather conditions," he added. Even prescribed burns have sometimes gone out of control when the weather suddenly changed. Not surprisingly, therefore, local fire departments and area residents are often unwilling to take a chance on letting wildfires burn. Cal Fire, responsible for protecting privately owned wildlands, never allows fires to burn out on their own if it has resources available to fight them.

No Help to Send

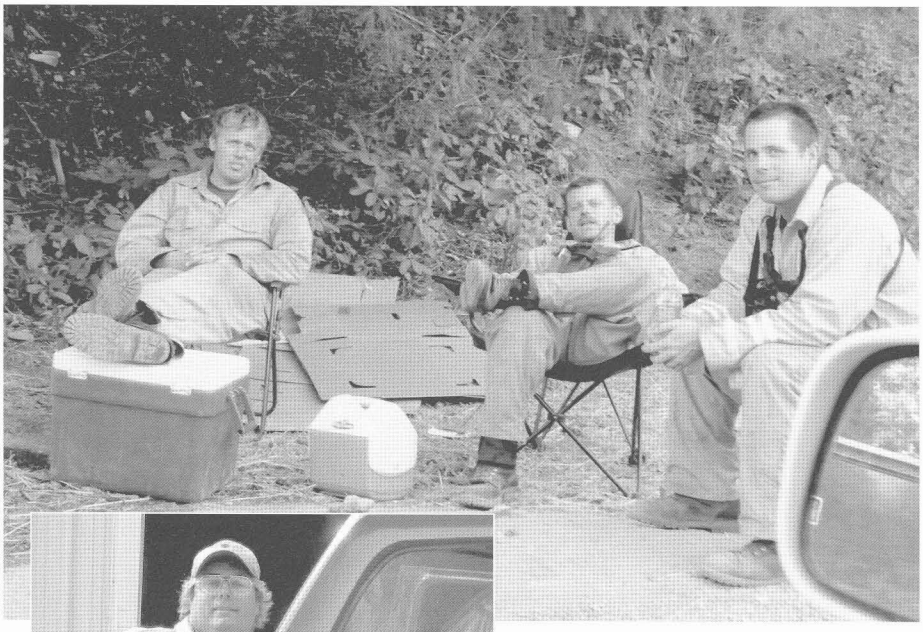
By June 24, four days after the electrical storm, three good-sized fires were burning on or threatening to burn forests owned by the Conservation Fund, which had mobilized staff and contractors but was still hoping for more help from Cal Fire. That evening, Griffin talked to a representative who spelled it out for her: there was no help to send. "'If I was a private landowner,'" she recalled the Cal Fire spokesperson telling her, "'I would be out mustering all the resources I could find.' I was really alarmed."

But muster resources they did: at the height of the effort, the Fund had as many as 53 contractors on the firelines, including hand crews and foresters, as well as several staff. Equipment contractors operated eight bulldozers and seven water tankers, and a helicopter was on standby for four days, unable to fly due to smoke and fog. They joined crews from the Mendocino Redwood Company, which owns most of the land on which the Navarro Fire was burning and had hired professional firefighters and equipment from both in and out of state. Altogether, Mendocino Redwood had about 170 people, including employees and longtime contractors, fighting fires on its lands. Together with Tunzi's Comptche crew and other local fire departments, the private landowners fought to create a defensible perimeter around the Navarro Fire.

On June 26, with the fires going strong, a Cal Fire spokesperson in Mendocino told me: "We have requested more resources, but have no idea

A charred grove in the Salmon Creek Forest

EILEEN ECKLUND



Top: Cal Fire firefighters take a break from the Jack Fire, in the Conservation Fund's Garcia River Forest.

Bottom: Comptche volunteer fire chief Larry Tunzi

when we might get them. All the resources available are being used throughout California."

Fortunately, a second electrical storm predicted for the weekend of June 28 did not materialize and—unusually for that time of year—there was little wind. When the Comptche crew was pulled off the Navarro Fire, after 11 days, they were mostly doing mop-up, putting out hot spots. Fires continued to rage in several areas around the state, most notably near Big Sur and the town of Paradise in Butte County.

On June 28, President Bush declared a state of emergency in California. At the peak of the fires, more than 25,000 personnel—including firefighters from across the United States, Canada, Australia, Greece, New Zealand, and Samoa—would be called in. In Downieville at the end of July, the flag flew at half mast in honor of two fire fighters from Washington State who perished, one in Trinity County, one near Yosemite. By the time they were brought under control, the blazes had burned more than 1 million acres.

It was still only the beginning of the fire season.

Fragmented Forests

Even though the wildfire series sparked by the June 20 lightning storm was highly unusual, bigger, more intense fires are becoming the norm in California. Fuel loads in the forests are high, fed by years of fire suppression, drought, and insect infestations. Fire seasons are getting longer, and global warming will increase that trend, bringing earlier springs, higher temperatures, and less snowfall in the Sierra.

As a result, the demands on California's firefighting resources have been spiraling upward in recent years. According to a March 2007 report by the Legislative Analyst, Cal Fire's fire protection expenditures increased by 83 percent in the decade between 1996–97 and 2006–07, from $475 million to $869 million.

Perhaps the major cause of growing fire hazard, and of the skyrocketing cost of fire suppression throughout the West, is the penetration and fragmentation of forests by humans seeking to own a house or cabin of their own in the wild. While fire has a major role to play in an intact forest ecosystem, once humans—especially urban or suburban ones—are added to the mix, allowing wildfires to burn tends to be excluded as an option.

"People are moving further and further out into the wilderness, and they're not cattle ranchers" who know how to protect their own property, said William Stewart, a forestry specialist at U.C. Berkeley. "They're from Orinda; they expect urban-level fire services." When such houses are threatened and the area has not been evacuated, Stewart said, firefighters "park an engine at each house—and each truck that's parked in a driveway is not on the fire lines." And more people mean more fires: most fires in the so-called wildland-urban interface are sparked by human activities.

One of the main reasons the Conservation Fund bought the Salmon River property was to prevent such forest fragmentation. "I believe that had Salmon Creek not gone to the Conservation Fund, it would have been developed out the ridges," said Darcie Mahoney, a contractor who is head forester for Salmon Creek. "That's what happened to another nearby property."

Adapting to Fire

Increasingly, public officials, agency staff, and fire experts around the state are asking: Is the state prepared to protect all of the residents now living in or moving into remote, fire-prone areas? Should it be?

Many experts believe that instead of throwing more and more resources into fighting wildfires, we need to change how we think about them and

TOP: SHEILA SEMANS; BOTTOM AND OPPOSITE: EILEEN ECKLUND

examine our own role in creating disasters. We need to learn to adapt to fire and allow it to regain its natural place in the landscape.

"We have to start examining how we've set the stage for human disaster." said Jack Cohen, a research physical scientist with the U.S. Forest Service's Fire Sciences Laboratory in Missoula, Montana. "Without people, fires are just natural disturbances, not natural disasters."

One key is for local governments to restrict where and how residents can build homes in rural areas. If a county chooses to allow wildland development, it should be responsible for providing, or at least paying for, services like fire protection, Stewart said. "In California, if people don't want to finance their own local fire district, the state becomes the fire district. States like Oregon charge people for that."

A bill introduced this year by Assemblyman Dave Jones (D-Sacramento), AB 2447, would be a big step toward accomplishing that: it would require counties to certify, before approving new subdivisions in the wildland-urban interface, that adequate local fire protection exists—or contract with Cal Fire to provide it. The bill is still being considered in the Senate.

Perhaps most important, residents of rural and fire-prone communities need to be better prepared for the big fires that will inevitably come, and take measures to protect themselves, such as replacing shingle roofs with metal ones and clearing away flammable materials from around their homes. Research by Cohen and others has shown that the principal cause of home loss during wildfires is the flammability of the home and its surroundings rather than the wildfire itself. Most people think that a wall of wildfire comes rolling through the community and destroys the houses, but that's not what happens, Cohen said. Rather, the wildfire provides the initial ignition, but the houses themselves provide the fuel that spreads it to other houses. It doesn't need to be that way: "We can readily make changes on and around our houses to make them more resistant to ignition."

California has stricter building codes for new construction within high-fire-risk zones, but many older wildland communities are still extremely fire-prone. "The Tahoe Basin is littered with houses that will burn," Varner said—homes with cedar shakes on their roofs, decks littered with pine needles and overhung by branches, wood stacked up against the walls. "We know how to keep houses from burning," said Stephen Pyne, a professor at Arizona State University who

First Line of Defense

On the evening of July 8, residents of the little community of Comptche gathered at the volunteer fire station to check firehoses for holes and burns and to wash down the engines. After the work party, they all settled down to a potluck barbecue. Here, too, everyone had pitched in, bringing hot dogs, side dishes, salads, desserts. The wonderfully tasty hamburgers were provided by Larry Tunzi, who raises grass-fed cattle on his family ranch and owns a small equipment business. Tunzi has been a firefighter with the Comptche department for 30 years, chief for the last 15.

The people of Comptche turned out in force to help their volunteers because they know how much they contribute to keeping the community safe—and how little they receive in return. There are thousands of volunteer fire departments like Comptche's around the state, the first line of defense against wildfires for many rural residents, but also the first responders to medical and other emergencies. Car accidents, heart attacks, a horse that fell into a ditch, "You name it," Tunzi said. Last year the Comptche station's budget was $21,000, provided by a special fire district tax. Forty percent of that went to workers compensation and liability insurance.

Volunteer firefighters can be held personally liable if something goes wrong on one of their calls. They work—and train—long, hard hours, put their lives on the line, get thrown up on by drunks, and all for free. Increasingly, "there's not a lot of people knocking at the door to do that," Tunzi said. The department needs more personnel, but mainly it needs more money—for training, new equipment, gas, tires. "Lack of funds remains our biggest challenge," Tunzi told the Mendocino County Board of Supervisors in November 2006. It still is.

Top: Larry Tunzi talks with Cal Fire Mendocino Unit Chief Marc Romero as others stoke up the barbecue grill at the Comptche community work party and potluck.

Above: A potluck dinner after the Comptche Volunteer Fire Department's community work party

specializes in fire history. "So why do we still let people build with combustible roofs?"

In Australia, rural homeowners learn how to prepare for fires and are then encouraged to stay and defend their homes, if they are able and willing. Studies have shown that most houses are ignited by wind-blown embers and spot fires that well-trained homeowners can put out on their own.

Historically, ranchers and other rural dwellers in the West defended their own properties from fire, but "we've gotten away from that here; now the government does it for you," said Pyne. He stresses, however, that people must be properly trained and their homes and land prepared.

"We're always going to have extreme wildfires, but that doesn't mean we have to suffer the same level of destruction," said Cohen. What we need to do, he said, is let go of our belief that through technology and sheer manpower we can bring every wildfire under control, and focus instead on protecting the things we value within the fire zone. "If we continually view the problem as a wildfire problem—as one of wildfire control and prevention—we're not going to keep the houses from burning."

Aftermath

On July 9, I stood with Jenny Griffin and Rick Hautala on a dirt road in the Salmon Creek Forest, looking out across a steep drainage at the Navarro Fire's point of origin. The vista was oddly wintry, despite the day's heat: ash made it appear as if a snowfall had blanketed the steep slopes, and the dense smoke still hung in the air.

Here and there we could see wisps of smoke—and sometimes a good-sized billow—where hot spots were still flaring up. Hautala and others were putting them out, as well as digging waterbars (angled trenches) across the new roads bulldozed by the fire crews, to divert rainfall, and

ALL PHOTOS: EILEEN ECKLUND

seeding and putting down straw on slopes to control erosion.

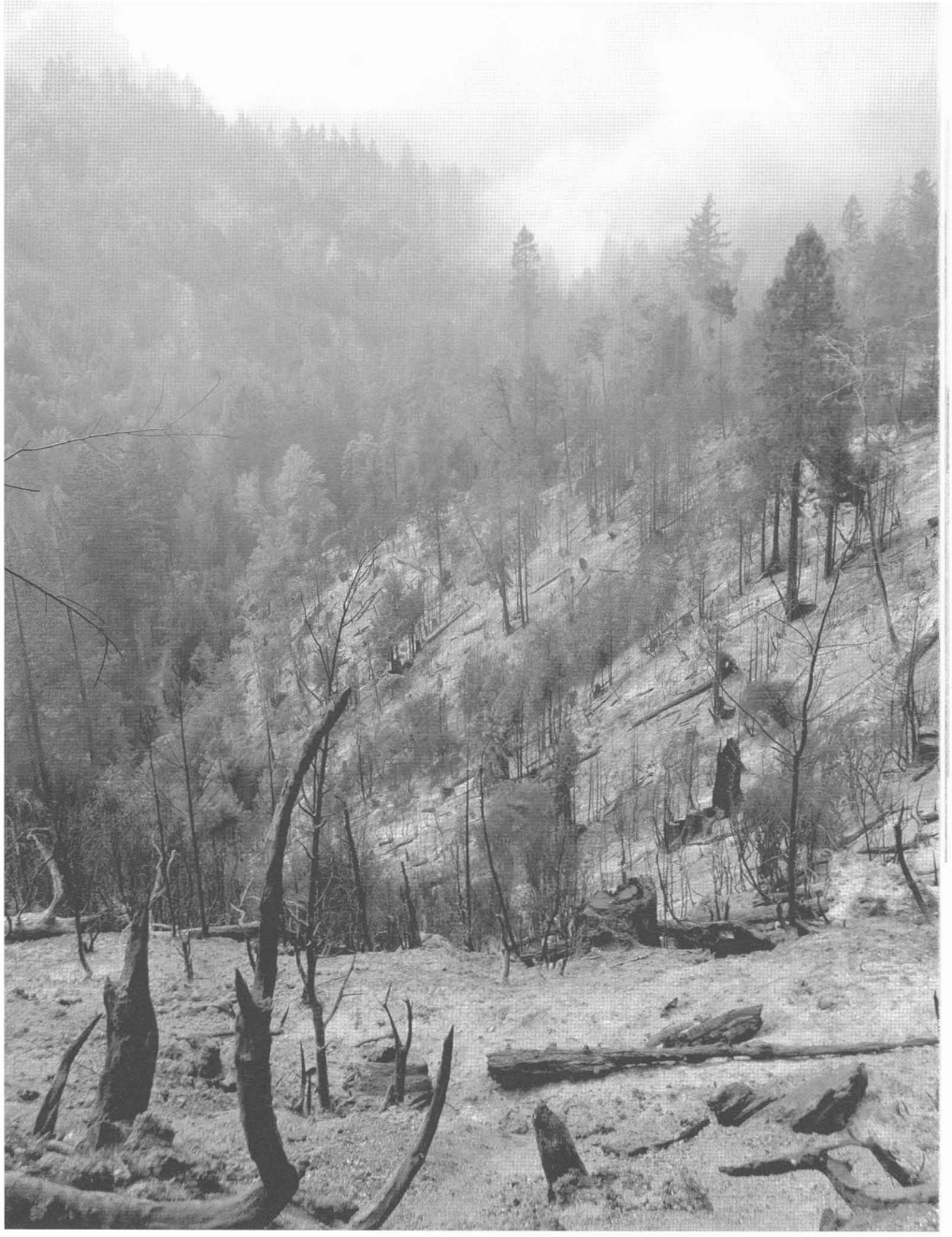
Considering the magnitude of the blazes statewide, Mendocino residents were lucky. One volunteer firefighter died of a heart attack, but otherwise no lives were lost and only two structures were destroyed. The Fund was lucky as well: The Indian Fire burned only one acre of its Big River Forest, stopped by a creek, low winds, and Cal Fire firebreaks. The Jack Fire burned 717 acres of its Garcia River Forest, but it was a less damaging low-intensity blaze. The Navarro Fire burned 461 acres of the 4,300-acre Salmon Creek Forest and badly scorched some areas that had been clearcut by the previous landowner. These areas will have to be replanted and closely watched for erosion.

The bulldozers disturbed a lot of ground that must be stabilized before the rains come. "The amount of dirt pushed around on a fire is staggering," Griffin said. They have already put down several hundred bales of weed-free straw mulch and have started planting seed mix. "We've got our work cut out for us in the next few weeks, to figure out what needs to be done, and without doing any additional ecological damage," Smith had told me.

The fires did not reach any of the areas the Fund plans to harvest this year, though some of the areas that did burn were planned for harvest in 2009, 2011, and 2012. It's too early to tell how much merchantable timber was lost.

Fighting the three fires cost the Fund more than $400,000, mostly for the equipment, but Cal Fire is expected to reimburse most of that. On July 24, Smith said the financial impact of the fires on the Fund's budget was "modest."

One important source of income for the Fund, about equal to what comes in from timber sales, is carbon credits, and as counterintuitive as it may seem, Smith said, the fires probably won't affect these too much. Most of what burned was needles and understory, while most carbon is stored in the trees' trunks and roots. A forest's carbon credits are measured by the amount of carbon it accumulates over and above that which is stored by forests that are managed according to standard forestry rules. The credits can be sold to companies, organizations, and individuals who want to offset the effects of their own carbon emissions. The Garcia Forest was one of the first, and largest, forests to have its carbon credits verified by the California Climate Action Registry, and they have "turned out to be an incredibly important tool for us," Smith said.



Top: Loading logs from a sustainable harvest demonstration in the Salmon Creek Forest, September 2007.

Above: Rick Hautala brings down a tree with great delicacy and precision.

Toward More Resilient Forests

The Conservation Fund's efforts to restore the logged-over Salmon Creek Forest to health, sustain itself economically by selective logging and carbon credits, and protect endangered species have only begun. Restoration efforts include stabilizing or decommissioning old fire roads, replanting slopes clearcut by previous owners, mapping owl nests, removing invasive plants, and flagging sensitive plants near roads to protect them. The Fund is also conducting water-quality monitoring in its watersheds and will put logs in streams to provide habitat for fish.

When the Fund conducts a harvest, it takes care to minimize ground disturbance, especially on steep slopes. It is hands-on work, in contrast to industrial harvests. Last fall, a group touring the Salmon Creek Forest to observe the practices watched in awe as Rick Hautala took down a redwood tree on a steep slope beside a logging road, wielding his chainsaw with the delicacy of a fine woodworker. He showed the watchers in advance where it would fall, across the road, and dropped it exactly where he said he would, barely touching the surrounding bushes.

The light-handed harvesting and good forest management practices used by the Fund, Redwood Forest Foundation, Pacific Forest Trust, Mendocino Redwood Company, and other sustainable forest managers not only restore the forests to a much healthier state, but will also make them more resilient to wildfires. In areas of its forests that were intensively harvested by past owners, the Fund removes weedy tan oak and thins the conifers that have grown back too densely. This reduces the fuel load and opens the canopy, leaving the best trees to grow bigger: larger trees, with thicker bark, can survive fire much better than small ones.

"Our high-value forest didn't burn" in the recent fires, Smith told me. "That's more resilient."

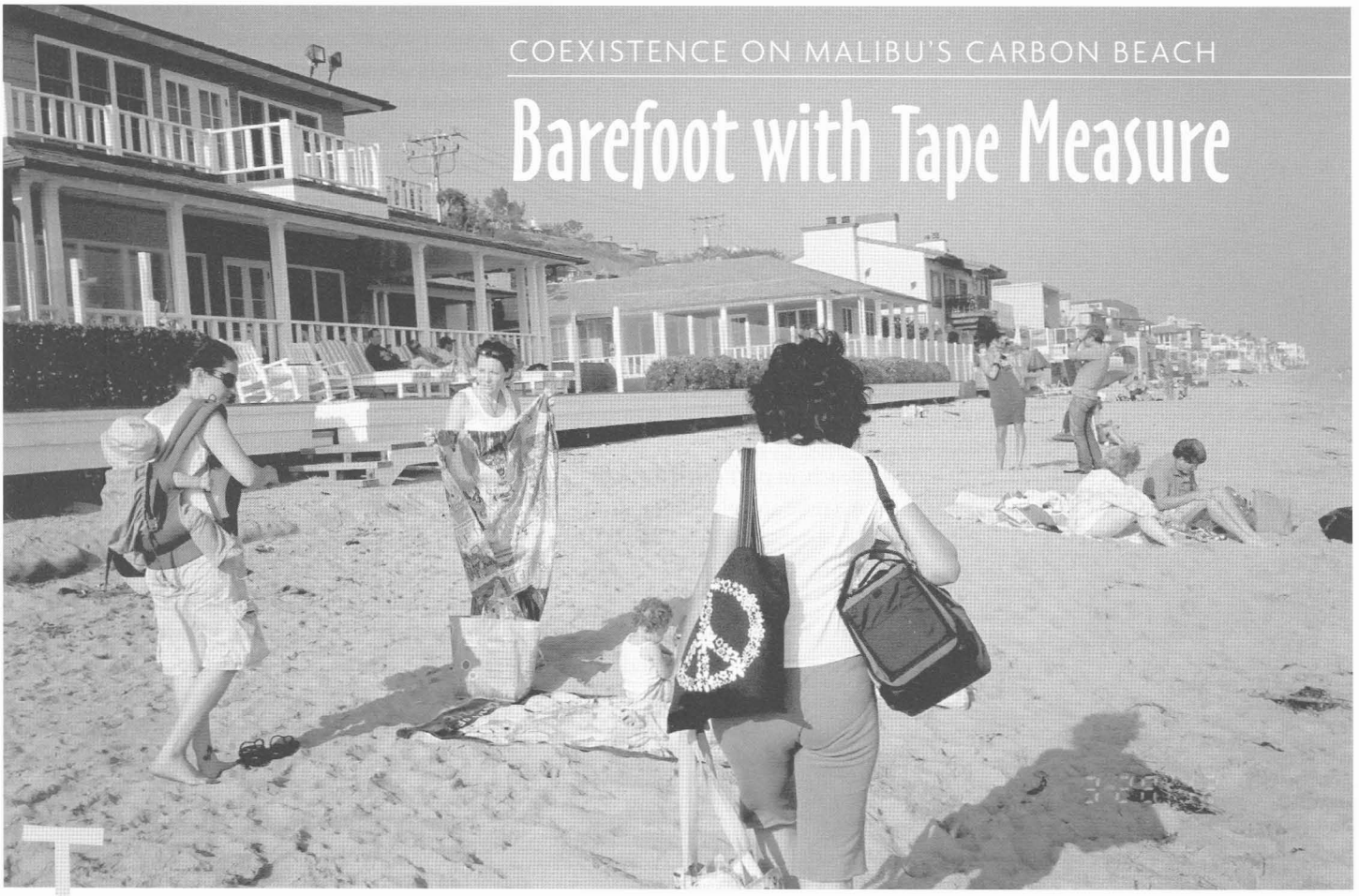
Even more heartening, the spotted owls that live in the Salmon Creek Forest don't seem to have suffered from the fire—and may even be gaining some benefit from it. "The fire doesn't appear to have burned any nesting habitat," said biologist Mike Stephens, who studies owls on the Fund's land (see p. 5), "and the owls are using the burned area for hunting." The fire opened up the canopy, making it easier for the owls to hunt, and has also sent the birds' primary prey, dusky-footed woodrats, scurrying around looking for new homes. "It's had the effect, if you will, of kicking over the anthill." And when the rains come this fall, there will be lots of new growth in the forest, potentially spurring a woodrat population explosion.

The Navarro Fire did some damage to the Salmon Creek Forest—mostly to land that had been clearcut in the past—but it has brought some good, too. Throughout northern California, many of the recent fires will have done the same, clearing out piles of dry underbrush and dead wood, opening up the forest so the remaining trees can thrive, and bringing vibrant new growth. The fires have also given Californians a glimpse of their future, and brought home the need to find new ways of living with fire. ■

PHOTOS THIS PAGE: SHEILA SEMANS

COEXISTENCE ON MALIBU'S CARBON BEACH

Barefoot with Tape Measure



STORY AND PHOTOGRAPHS BY SHIRLEY SKEEL

THE DAY BEGAN HOT AND SUNNY as revelers prepared to celebrate July 4th at Carbon Beach—a stretch of sand on the Malibu coastline fondly known as "Billionaires' Beach." The billionaires themselves, and their more modest millionaire neighbors, were preparing for a relaxing weekend on their private beach sites, which are stitched together in a ragtag fashion with the public spaces on one of the most beautiful stretches of white sand on the California coast.

A group of Los Angeles dancers were also looking forward to a day on Carbon Beach. In the early afternoon, the TaskForce dance company, trailed by about 50 spectators, spilled through a public accessway and began performing up and down the beach as part of its Liquid Landscapes project.

But the jubilant spirit of July 4th independence did not last long. Instead, the old English common-law right to a "quiet enjoyment" of your land rose in a war cry from a handful of the wealthy homeowners and their guests.

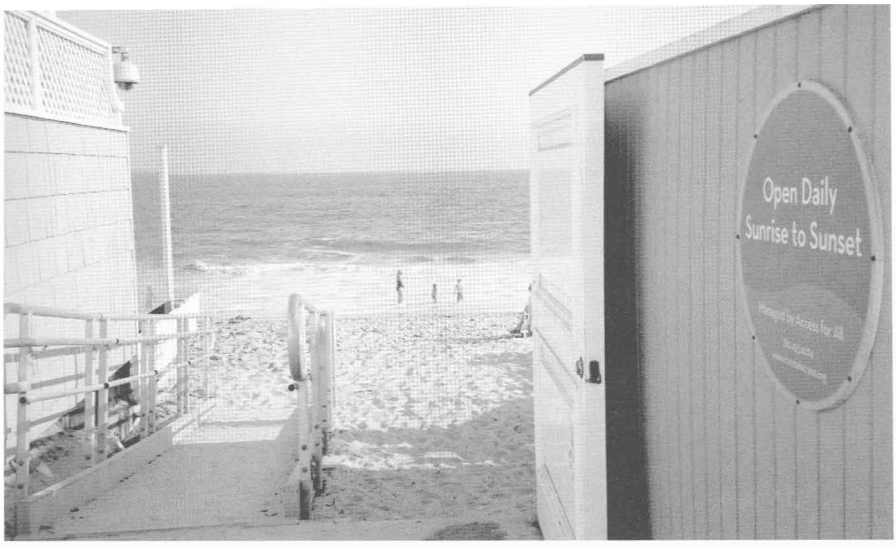
"We had people screaming and yelling at us at the top of their lungs," recalls Jenny Price, a writer and member of the Los Angeles Urban Rangers, a nonprofit group that runs public beach tours.

"People were tossing footballs over our heads and running back and forth interfering with the dancers, saying, 'These are really sad people; these are really unhappy people,'" Price said. "One guy was just screaming, saying 'Go back to the valley.' He got so bad, his own family was telling him to stop. It was ugly, really ugly."

The events at Carbon Beach on this particular day typified an ongoing struggle over private and public use of California's beaches—and a steady gain for the public—that many private homeowners are still coming to grips with.

The homeowners' shock and anger is hardly surprising. Only three decades ago, large strips of Malibu's 27-mile coastline were strictly privately owned (that is, up to the mean high tide line, as seaward of this is state-owned). Today, those private beach havens are liberally dotted with areas where the public is allowed—but there are few public entranceways between the cheek-to-cheek villas lining Pacific Coast Highway, so swaths of beach still remain largely

Looking down the beach from the accessway near David Geffen's house, in the left foreground.



Carbon Beach East accessway. The ten-foot wall and trellis to the left are part of Geffen's house. To the right is a lower wall and house. The accessway is nine feet wide and is open from sunrise to sunset.

untouched, while the public clusters near the accessways.

At Carbon Beach, in particular, the idea that just anyone can come and play in the "front yard" of Hollywood stars and reclusive billionaires is still sinking in. There are just two public entrances to this 1.5-mile beach east of Malibu Pier, and one of the walkways opened only three years ago. Its opening in May 2005 ended a four-year melodrama, with entertainment mogul David Geffen as its reluctant star, and it was just this summer that a map outlining the public areas of Carbon Beach went up on the California Coastal Commission's website.

The battle at Carbon Beach has indeed been ugly so far. Police, movie producers, lawyers, dog-catchers, cartoonists, and drunks have all played walk-on roles in the ongoing saga. Homeowners complain about noise, garbage, and dog poo on the beach, and about sunbathers asking to use their bathrooms. Public-access advocates accuse the homeowners of posting deceptive "private property" signs and decry the high walls and even barbed wire that line the sidewalk, preventing passersby from even knowing a beach is there.

There was a time when all of Malibu was privately owned. The Rindge Family purchased 13,330-acre Rancho Malibu for $10 an acre in 1892. In subsequent decades, as railways and roads were forced through, the land was parceled out to private owners, some of whom used train boxcars as summer cottages. As time passed, prize sections of beachfront were snapped up by Hollywood celebrities and developers.

The current emotion-charged conflict started in 1972, when the people of California, outraged at being increasingly walled off from beaches, passed Proposition 20. That voter initiative created the California Coastal Commission, which was made permanent by the California Coastal Act of 1976. After 1972, any development on the coast needed a Commission permit.

Linda Locklin, the Commission's coastal access program manager, says if a building proposal is substantial enough, the Commission can require that some land is set aside for public access, or that a passageway to the beach be opened to the public across privately owned land. The mechanism for that was the "offer to dedicate" (OTD) an access easement.

Over time, as permits for bigger and better homes were sought in Malibu, more and more land began to be offered to the public. However, at Carbon Beach, no one could get through the wall of villas, so nonresident beachcombers remained rare.

That changed in 1981. Following a colorful fight with Carbon Beach homeowners, a public passageway was opened at the western end of the beach. The travails at Billionaires' Beach were sardonically penned by Garry Trudeau in his Doonesbury cartoon strip, with the result that the walkway was named after his layabout character Zonker Harris.

The Zonker Harris passageway sent barefoot and barely-dressed citizens traipsing across beachfront that provides second or third or fourth homes to celebrities such as Oracle boss Larry Ellison, Los Angeles Dodgers owner Frank McCourt, and philanthropist billionaire Eli Broad.

But Zonker Harris was well to the west end of 1.5-mile-long Carbon Beach, and most visitors plunked down close to the entrance. It was another two decades before a second walkway opened on the beach's east end—the very passage that led to the unruly events of this July 4th.

But to backpedal just for a minute: For many years Carbon Beach homeowners had been making offers—on paper—to allow public access on their beachfront in return for building permits. But most of them continued to enjoy their privacy, not only because there was only one public accessway, but because, by law, some person or group had to "accept" the homeowner's offer to dedicate the area to public use, and open the accessway. On Carbon Beach, nobody did that.

In 1983, David Geffen wanted a permit to build his megamansion over three beach lots. To get it, he offered some beachfront (a lateral easement) and an OTD for an accessway alongside his house, leading from the road to the sea. For 18 years, nobody picked up Geffen's offer. To do so would have required readiness to face the wrath of beachfront homeowners and their lawyers.

Then along came Access for All. Executive director and ex-Sierra Club staffer Steve Hoye

says he formed the nonprofit group in 2000 to take on the job of accepting these OTDs, after he learned there were 1,300 of them on the California coast that were still not taken up, leaving large sections of beach closed to the public.

Hoye's first target for liberation was the offer for passage alongside Geffen's house, which could provide a second accessway to Carbon Beach. Hoye believes Geffen was stunned when he learned his OTD was more than a public relations exercise.

The legal battle that followed drew in the City of Malibu—which backed Geffen—and led to a proposed bill in the State Assembly that would have retroactively stopped nonprofit groups such as Access for All from accepting an OTD. "We sunk it," Hoye says.

On Memorial Day in May 2005, the soberly named "Carbon Beach East" accessway opened between Geffen's home and a neighboring property. Hoye reckons about 5,000 people now use the high-walled entrance each summer. Access for All maintains it with a grant from the Coastal Conservancy.

The first summer, Hoye says, beachgoers were confronted by aggressive private security guards hired to ensure not a sunburned toe went over the invisible line onto a private beach.

"It's been terrible," he says.

A Victory for the Public?

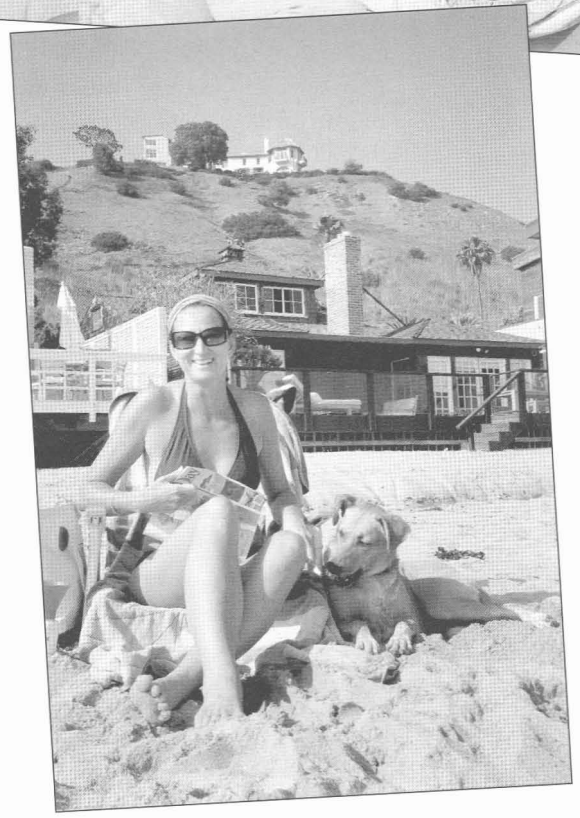
Just two days after the dancer incident on July 4th, I went down myself to Carbon Beach to see how the public and the homeowners were getting on. If it wasn't for the brown footprint sign reading "Coastal Access" on the Pacific Coast Highway, I would never have found the nine-foot-wide entrance, which was tucked into a seemingly impenetrable wall of hedges, rock pillars, and bricks.

I arrived at the shore and looked around. It could have been a Sunday afternoon on any California beach—except that the sunbathers, volleyball players, joggers, kids, and dogs all had plenty of room to breathe. No sand-kicking crowds. No hordes of screaming kids. Just some jolly white waves, pelicans, and scattered tan and white bodies.

As for public liberation . . . it was being demonstrated to excess. Several sunbathers were parked with their towels, unperturbed and undisturbed, on private beach lots.

"No, I didn't know," said Danielle Gordon, a Santa Monica sales representative, when I told her she was on private property. "I come as regularly as I can, and I always choose this spot," she said. A family of four sitting on another private site expressed the same surprise. Both parties said they had never been hassled.

Their logistical mistake was not surprising. I had printed out the Coastal Commission map showing Carbon Beach's patchwork of private and public beachfront. It covered four pages and was color-coded with seven different sizes of public easements. Some extended from the Mean High Tide Line (an elusive average) to the private homeowner's "structure." Others extended from the "Daily High Water Line [wherever that is] inland 25 feet and no closer



Top: Tanya O'Quinn holds a pair of blue shorts that she'd hung on Geffen's wall (see p. 22). With her are her children, Jordan Campbell O'Quinn, 9 (center), and Ashley Zapata, 10.

Bottom: Danielle Gordon of Santa Monica and her dog Chica unknowingly sat on a private stretch of beach.

than 10 feet" from the structure. If you come, pack a tape measure.

Other visitors carefully kept to the wet sand as they strolled, or put towels down a respectful distance from the homes behind them. The "no dog" rule was being joyously flouted.

Jennifer Simpkins, from Santa Monica, said she had stumbled on the "Coastal Access" sign for the first time that weekend and had come back with her two Italian greyhounds.

"I thought, 'Oh, my heavens, what a blessing,' because I'm always looking for somewhere besides a dog park to take my dogs," she said.

The big scandal of the day was perpetrated by two people who hung a pair of wet shorts on a low wall in front of the thick glass fence protecting David Geffen's estate home. A cropped-haired security guard in sunglasses and a black shirt swung onto the beach and asked for the shorts to be removed.

"He was nice about it," said Tanya O'Quinn, a teacher from San Fernando Valley, who was there with her two kids.

I stopped one green-capped homeowner walking on the beach and asked to talk. He declined to give his name, but complained bitterly about the "bags of dog poo left on the beach," the garbage, and "these Access for All people who bring 60 people down to the beach with tape measures and tell them all to have a good time." (It is the L.A. Urban Rangers who give small groups "educational tours" about public access.)

The homeowner's irritation won sympathy from some sun seekers. "I mean, they pay a fortune to live here, and I can't afford it. So I'll go to the public (beach) if it's a problem," said Carrie Kennebeck, a hairdresser from West Hollywood who was playing volleyball on the wet sand.

As the sun sank and the beach cleared, Jack and Mary Ann Heidt, who have lived on Carbon Beach for 60 years, came out on their porch. Jack Heidt said they "like to see the people here." But he listed a long series of problems, including people asking to use their bathroom or shower, or even to be let through the house to the road if the access gates are closed. (Access for All opens the gates at sunrise and closes them at sunset, because Geffen would not agree to a gate that allows 24-hour exit from the beach. All other Malibu accessways have such gates.)

"We ask them to leave, but some are quite belligerent and say, 'This is our property,'" Heidt said. "We're very upset about this."

Nobody is saying the system is perfect. The Hollywood stars are now hounded by the paparazzi and deprived of privacy—while the public struggles to find the beach or parking and goes without toilets.

But at the Coastal Commission, it's felt progress is being made. Linda Locklin says about 85 percent of the 1,300 coastline plots that were on offer to the public in the 1990s have now been taken up. In the 27 miles of Malibu coastline, there are 13 walkways to the beach, four of which are on easements on private land. That's only one every two miles, on average, but it's a good start.

"Before, the only way to get in (to Carbon Beach) would be to surf or swim in," says Locklin. "Now, on one weekend, several hundred people are able to go to the beach. That's progress."

Access for All plans to put a 16-foot map detailing the public and private areas on the wall at the Geffen accessway and is looking into other issues of contention.

"If we could cooperate, I think we could solve a lot of this stuff," Steve Hoye says, reflecting on the years of verbal and legal disputes.

Unhappily, the clash of interests on July 4th does not bode well for a lasting peace. But even the obstinate King George III let America go to the colonists eventually. Of course, that little war took eight years. The clash of the beach colonists and the kings and queens of Hollywood might take a bit longer. ■

Shirley Skeel is a radio and print reporter based in Bothel, Washington. She last wrote about "Living Below Sea Level," for Coast & Ocean *Vol. 23, No. 2.*

To see the Carbon Beach access easments in detail, go to www.coastal.ca.gov/access/Carbon_Beach_Access.pdf.

Chrissy Orloff (left) played in the water with Luke Dingman and Casandra Kellum.

THE NEW STEINHART AQUARIUM

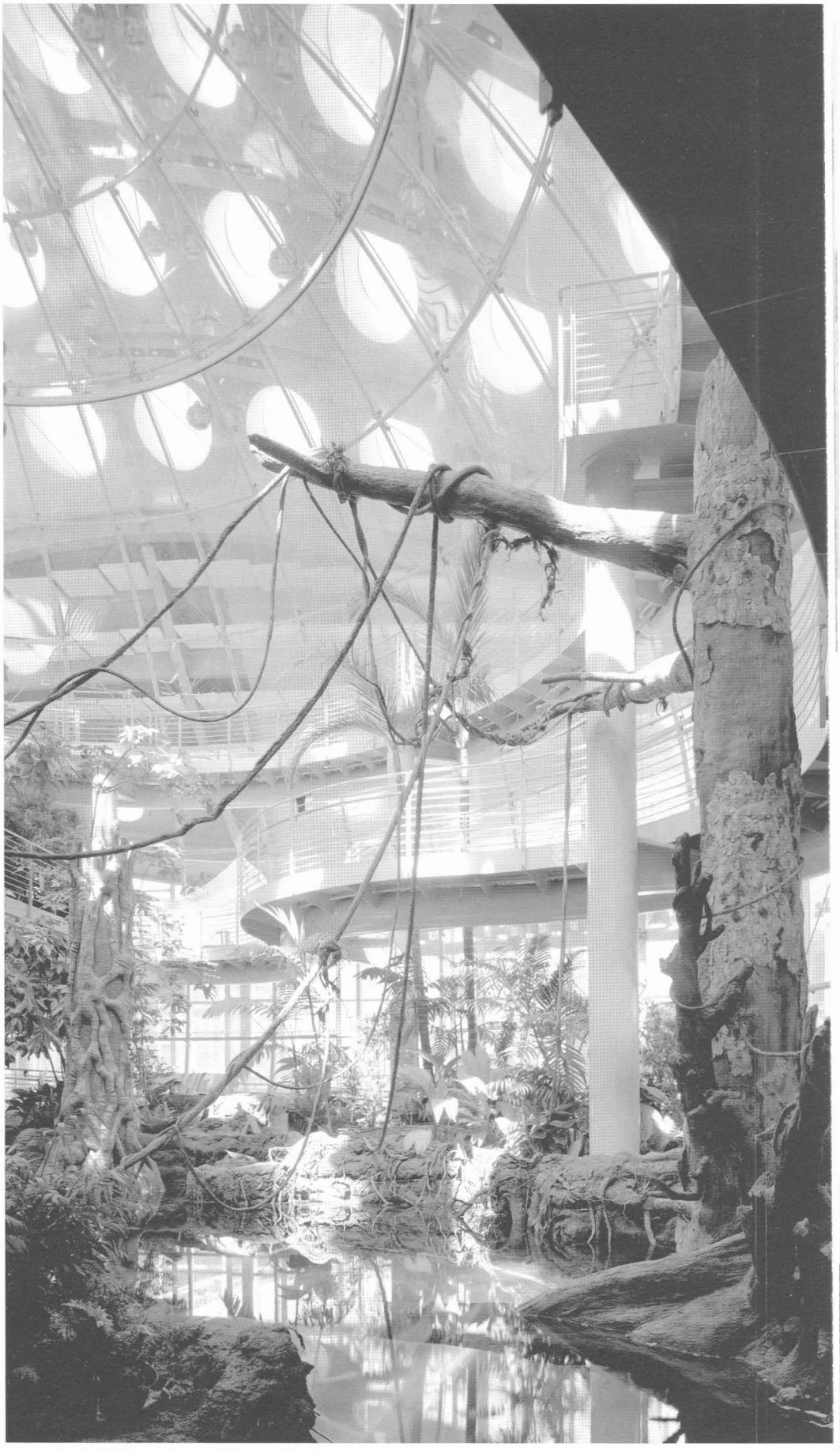
Home, Sweet Watery Home

KEITH HOWELL

On September 27, 2008, the California Academy of Sciences, the oldest scientific institution in the West, begins the next chapter of its storied life. That is opening day for the new, state-of-the-art building, designed by architect Renzo Piano, in San Francisco's Golden Gate Park. It holds four intertwined components under its living roof: a museum, planetarium, research center, and aquarium.

Although the research activities are the least well known to the public, they formed the genesis of the institution and gave rise to the Academy's name. In the midst of the Gold Rush, several individuals, excited by their physical surroundings and all the new animal and plant species there, came together to organize and record their discoveries. Soon afterwards a "museum" began with a cabinet of curiosities in a back office.

During the 19th century, many of the leading scientists who came through San Francisco were associated with the Academy: geologist Josiah Whitney, surveyor



TIM GRIFFITH

Upper level of the Rainforest of the World exhibit

The alligator swamp in the old Academy of Sciences building

and astronomer George Davidson, ichthyologist and first Stanford president David Starr Jordan, and proto-environmentalist John Muir, who began the Sierra Club under its roof.

As the organization grew, it moved from place to place until real estate tycoon James Lick provided impressive accommodations at 833 Market Street. It was a beautiful setting, dominated by a staircase, wrought-iron galleries, and a stuffed mastodon. Unfortunately, at 5:12 a.m. on April 17, 1906, it all came to a crashing end. The Great Earthquake reduced the building to rubble, while its precious collections were all but destroyed in the subsequent fire.

As the trustees cast about looking for a place to rebuild, the Academy's most famous curator, botanist Alice Eastwood, prevailed upon Golden Gate Park Superintendent John McLaren, who generally disliked the idea of buildings in his park, to allow the new Academy to be rebuilt in his domain.

The Beaux-Arts Halls of Mammals and Birds opened in 1916; the more classical Steinhart Aquarium came seven years later. It was the dream of Sigmund Steinhart, who provided the initial funds, and his brother Ignatz, who set the process in motion. Both brothers died before the building's completion. Under the terms of their wills, the aquarium had to be a part of the Academy, with operating costs paid by the City of San Francisco. The annual allocation was $20,000. (The City now contributes around $4 million a year.) For a time, before the Golden Gate Bridge opened in 1937, the Academy, and especially the aquarium, was the most popular attraction in town. Over the next 70 years, every child within a 50-mile radius of San Francisco visited at least once on a school excursion.

As the Academy expanded, a further nine buildings were grafted on to the earlier structures. But the years took their toll. The saltwater pipes corroded, the roof leaked, and the ventilation system put the aromatic bone preparation room too close to the store. Visitors complained. Moreover, the buildings were still too small. When the size of its footprint permitted by the City was maxed out, there still wasn't enough room for the Academy's collections. As other facilities throughout the West, especially universities' biology departments, changed their priorities to focus on molecular structures of species rather than their morphology, collection rooms became laboratories, and many of their acquisitions—butterflies, skeletons, artifacts—were transferred to the Academy.

Then, in 1989, came yet another earthquake. Although damage to the Academy was minimal, with only the North American Bird Hall put out of commission, repercussions from the Loma Prieta earthquake ultimately led to the new building.

A bond measure to repair the Steinhart Aquarium was passed in 1995, but with plans still on the table and the money not yet spent, Mayor Willie Brown suggested another bond issue to cover all the other structural problems. The two propositions together, plus funds from a state bond to improve parks and cultural institutions, would total $130 million. People began to dream.

Even before city voters passed the second proposition, the Academy's Board of Trustees was writing to some of the world's major architects to ask if they would be interested in the opportunity to create a new building. They were, and six of them came a-calling. Immediately, one stood out above the rest. While most arrived with provisional plans, when Renzo Piano came

CALIFORNIA ACADEMY OF SCIENCES

into the boardroom, "the first thing he did," says Patrick Kociolek, executive director at the time, "was to take the chairs out of the rows and rearrange them in a circle. Then, after everyone was sat down, he asked: 'What do you want?'"

They wanted it beautiful, they wanted it green, they wanted it exciting. What they wanted was a building that exemplified the mission of the Academy—to explore, explain, and (recently added) protect—the natural world. Finally, conservation, which had been conspicuously absent from the Academy's stated goals, was a byword.

Although the Steinhart has been overshadowed in recent years by the better-funded Monterey Bay Aquarium (MBA), it is still the *grande dame*, the oldest grand municipal aquarium. While the mission of the MBA is to focus on the life in Monterey Bay and its nearby deepwater canyon, the Steinhart displays marine life from all over the world. Like the MBA, it has a history of extraordinary innovation: the "roundabout" that provided a viable home for pelagic fish that can't survive in tanks with impeding walls; breeding programs that helped sustain rare species of seahorses and the winter-run Chinook salmon; a healthy, live coral reef exhibit; and some of the first solar collectors to warm tropical fish tanks. In its new iteration, it will rival every aquarium in the nation.

The imposing columns at the entrance to the new Steinhart capture the essence of the old structure, at the same geographical point. Behind these columns and the arching vault they support is a rebuilt swamp exhibit with seahorse railings, where slow-moving alligators (including an albino) again reside. These familiar features have been recreated much as they were, in homage to history or, in Piano's words, "the memory." Anyone who visited the old aquarium will immediately feel at home.

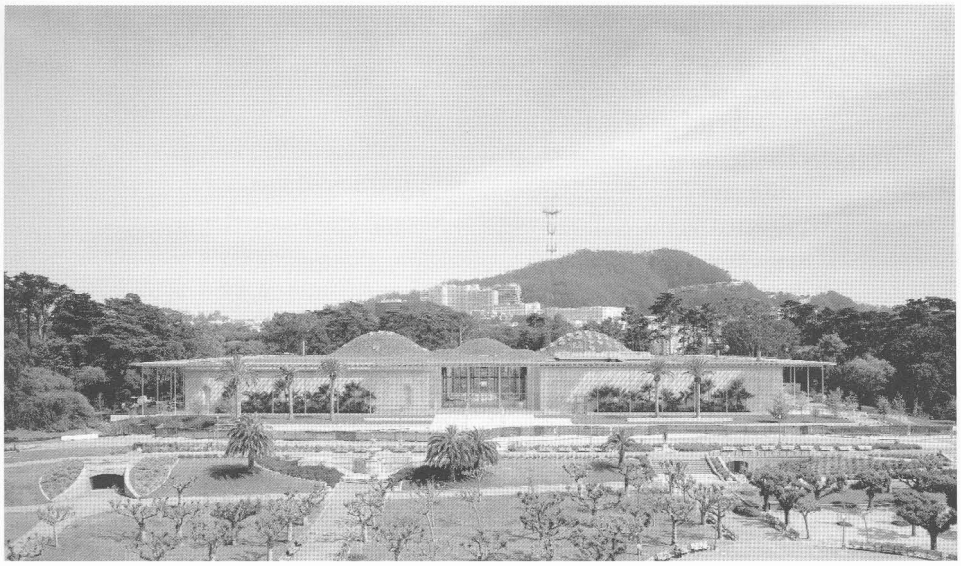
But there any resemblance to the old Steinhart ends. Like an octopus with outstretched tentacles, the aquarium—that is, all the live exhibits—reaches out to every corner of the new museum, and occupies half the public space. When you descend the stairs adjacent to the swamp, those familiar with the old Steinhart are in "for an enormous surprise," says Chris Andrews, the aquarium's director. You immediately enter the 5,000-square-foot Water Planet exhibit, with over 100 tanks, none of them rectilinear. There are more than 900 species throughout the building, and many of them are here—leafy sea dragons, Gila monsters, jellyfish, reptiles, amphibians, invertebrates. The theme, "Water Is Life," considers the importance of water to all life, and what it takes to live in and around water, hot or cold, salt or fresh. How do the animals breathe, feed, reproduce, hide, communicate? Once an hour, the lights dim, and a movie on the importance of water is projected on the walls.

Next to the Water Planet is the 212,000-gallon, 25-foot deep Philippine Coral Reef—the deepest exhibit of live corals anywhere. The corals in this reef have been growing for four years in the Academy's temporary accommodations downtown. It will be years before the reef is mature, but the many species of hard and soft coral are off to a healthy start. Black-tipped reef sharks, stingrays, sea turtles, and over 4,000 reef fish swim among the coral. All are either captive-bred or have been taken from sustainable wild sources. Besides establishing a delicate mix of chemicals that accurately reflect a natural reef, the secret to successful coral husbandry is light. Corals need an abundant supply, so the natural light from the open plaza is supplemented by 120 metal halide lamps that emit wavelengths ideal for photosynthesis.

Cameras built into the tanks, magnifiers, and video footage bring the action even closer, while in-tank volunteer divers will make frequent presentations, interacting with viewers and answering questions. The designers feel that this mixture of live animals and interactive technology will resonate with a new generation of visitors who are harder to impress than their parents.

The most celebrated aspect of the new Academy building is its undulating "green" roof, planted with native plants, whose seven domes mirror the seven hills of San Francisco and blend with the hills of the park. The two dominant domes top the planetarium and the rainforest exhibit, respectively. The coral reef anchors the planetarium dome, while the basement beneath the other dome holds the California Coast exhibit and an Amazonian flooded forest. The first, dominated by a 100,000-gallon tank, depicts the ecosystem around the Farallon Islands. Fish, invertebrates, and seaweed there are in constant motion, thanks to a wave-surge system simulating the natural movements of the waters in which these life forms flourish.

The visitor then enters a tunnel beneath the Amazonian forest, the bottom of the multilevel Rainforest of the World exhibit. Arapaima, giant catfish, vegetarian piranhas, and even the tiny tetras that swam in separate tanks in the old



The new California Academy of Sciences in Golden Gate Park

Steinhart now have a habitat their ancestors might recognize.

To enter the rest of the rainforest exhibit, you go up the main floor, venture through an air-lock, and immerse yourself in an enclosure kept at 80 degrees Fahrenheit and 75 percent humidity. It's hot in there. As you ascend the gently sloping ramp, you pass through the Borneo rainforest floor, the Madagascar understory, and the Costa Rica canopy. Alongside the live plants of what will one day become a mature forest, each geographical niche has its own suite of animals. Among them are flying lizards, gliding frogs, bats, and a reticulated python on the floor; colorful frogs, geckos, and chameleons in the understory; and free-flying birds and butterflies in the brightly-lit canopy.

An elevator ride brings you back down to the main floor where there is still much to see. Live animal displays are spread out in each exhibit and even in the cafe. The most popular is likely to be the penguin display, which has displaced the waterhole in the African Hall—these black-footed penguins do come from Africa, or at least their forebears did. Almost all penguins in captivity belong to this species, and aquariums and zoos pass them amongst each other to keep their gene pool healthy. Those at the Steinhart are lucky, as this is a good-sized tank with simulated wave action, 50-degree water, and a rapid filtration system. Moreover, the penguins may soon not be alone. Some species of fish and marine invertebrates may be added to help create a more natural setting.

The aquarium uses natural processes wherever possible. Natural systems cleanse nitrate wastes, so that the water can be recycled through miles of pipes. Saltwater, piped underground from the Pacific four miles away, is passed through sand and carbon filters before it enters the tanks. The pH value and chemical content in each tank is adjusted to replicate the environments in which the animals have evolved. Solar cells built into the canopy that surrounds the roof play a large part in the heating system.

Throughout all the exhibits are frequent references to the necessity for conserving all natural environments and the whole marine ecosystem in particular. "There is a strong conservation message," says Andrews, "but you don't get hit with a two-by-four." Some of the graphics are designed to plant the seeds, and the staff, interns, and docents provide reinforcement.

The actual conservation programs will be done mostly in partnership with other organizations. The Academy has signed a contract with the U.S. Fish and Wildlife Service to help save the endangered tidewater goby. This tiny fish is found in the brackish estuaries of northern California. Its life cycle lasts only 12 months, and every year scientists worry that it may disappear.

Joint captive breeding programs of freshwater fishes—cichlids, rainbow fish, killy fish—and frogs that face extinction from habitat degradation have been established in conjunction with institutions in Madagascar, with which Academy staff have a long association. Under the guidance of Steinhart aquarists, these animals will be bred both at the aquarium and in their native country.

"Attract, intrigue, inform, involve" is the Academy's motto. How far along this ladder each visitor climbs will vary, but if the Steinhart achieves its purpose, many will reach the top and come back as volunteers or move on to assist similar organizations with their conservation goals. Although most visitors will come to the Academy and aquarium looking for enjoyment, the Steinhart staff hopes that they will leave motivated to help protect our aquatic world. As the Water Planet display tells us, water *is* life. ■

Keith Howell was the editor of the Academy of Sciences magazine, California Wild *(formerly* Pacific Discovery*) for 15 years, until 2005, shortly before it was discontinued. He is now a freelance writer and editor.*

To purchase tickets to the Academy, and for information on prices, schedules, and programs, see www.calacademy.org, or call (415) 379-8000.

CALIFORNIA ACADEMY OF SCIENCES

Rx Quandary

Drug disposal dilemma

Safe drug disposal options are rare or nonexistent in California and nationwide, partly because of a conflict between federal laws and regulations meant to keep addictive drugs out of the hands of those who don't have a prescription for them, and the efforts of agencies and organizations seeking to protect human and environmental health.

RYAN BUCHAN AND
RASA GUSTAITIS

CARTOONS BY
JAY KINNEY

NOW THAT WEIRD MALFORMATIONS have been observed in fish swimming in streams where traces of hormones, steroids, and other medications have been found, it's time to consider how to dispose of prescription drugs responsibly. Dumping them down the drain or into the trash is not the answer.

That said, what the answer is depends on whom you ask. Federal drug control agencies still advise putting unwanted and expired medications out with the rest of your trash, after first making sure nobody can retrieve them. In guidelines published in February 2007, "Proper Disposal of Prescription Drugs," the White House Office of Drug Control Policy suggests mixing the drugs with "an undesirable substance, like used coffee grounds or kitty litter," putting them in "impermeable, nondescript containers," then throwing these into the trash. Certain drugs, however, should be flushed down the toilet, according to these guidelines. These are listed by the Food and Drug Administration (FDA) and contain controlled substances considered to be potentially addictive. Among them are Actiq, Percocet, Ritalin, Valium, and OxyContin. In tacit acknowledgment that this advice may be problematic, these federal guidelines add that if your community has a program that accepts drugs for disposal, you should take yours there instead.

The effect of the White House office's guidelines, however, is to encourage just what agencies responsible for wastewater treatment, water quality, public health, and fish and wildlife are trying to prevent: the continued flow of pharmaceuticals into wastewater and the environment. Those trying to keep drugs out of water are in a quandary.

"To my knowledge, they [the federal drug control agencies] didn't consult with wastewater agencies" before issuing their disposal guidelines, said Jen Jackson of the East Bay Municipal Utilities District (EBMUD). "In California, our message is: No drugs down the drain. Period." Still, the trash isn't such a good place to put pills and vials, either.

The federal Controlled Substances Act of 1970 provides that only law enforcement officers may accept and dispose of narcotics and certain other controlled substances with addictive potential. Law enforcement agencies, however, will rarely accept them, except at special events. Posting police at potential drug disposal sites, such as hazardous waste dumps and pharmacies, is simply not practical.

Speaking for the White House Office of Drug Control Policy, Jennifer DeVallance explained that "prescription drug abuse is the second-largest drug abuse problem in the nation [after marijuana]. More than six million people abuse

Learn How to Dispose of Drugs

LOCAL, REGIONAL, STATE, and federal agencies have joined together in the No Drugs Down the Drain campaign (www.nodrugsdownthedrain.org), which will hold a California-wide educational campaign October 4–11, 2008. Flushing leftover medication down the toilet is not acceptable because of environmental impacts. On the website, you can find disposal informationfor your area by entering your zip code.

prescription drugs to get high." The federal restrictions are in place because of "high potential of diversion and abuse," she said.

The drug disposal dilemma began to rise to public attention after the U.S. Geological Survey (USGS) published a study in March 2002 indicating that organic wastewater contaminants, mostly pharmaceuticals and pesticides, were present in 80 percent of 139 streams sampled in 30 states. Most of the sample sites were downstream from large urban centers or livestock activity. Earlier, links were found between the presence of artificial hormones, such as those in birth control pills, and feminization of male fish. More recently, a five-month Associated Press investigation reported traces of pharmaceuticals in drinking water.

Alerted by the disturbing USGS report and related findings, public agencies and community groups began educational campaigns to discourage people from dumping drugs into trash or the toilet, instead taking them to hazardous waste facilities, or to pharmacies willing to accept them. That's when the conflict with federal drug control laws came to the fore.

"If you knowingly possess controlled substances, you are potentially liable, so many [people] are afraid," said Jen Jackson of EBMUD, who has been working with people in other local, state, and federal agencies, including police authorities, to find a way out of the predicament. She is an organizer for a statewide "No Drugs Down the Drain" campaign (www.nodrugsdownthedrain.org; see sidebar).

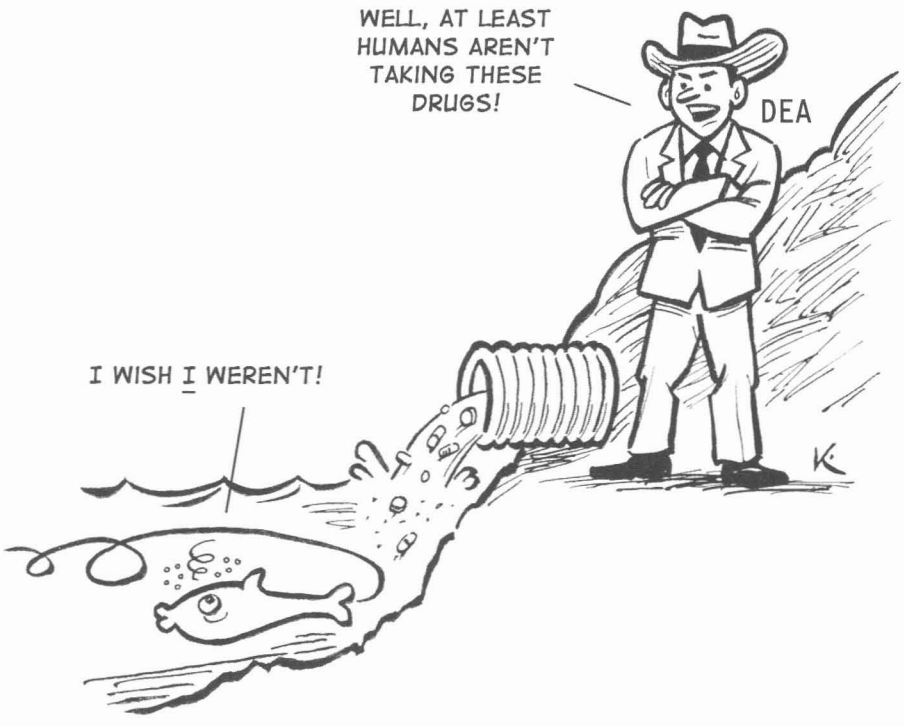
Some pharmacies will take back prescription drugs (except those containing controlled substances). Many of these, as well as scheduled take-back events and other disposal sites, are listed on the website of the nonprofit Teleosis Institute (www.teleosis.org), as well as on other sites, including that of Save the Bay, which entreats: "Don't medicate our bay!"

Practices at local hazardous waste facilities vary. The City and County of San Francisco had been accepting prescription drugs for disposal at its hazardous household waste facility for 16 years without running into problems, according to Marjaneh Zarrehparvar, residential toxics coordinator for the City's Department of the Environment. In 2007, an attorney warned that it might be violating federal drug-control law and exposing contractors to liability if it took in any controlled substances. The City shut down its take-back program and told residents who brought in drugs to take them back home and keep them in a safe place until something could be worked out with the DEA. The program has not resumed.

At some other hazardous waste facilities a "don't ask" policy seems to prevail. Publicizing that they are not permitted to accept controlled substances, they count on people to bring in only legally acceptable medications.

"It's kind of a tricky business right now," said Linda Brown, hazardous waste program coordinator of the northern California region for the Philips Service Corporation, which collects hazardous waste from facilities in all nine San Francisco Bay Area counties, ships it to Kent, Washington, to be consolidated with waste from elsewhere, then sends it to Argonite, Utah, to the company's Clean Harbors incinerator. (California does not permit incineration because of air quality concerns.) "We state that it's not in our permit to accept controlled substances. We don't want residents to bring these in. If some do come, we don't know."

The City of Los Angeles conveys a clear message. Its N3D (No Drugs Down the Drain) poster features a photograph of an unhappy-looking woman pouring tablets down the toilet, watched by three disapproving children. A circle with a slash is superimposed. The City is collab-



orating with Los Angeles, Orange, and San Diego Counties. "We're trying to figure out how to work with the DEA," said Timeyin Dafeta, principal environmental engineer with the Bureau of Sanitation, Department of Public Works. When asked how, he said. "There's nothing active right now. Basically they just say that we can't accept controlled substances."

In the absence of an adequate federal disposal alternative, communities and organizations have been improvising as best they can. The only county that has managed to find a solution is San Mateo, sparked by County Supervisor Adrienne Tessier. People can drop off any kind of prescription drug in bins set up at 13 police substations. "We're the only program in California that can legally accept controlled medications," said Tissier's aide Bill Chiang. "The program started with the sheriff's office. Law enforcement is critical in making this program work. Participating departments deserve the bulk of the credit."

The cost is low, Chiang said: "For less than $2 a pound (which includes pickup and disposal), this county is diverting tons of medications from the household waste stream. From September 2006 through the end of July 2008, we've exceeded 8,400 pounds." Yet after two years, this is the only such program in the state. Why? Chiang believes that "the controlled substances aspect makes people nervous." In addition, many police departments are too short-staffed and busy to take on one more task.

As with many national problems, the solutions sometimes grow from the ground up. In San Jose, pharmacist Robin Shalinsky became interested in drug disposal after working with Hospice of the Valley. The hospice asked her what to do with medications after a patient died. She tried to find out and learned there was no place to take these drugs. She talked with Charles Leiter, who with his father owns a pharmacy in San Jose, and in November 2007 they set up a large green metal box at Leiter's Pharmacy and invited customers to put unwanted drugs into it—all except narcotics. In the first three days several hundred pounds were dropped in. Leiter has a contract to have the drugs hauled away for incineration.

Although in the long run the drug disposal problem needs a national solution, there is now some hope for at least a statewide approach. Senator Joe Simitian's SB 966, signed by Governor Schwarzenegger in October 2007, requires the Integrated Waste Management Board to create model disposal programs by the end of 2008 and to report to the Legislature on their potential statewide implementation. The board is looking at various approaches being tried both in this country and abroad.

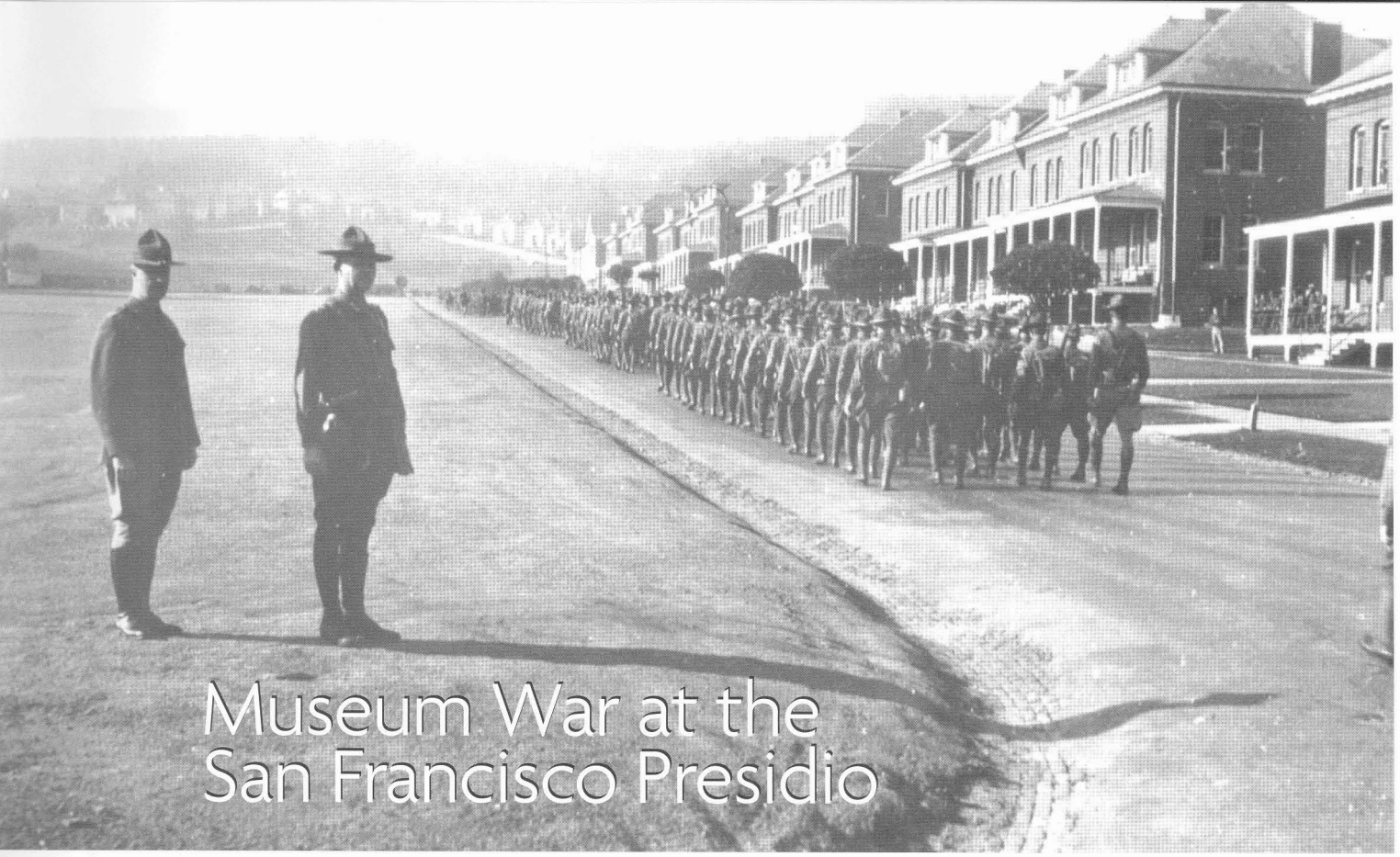
According to the National Association of Chain Drug Stores, pharmacists fill about 3.3 billion prescriptions a year. Studies have shown that between 35 and 53 percent are not used. A lot continue to flow into landfills and streams and the ocean. Reducing the volume will take much more effort. ■

Ryan Buchan is a fourth-year journalism student at San Jose State University with a minor in environmental studies. He grew up in South Lake Tahoe, and has written about football for the Pacifica Tribune.

"MAYBE WE SHOULD QUIT MIXING OUR LEFT-OVER MEDS IN THE CAT LITTER . . ."

New Law Bans Needles from Trash

As of September 1, it is illegal to put hypodermic needles, syringes, and other sharp medical items into household trash, recycling, and green bins. These "sharps" must now be placed into biohazard containers (you can buy these) and taken to an approved location. To find one near you, see www.ciwmb.ca.gov/HHW/HealthCare/Collection.



Museum War at the San Francisco Presidio

RASA GUSTAITIS

Troops march up Montgomery Street between the barracks and Parade Ground.

COURTESY GGNRA PARK ARCHIVES

WOULD A MUSEUM BUILT by a powerful local citizen in the heart of the San Francisco Presidio for his private art collection be a gift to the public? Or would it exact a price in the form of unacceptable damage to a precious historical heritage site? That's being hotly argued right now and the stakes are high.

The Presidio Trust, which manages most of the Presidio, has proposed to permit the erection of two large-scale new buildings—a 125-room hotel and a 100,000-square-foot museum—overlooking the parade ground on the Main Post, the ceremonial and administrative center of what was the oldest military base on the West Coast and is now a national park. The museum would be built by Don Fisher, the founder of the San Francisco-based Gap clothing chain, to house the contemporary art collection he owns with his wife, Doris.

These plans have outraged historians, preservation and park officials, and citizens who toiled together for two years to craft a vision for the future of this great urban park in keeping with its historic significance. Objections to the projects and irregularities in the process by which they have advanced have come from State Historic Preservation Officer Milford Wayne Donaldson, the San Francisco Landmarks Preservation Advisory Board, and the National Parks Conservation Association, among others. Brian O'Neill, Superintendent of the Golden Gate National Recreation Area (GGNRA), has warned that the Presidio could lose its designation as a National Historic Landmark District, the highest category of protection for historical sites.

At O'Neill's request, the Advisory Council on Historic Preservation has asked the National Park Service to evaluate all the development proposals for the Main Post. That evaluation, due for completion in October, will determine whether the integrity of the Presidio's National Historic Landmark District status will remain intact.

The Presidio is part of the GGNRA, but 80 percent of its 1,491 acres—all except the shoreline on both sides of the Golden Gate—are managed by the Presidio Trust, a government corporation created by Congress in 1996, with a seven-member board of directors, six appointed by the President, one by the Secretary of the Interior. Don Fisher is a former board member.

Unlike any other national park, the Presidio is required to become self-sustaining by 2012. The Trust has already met that requirement by leasing many of the park's 500 buildings (400 designated as historic), as well as recreational facilities and land to private and public entities.

Watchful historians and others involved with the Presidio's future give the Trust high marks for restoration work on individual buildings. Much more money will be required to realize the

vision in the management plan adopted in 2002 after wide public discussion. How it should be raised is at issue in the current controversy. A forest, meadow, or Victorian house can also be seen as valuable real estate, and creeping privatization is a concern.

On June 9, 2008, the Trust published a draft "Main Post Update to the Presidio Trust Management Plan," proposing the two new buildings, as well as other changes and management plan revisions to make them possible. These were moving forward with unusual speed, although at earlier scoping sessions, required to solicit public comment, many participants objected, instead favoring a smaller historical and education center related to the place and its natural and historical features.

"This is a conflict between private interests and the weight of the preservation movement," commented retired Army colonel Whitney Hall, who was commander of the Presidio from 1979 to 1982 and is now vice president of the Presidio Historical Association. " If we allow very important persons to override the national historic preservation program, we will kill both the Presidio and the national park."

Generosity or Arrogance?

The museum, a massive white modern building with a glass front, would stand on the most prominent spot in the Presidio's Main Post, on a rise overlooking the main parade ground, which is now a concrete parking lot but is to be revived as a great green open space. It would be three times bigger in volume than the largest of the Spanish Civil War–era barracks below it, according to Hall. Art works would be installed inside the building, outside, on a high platform, and on the roof. Just west of the proposed site is El Presidio, where archeologists are still discovering remnants of the northernmost Spanish military settlement, founded in 1776.

The hotel, which the Trust calls a "lodge" and compares to Ahwanee Lodge and others in non-urban national parks, would stand alongside the parade ground. It would have restaurants, a bar, a fitness center, and an underground garage, and would be suitable "for small corporate retreats," as described by the Trust.

In selecting a site for the museum, the Trust noted that it was considering Fisher's wishes. Many have suggested that it be built at Crissy Field, on the site of the old Commissary that now houses Sports Basement. That is one of three alternative sites presented in the Trust's proposal. Fisher has said, however, that he would accept only his preferred site.

If he wins approval, Fisher has said he would establish a foundation to build and operate the museum, rehabilitate an adjacent barracks building for an arts education center that he would endow, and provide $10 million toward the planned conversion of the main parade ground to a green space.

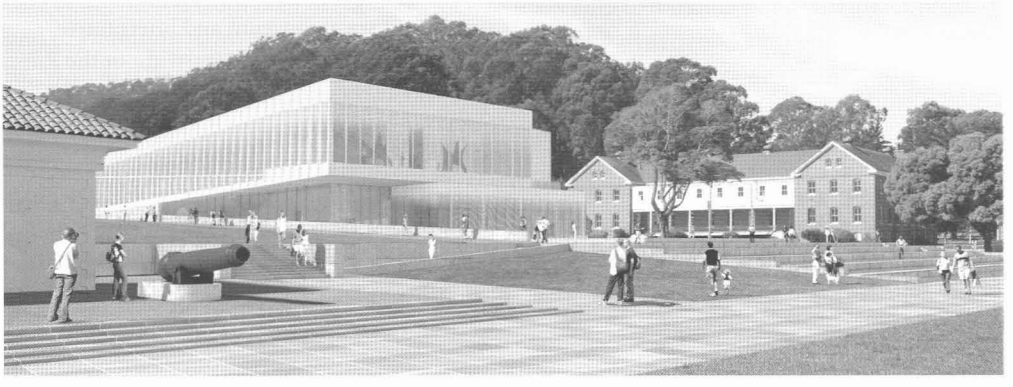
To build the museum and hotel, the Trust proposes to raise the ceiling for allowable new construction provided in the management plan and increase the allowable amount of demolition. Up to 141,000 square feet of buildings on the Main Post could be demolished, including the bowling center, Red Cross building, Presidio Child Development Center, YMCA Fitness Center, and Herbst Exhibition Hall.

During June and July, the draft Update, together with a draft Supplemental Environmental Impact Statement, was available for public comment. The Trust offered well-publicized guided walks to explain its proposed projects, but at least three people who went on them found that their guide was insufficiently informed.

On July 14, at the only public board meeting during this public comment period—held before the required historical Finding of Effects was completed—the Fisher family's spokesmen had a press release ready: "Supporters line up to tell the Presidio Trust they want CAMP [Contemporary Art Museum of the Presidio]."

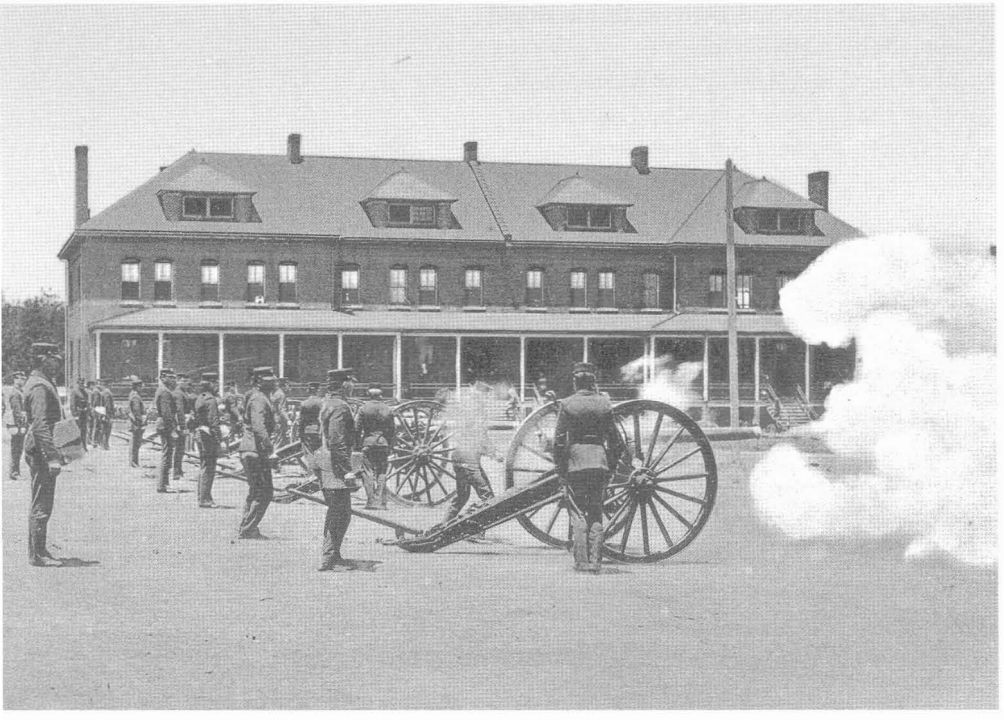
What happened was rather different. About 700 people came, filling Herbst Hall to capacity, with a crowd of maybe 200 unable to get in at 6:30 p.m., when the meeting began. By the time it ended, shortly after midnight, about 100 had spoken, mainly in opposition to the projects as proposed.

Museum advocates said the Update proposals would revitalize the Main Post and bring in other projects to enliven the place. A letter from former mayor Willie Brown was read: "The Fishers' generosity is beyond belief." Carpenters



Architect's rendering of how the CAMP museum would fit into the area at the head of the Parade Ground

DIGITAL IMAGING STUDIO, COURTESY GLUCKMAN MAYNER ARCHITECTS/WRNS STUDIO



Artillery drill on the main parade ground, c. 1898

Union Local 22 offered a letter of support. Mayor Gavin Newsom said he supports having the museum in the Presidio, and offered the assistance of his office to help resolve concerns about the site.

Opponents, questioners, and doubters included a wide range of citizens and perspectives: "If the Fishers are retaining ownership of the collection, is that a gift?" "The Presidio is a sacred place, I would no more revitalize it than Monticello." "A modern art museum proposed as the centerpiece of our historic district—the idea is illogical." "The special genius of this place is what happened here. Who was involved in building this place? Where were these men coming from, where were they going?" "There is no museum of the Presidio in the Presidio. The real culture of the Presidio is its history."

Edward P. Von der Porten, who together with Hall was a member of William Penn Mott's planning team when Mott was special representative of the Secretary of the Interior, said Mott envisioned a historical museum and interpretive center where visitors would learn about the Presidio, from early settlement to the present. Mott "strove to bring the greatest benefits to the American public," he said, while "the museum is designed as a dominating structure which would visually overwhelm the entire Main Post area, robbing it of its historical integrity. Its site was obviously not selected for its practicality—accessibility, traffic, and parking—but for its presence and for the vistas from its windows and plazas. It would appeal to well under 10 percent of the public at the cost of preempting the park's premier public space."

The Presidio Child Development Center was represented in force, pleading to remain, and two parents stepped up to speak way past the bedtime of the children they carried drooping over their shoulders. This is the only public school in the city to accept toddlers. Seventy percent of its children are from low-income families and 50 percent have English as a second language. It has a waiting list.

As the board members sat expressionless above them, several people expressed the view that their voices would not count. "This meeting tonight is just a show, a place for common people like me to vent. The real decisions are made elsewhere." "Many people here believe you have already made your decision. If that is indeed the case, then what you are doing is very dishonorable."

"That structure has no more place on the parade ground than in colonial Williamsburg," said Robert Laws, a retired attorney. "Pay attention to us. It's going to be a long, hard process, and it's utterly unnecessary."

In contrast to the emotional pleadings of the project's opponents, some advocates sounded contemptuous. "All they [the Fishers] want is to pick the spot," said one woman toward the end of the meeting, and suggested an analogy: Say Uncle Charlie wants to give you a Rembrandt, with only one condition: that it be hung above the fireplace. But that spot is occupied by a painting by a college roommate who took an art course while in dental school. Some will want to keep the roommate's painting.

Angrily, a man urged: Write your congressman to change the requirement that the Presidio, a national park, needs to pay for itself. Without that "we wouldn't have to bend to the will of a few wealthy men who want to put their offices and museums in the national parks."

The Trust agreed to extend the comment period to September 19, then to October 20, and to hold another public hearing October 14.

The struggle over the future of the Presidio is ongoing. Will the Main Post be a living historical museum where everyone can get a taste of the past and consider the future in light of that past, or will it become a busy "theme park" with crowds flocking to unrelated new museums, hotels, and to shops and cafés in converted historic military buildings? This is a crucial chapter of a long story, another opportunity for the citizenry to chime in. ■

COURTESY GGNRA PARK ARCHIVES

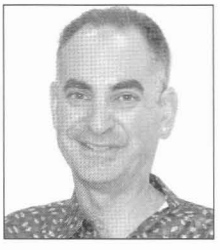
California's Mud Season

For a California state bureaucrat, August is the cruelest month. No state budget means no ability to purchase anything, not even office supplies. Vendors and contractors don't get paid, and become cranky. Staff can't be reimbursed for travel, so we stick to the office or effectively loan the state travel money. If you happen to work in Sacramento, the weather is abysmal. And this year, as has happened occasionally in years past, there have been layoffs and the threat of a massive pay decrease.

I know I shouldn't complain. We still have jobs (most of us), and when the budget is finally passed, as it must inevitably be, whatever pay was taken away will be restored. Still and all, it is more than a little demoralizing to work within a system that seems to break down every year, only to be patched up with debt and duct tape and sent sputtering off again like an ancient, barely maintained car.

It isn't as if the public doesn't value what we do, and I don't just mean the Coastal Conservancy. Time after time, even during recessions, the public has voted overwhelmingly for resource bonds. The mere threat of closing 48 relatively underused state parks generated thousands of letters to the governor's office and was quickly dropped as a way of balancing the budget. Releasing tens of thousands of prison inmates hasn't fared very well either! I doubt that many Californians would be happy if thousands of police officers, game wardens, park rangers, lifeguards, nurses, prison guards, teachers, and so on suddenly disappeared, taking with them all the Caltrans road crews. (They may be the butt of innumerable jokes, but new roads get built and old ones get fixed, don't they?)

Nevertheless, every year in June and July I find myself warning my staff not to get too much debt on their credit cards, because they may need it come August. It is our fifth season: fall, winter, spring, summer, and budget season. I suppose there is some comfort in this analogy, since it suggests that there will inevitably be a budget, and we will be able to refocus on the important work we are here to do: conserving land and water, providing public access to the coast and recreational opportunities, restoring damaged natural communities, and helping our regulatory brethren with their important work.



There is certainly plenty of work to do. The South Bay Salt Pond Project, the largest ecosystem restoration west of the Mississippi, is almost through five years of paperwork and is ready to begin construction. We are tantalizingly close to taking down two large dams, one on the Carmel River in Monterey, the other on the Ventura River. At the Coastal Conservancy meeting scheduled for this September we have miles of Coastal Trail planning and construction to present to the board. As I write this, two million cubic yards of sediment are being moved from the Port of Oakland to Hamilton Army Airfield in a unique wetland re-creation project. Later this year I expect to bring to our board a 2,000-acre land acquisition in San Luis Obispo County, which will complete a 20-mile route from Montaña De Oro State Park to Port San Luis.

Many of our project partners consider the Coastal Conservancy to be the easiest government agency to work with. There are many reasons for this: our staff enjoys its work, we have an entrepreneurial attitude toward our jobs, we are flexible and able to move quickly. We are also, I think, a very user-friendly "front end" for government bureaucracy. It's kind of like the Macintosh operating system; it looks clean and simple, but it hides an awful lot of complexity. I have often thought that we actually shield our public agency partners from many of the inanities of life and work in a giant bureaucracy. Friends and colleagues are usually surprised to learn that I personally approve not just every vacation for our 70-plus employees, but also every single trip they make out of the office. It is pretty much a full-time job for one person on my staff to fill out and file all 30-plus annual reports that are required of us by the rest of the government.

In this light, the annual budget train wreck becomes just another fact of life to be endured. It is like the "mud season" in New England: you have to get through it if you want to experience the glories of summer and fall. So we will hunker down and get through this year's budget crisis, and do our best to make sure that it does not inflict any damage on our partners, and keep our work moving forward as best we can. After all, if the going gets too rough, we can always go to the beach!

Sam Schuchat is the executive officer of the Coastal Conservancy.

COASTAL CONSERVANCY NEWS

At its June 5 meeting in Sacramento, the Conservancy approved projects including steps toward removal of two obsolete dams; improvements to and expansions of the California Coastal Trail, San Francisco Bay Trail, and Bay Area Ridge Trail; as well as efforts to improve fish passage, remove invasive plants, and improve public access along the coast.

SAN CLEMENTE DAM REMOVAL

The San Clemente Dam, built in 1921 on the Carmel River, has outlasted its usefulness and become a safety hazard. Its original reservoir capacity of 1,425 acre-feet has been reduced to 125 acre-feet by sediment that has built up behind it. Studies have shown that the dam could fail during an extreme flood or earthquake. Studies have also found that the dam can be removed without major negative impacts on the landscape.

To help prepare final plans and permits for the project, the Conservancy authorized up to $6 million, half in Proposition 84 money and half from California American Water, which manages the dam, supplies water to the Monterey Peninsula, and is a key partner in the dam-removal project. The dam's removal will not only resolve safety concerns, it will restore passage to more than 25 miles of steelhead spawning and rearing grounds.

TOWARD MATILIJA DAM REMOVAL

The Matilija Dam Ecosystem Restoration Project continues to move forward, with dam removal scheduled for 2010. To help prepare downstream areas for the impacts of restored stream and sediment flows, the Conservancy approved $4.5 million in Proposition 50 funds to the Ventura County Watershed Protection District for two preconstruction projects.

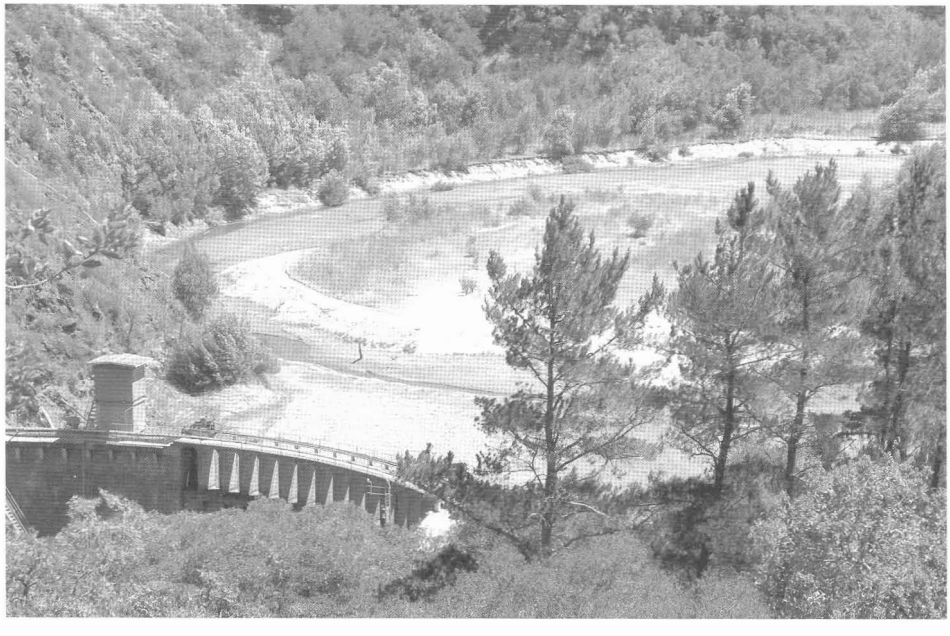
About $3.5 million will be used to acquire the nine-acre Matilija Hot Springs property on the north bank just below the dam, for use as a staging area for the heavy construction work during dam removal. Afterwards, the site will be improved for public recreation, habitat, and open space. The rest of the Conservancy funds, about $1 million, will be used to design changes to two downstream bridges. The Camino Cielo Bridge is to be replaced with a new 150-foot long bridge, and the Santa Ana Boulevard Bridge is to be widened by adding another pier and bridge cell opening. With other funds, the District will remove invasive *Arundo donax* from 1,100 acres along the river and install two new wells downstream at Foster Park for the City of Ventura's water supply, which may be affected by increased turbidity from restored sediment flow in the undammed river.

This is one of the largest dam removal projects in the country, and one of the largest ecosystem restoration projects ever undertaken by the U.S. Army Corps of Engineers west of the Mississippi River.

PULLING BACK AT SURFERS POINT

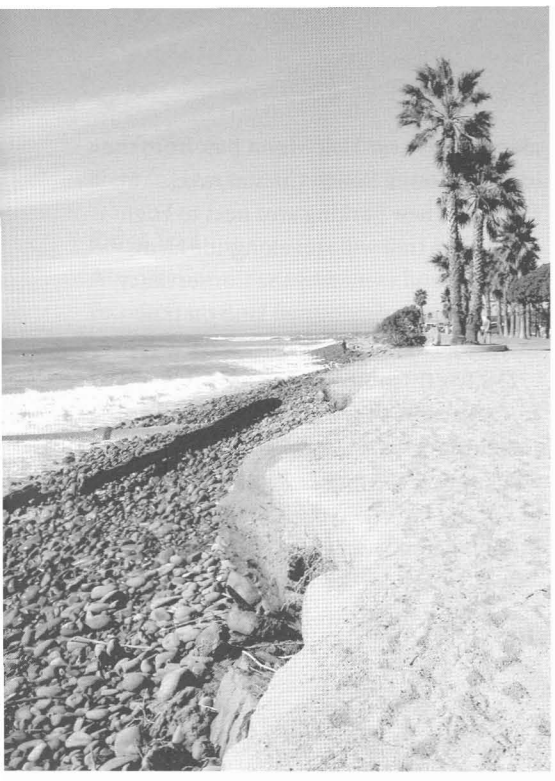
Ever since the Matilija Dam was built 60 years ago on the Ventura River, storm waves have been eating away the beach at Surfers Point, at the river mouth. Sediment that used to flow downriver and replenish the beach each summer has been held back by the dam. In some places, the land has eroded as much as 60 feet, damaging a bicycle path and parking lot. Now, in one of the state's first "managed retreat" projects, the City of San Buenaventura (Ventura) will relocate the path and parking lot inland, then stabilize the shoreline by spreading cobblestones and covering them with sand and restoring native sand dune habitat. By moving the facilities inland, the City aims to maintain public access to Surfers Point even as sea levels rise. Eventually, as the Matilija Dam comes down (see item above) the natural processes that shrink and expand the beach seasonally should return.

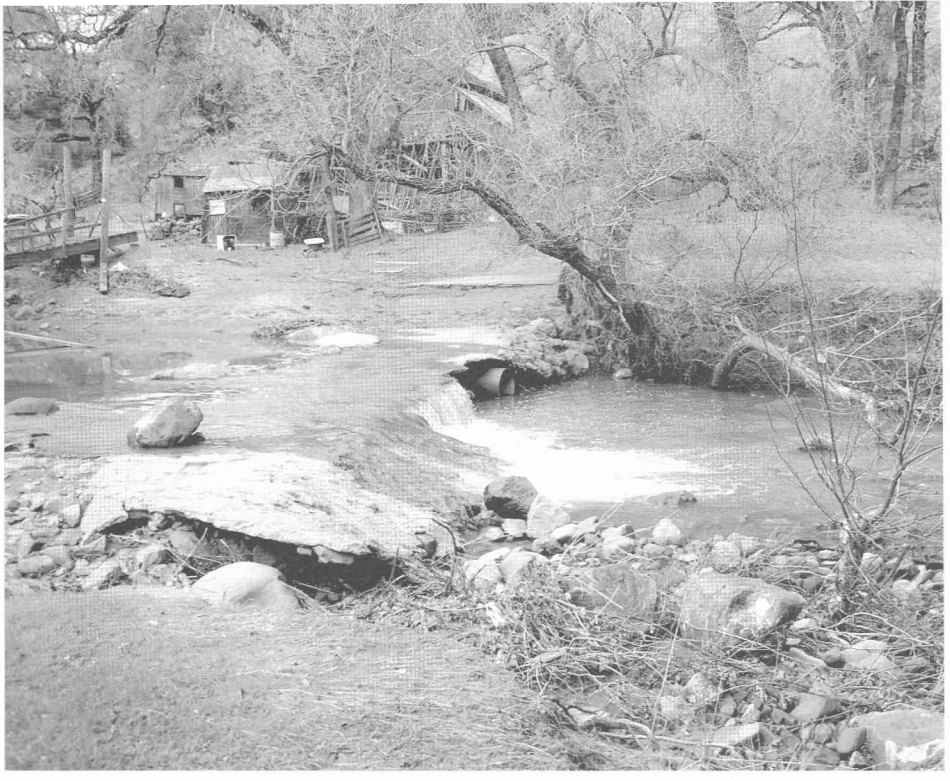
The City will replace the old parking lot with two new lots: one paved with permeable recycled asphalt and the other, to be used primarily for overflow parking by the nearby county fairgrounds, with a grasspave surface. Runoff from the lots will flow into bioswales along the edges of the lots,



Left: Aerial view of San Clemente Dam and the sediment delta behind it

COURTESY CALIFORNIA AMERICAN WATER





then through an underground stormwater treatment system before it enters the estuary. The funds will also enable the City to expand the picnic area at Surfers Point, add benches and bicycle parking spaces, and create a space for art installations and interpretive signs.

The Conservancy will contribute $1.5 million toward the total project cost of $7,056,000, and another $1.5 million will come from federal transportation funds, $500,000 (pending) from the Ocean Protection Council, and $172,500 from the City. Funding sources for the remaining $3,383,500 are yet to be determined.

SAN DIEGO CANYON TRAILS

The City of San Diego has envisioned an open space network of parks, canyons, river valleys, habitats, beaches, and ocean as a guiding principle for its future. Significant links in that network will grow from the Conservancy's grant of $150,000 in Proposition 84 funds to the San Diego River Conservancy for planning new trails and improving old ones in canyons that drain to the San Diego River in the heart of the city.

The project will create a system of trails connecting several upland neighborhoods to the San Diego River and across it on a new footbridge. It will also enhance habitat throughout the system. Access will improve to the new Fenton Parkway MTS station, Mission Valley Public Library, San Diego Chargers football stadium, and a park to be constructed nearby. Eventually the network will link to riverside trails running to Ocean Beach and the California Coastal Trail. Although it is in an urban area, this stretch of the river has a lush band of willows with a canopy of mature trees where the endangered least Bell's vireo nests.

FULL ACCESS TO WAVE ORGAN

The Exploratorium will improve access to the Wave Organ, a unique acoustic sculpture at the end of a jetty in the San Francisco Marina Yacht Harbor, using $204,000 in Proposition 84 funds approved by the Conservancy. Built of stone and marble from a Gold Rush-era cemetery, the Wave Organ offers great views of the downtown skyline, the Bay, the Marina waterfront, and the Golden Gate Bridge. It invites visitors to sit on a stone bench, place their ears against the ends of PVC or concrete pipes, and listen to waves slosh and gurgle at the pipes' other end. That experience has not been available, however, to people who cannot navigate stone steps. The Exploratorium, an interactive science museum, installed the sculpture in 1986. It will now replace the stairs with a ramp and improve the 720-foot access path that leads from the parking lot to the Wave Organ.

SUISUN CREEK RESTORATION

In Napa and Solano Counties, the California Land Stewardship Institute will use up to $350,000 in Proposition 84 funds approved by the Conservancy for three habitat improvement projects in the Suisun Creek watershed, with steelhead in mind. This 53-square-mile watershed is almost entirely agricultural, and in some places grazing and crop cultivation have stripped stream banks of plants that used to shade the water, lowering its temperature and helping to maintain flow in hot weather. For the past decade, conservation advocates and landowners have been working together to restore the stream corridor and prevent further disturbance.

On White Creek, a tributary of Wooden Valley Creek, a denuded 100-yard stretch that has been a steelhead spawning ground

Top left: Beach erosion at Surfers Point

Top right: This collapsed stream crossing on Wooden Valley Creek will be removed and replaced by a small bridge.

Above: The Wave Organ, with the proposed ramp added to the photo

TOP LEFT: KARA KEMMLER; TOP RIGHT: LAUREL MARCUS; RIGHT: THE EXPLORATORIUM

will be fenced off and planted with natives. On Wooden Valley Creek, which flows into Suisun Creek, plans will be made to remove a collapsed concrete stream crossing that blocks fish passage and replace it with a small bridge. Most of the funds will go toward removing the alien giant reed *Arundo donax* from a two- to five-mile stretch of Suisun Creek, and planting natives.

COASTAL PRAIRIE STUDY

Less than 10 percent of native coastal prairie habitat remains from Big Sur to the Oregon coast. With $639,000 of Proposition 50 funds approved by the Conservancy, Ocean Song Farm and Wilderness Center will develop a coastal prairie habitat enhancement feasibility study to map coastal prairie resources, find techniques to counter invasive species, and coordinate communication on regional coastal prairie protection efforts. Ocean Song will map and classify resources on 100,000 acres in Marin and Sonoma counties, study methods for treating velvet grass *(Holcus lanatus)* infestation, prepare volunteer training materials, and undertake other tasks to help efforts to conserve this drastically diminished habitat. The two organizations will have support from the Sonoma County Agricultural Preservation and Open Space District and the U.C. Davis Bodega Marine Laboratory and Reserve.

MANILA DUNES HABITAT PROTECTED

Friends of the Dunes will buy two properties totaling 53 acres on the North Spit of Humboldt Bay, next to the Humboldt Coastal Center, in the town of Manila, thereby filling the last gap in a network of about 1,000 acres of continuous protected dune habitat. Proposition 12 funds made the $700,000 purchase possible. The Wildlife Conservation Board is contributing $475,000, and the Conservancy approved the remainder needed, $225,000.

STATEWIDE TRAIL IMPROVEMENTS

Conservancy funds will help add more miles to the Coastal Trail, Bay Area Ridge Trail, and San Francisco Bay Trail, and will also improve them through projects approved by the Conservancy in June. All construction activities are funded by bond moneys approved by the voters.

Coastal Trail

In San Mateo County, the Peninsula Open Space Trust (POST) will use $2.98 million to build and manage three miles of trail along bluffs near Half Moon Bay, from the existing Cowell Ranch Coastal Accessway south to a new parking area next to Highway 1. The trail will run alongside farm fields on land owned by the Conservancy, then over privately owned land on trail easements held by POST.

Del Norte County will use $641,000 to construct almost two miles of oceanfront trail just north of Crescent City. The project will improve safe public access along the beach and bluffs of Pebble Beach Drive by installing bike lanes and Coastal Trail signs

Top: A surfer and bicyclist at Pebble Beach, Crescent City, where Del Norte County will build almost two miles of Coastal Trail

Right: This trail along Penitencia Creek in Santa Clara County will be upgraded for use by bicycles and wheelchairs.

TOP: DEBORAH HIRST. BOTTOM: YVES ZSUTTY

and improving road crossings and parking areas for this highly popular coastal route.

Ridge Trail

Almost nine miles of trail will be built, reconstructed, or designed in six counties.

In Marin County, the Golden Gate National Parks Conservancy will reconstruct and extend a segment of the Dias Ridge Trail, just south of Muir Woods, using $385,000 from the Conservancy. The Parks Conservancy will improve the trail alignment and drainage to reduce erosion into Redwood Creek and improve safety for hikers and bicyclists. The rebuilt trail will be 2.4 miles long and extend from Panoramic Highway to the Golden Gate Dairy.

In Contra Costa County, the Muir Heritage Land Trust will build 1.4 miles of Ridge Trail, two miles of additional trails, and a parking lot on the Fernandez Ranch, north of the Briones Hills Agricultural Preserve. Some of the $515,000 approved by the Conservancy for this project will be used to stabilize failing creek banks and restore vegetation along creeks that run through the ranch. The Land Trust bought the 700-acre ranch in 2005 for $3.2 million, $1.125 million of which was from the Conservancy.

In Santa Clara County, the City of San Jose will replace a third of a mile of dirt path along the southwest bank of Penitencia Creek with an eight-foot-wide, all-weather trail that can accommodate bicycles and wheelchairs. The path is routinely used by residents traveling to transit stops, a local high school, the San Jose Flea Market, and nearby homes and businesses. The Conservancy provided $150,000.

In San Mateo County, the San Francisco Public Utilities Commission (PUC) will develop plans, engineering designs, and environmental documents for a new 4.7-mile segment of Ridge Trail in the upper watershed of Crystal Springs Reservoir, using $185,000 from the Conservancy. This trail will connect the 10-mile Fifield–Cahill Road Ridge Trail to the Phleger Estate in the Golden Gate National Recreation Area. Upper Crystal Springs watershed lands were closed to the public from the 1930s until 2003, when the PUC opened the Fifield-Cahill Trail to guided, small-group excursions by hikers, bicyclists, and horseback riders. The new trail will not require reservations or guides, and part of it may be accessible to wheelchair riders.

In Solano and Napa Counties, the Solano Transportation Authority (STA) will prepare a plan for regional trails, including the Ridge Trail, along and across Highway 12 between Interstate 80 and Highway 29 in the Jameson Canyon area. STA will develop an agreement among the local park and transportation agencies, Caltrans, and landowners about feasible routes, and will determine costs, the relationships of trails to State and local transportation projects, and a funding strategy. The Conservancy provided $55,000.

Bay Trail

The City of Oakland will construct two 450-foot trail segments along the Oakland estuary with $400,000 from the Conservancy. One will connect the Coast Guard Island Bridge to Union Point Park and will be wheelchair-accessible, as will the parking area that will be built to serve it. The other will run from Derby Street to Lancaster Street, behind the Oakland Museum Women's Board warehouse.

OTHER NEWS

Muir Woods Is a Quiet Zone

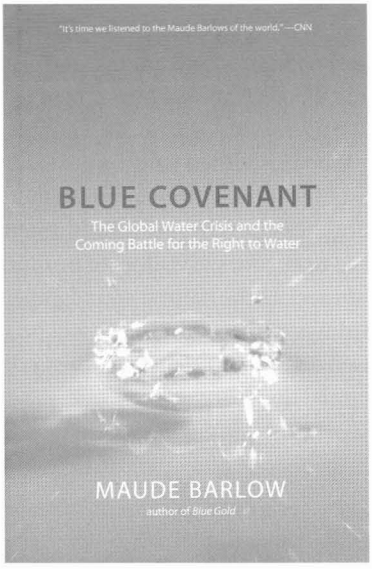
The Coalition of National Park Service Retirees published a list in June of the five quietest and five noisiest national parks in the lower 48 states, and among the former is Muir Woods National Monument (see *Coast & Ocean*, Vol. 23, no. 4). Though Muir Woods is visited daily by busloads of tourists, the loudest human noises there are usually youngsters having fun, and staff has worked to encourage visitors to be quiet and appreciate the natural soundscape. Recordings of that soundscape will be released on a DVD celebrating the park's centennial this year.

New License Plate for the Bay

This new special license plate celebrating "Nature within Reach" in the San Francisco Bay Area will be available next year if at least 7,500 people order it. The San Francisco Bay Area Conservancy program of the Coastal Conservancy launched this project, with support from the Bay Area Open Space Council, the San Francisco Estuary Project, and other agencies and nonprofit orgnizations. The goal is to raise $1 million a year for restoration, conservation, and public access projects in the region. See www.bayarealicenseplate.org.

RUNNING OUT OF WATER

Blue Covenant: The Global Water Crisis and the Coming Battle for the Right to Water, *by Maude Barlow. The New Press, New York, London, 2007. 196 pp., $24.95 (hard cover).*



This is a clear and chilling primer on the escalating struggle for the world's diminishing supplies of fresh water, which pits private and institutional interests that are working to turn water into a commodity against a growing water justice movement, which seeks to establish water as a basic human right. "Simply put: life requires access to clean water; to deny the right to water is to deny the right to life," writes Maude Barlow, who heads the Council of Canadians, Canada's largest public advocacy organization.

Some regions of the world are running out of water, she states, and a grim future lies ahead unless action comes soon to avert it. She imagines this scenario 20 years from now: "Desalination plants will ring the world's oceans, many of them run by nuclear power; corporate-controlled nanotechnology will clean up sewage water and sell it to private utilities, which will in turn sell it back to us at a huge profit; the rich will drink only bottled water found in the few remaining uncontaminated parts of the world, or sucked from the clouds by corporate-controlled machines, while the poor will die in increasing numbers from a lack of water."

Point by point, Barlow documents her argument that we are moving toward such a future, then proceeds to lay out a strategy for a different one, starting with a global Blue Covenant with three components: water conservation, water justice, and water democracy. "This, then, is the task: nothing less than reclaiming water as a commons for the Earth and all people that must be wisely and sustainably shared and managed if we are to survive." The emerging water crisis is as threatening to our survival as is climate change, but it gets far less attention. Barlow's book is important reading.

—RG

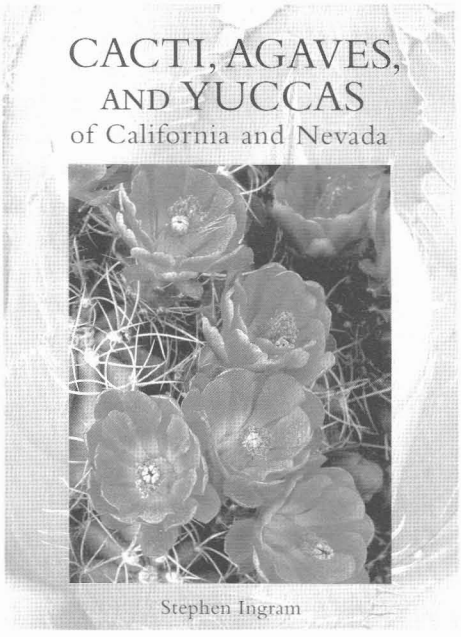
DESERT BEAUTIES

Cacti, Agaves, and Yuccas of California and Nevada, *by Stephen Ingram. Cachuma Press, Los Olivos, CA, 2008. 256 pp., $25.95 (paper), $35.95 (hard cover).*

As a grower and fancier of succulent plants for many years, and an admirer of the many succulent gardens in the Bay Area, I tended to assume that most succulents and cacti were exotics, brought to California from elsewhere. The only succulents I'd clearly identified as natives were a handful of Dudleyas spotted growing on coastal cliffs. Stephen Ingram's new book shows that in fact there are a lot more native succulents (including cacti) in California than I'd imagined.

This book focuses on two plant families, the cactaceae and agavaceae (which includes the yuccas), of which there are about 60 native species. The vast majority grow in the arid south of the state, in desert and mountain regions, but several also occur commonly along the coast. The little prickly pear *(Opuntia fragilis)* grows wild in California only in the Shasta Valley, in northern Siskiyou County.

In addition to species profiles with identifying characteristics and range maps, the book has solid chapters on the plants' evolution, ecology, classification, and habitats,



all generously illustrated with the author's outstanding photographs and lovely paintings by E. O. Murman and Susan Bazell. Images of the fascinating forms and extravagant flowers of these plants make the book as beautiful as it is informative.

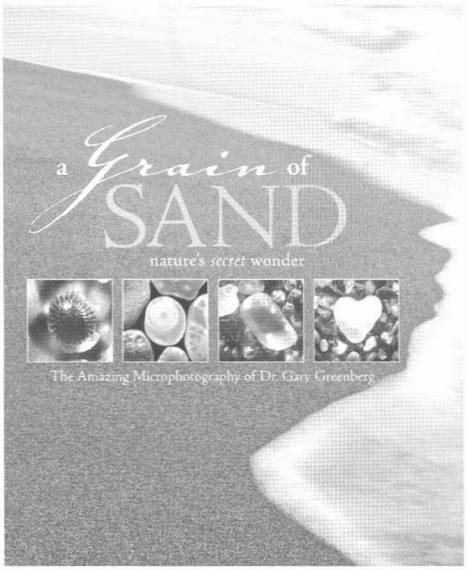
—HMH

TO SEE THE WORLD

A Grain of Sand: Nature's Secret Wonder, *by Gary Greenberg. Voyageur Press, Minneapolis, 2008. 112 pp., $20 (hard cover).*

Taking William Blake's injunction "To see a world in a grain of sand" to heart, Gary Greenberg provides us access to the beauties and complexities of the sand beneath our feet (and notice). Using 3D microscopes that he invented, Greenberg was so taken by the first sample of beach sand he viewed that he began collecting from beaches around the world. From that grew not only a collection of astonishing microphotographs, but a study of what sand is, how it is formed, what its properties are, and much more.

In *A Grain of Sand,* Greenberg explains that sand is not just tiny rock. In addition to mineral sands, there are many varieties of biogenic sand, formed from coral, seashells, diatoms, foramanifera, sea urchin spines, and other life forms. Each beach or



other sand source, such as deserts or the shores of lakes and streams, has its own signature—a mixture of mineral and biogenic grains peculiar to its locale. Even beaches that are adjacent can have different sand.

Perhaps the most surprising aspect of sand revealed in Greenberg's images is the remarkable range of colors. Even from a beach that appears to be dull brown, the magnified grains of sand exhibit a multitude of brilliant colors. The shapes, textures, and patterns of sand grains are just as richly diverse. For a small sample of what's in this gem of a book, see www.sandgrains.com.

—HMH

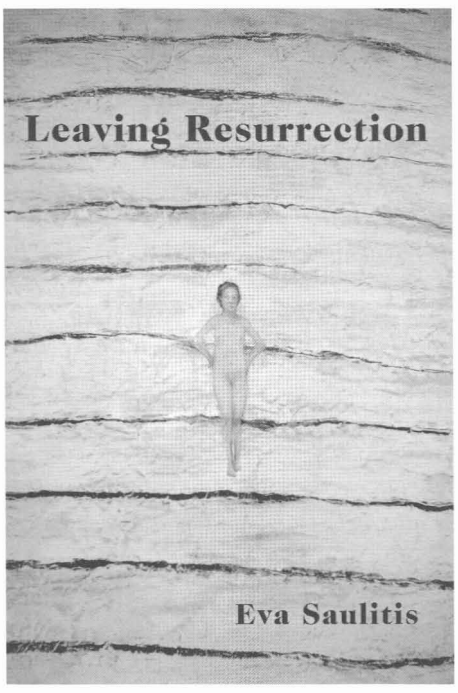
LIVING THE QUESTIONS

Leaving Resurrection: Chronicles of a Whale Scientist, *by Eva Saulitis. Boreal Books, Fairbanks, Alaska, 2008. 205 pp., $21 (paper).*

Not since Peter Matthiessen took me up into the Himalayas via *The Snow Leopard* many years ago have I been so reluctant to finish a book because I didn't want to leave the place it evoked. Matthiessen followed scientist George Schaller to great heights in his quest for a glimpse of the legendary big cat. Eva Saulitis is herself a scientist, as well as a poet and keen observer of inner and outer subtleties. Her territory is Prince William Sound in Alaska, where she has lived for 21 years, tracking and studying a group of killer whales that belong to a tribe of mammal-eating transients. Her small book, a collage culled from journals, is likely to create an indelible landscape in readers' minds, as Matthiessen's famous book did.

The Sound (like the high Himalayas) is one of the "'thin places' on the earth, where the material and spirit worlds exist in close proximity," Saulitis writes in her preface, quoting theologian Peter Gomes. Along the interface between the ocean realm of the whales and the home ground of humans and other land creatures, she explores the relationship between science and other forms of knowledge, and of herself as scientist and as a person seeking answers to questions that go beyond the rigorous limits of her discipline: "How do we reduce suffering? How do we understand who we are and what we mean? Is this the work of science?"

A whale biologist has to be patient and adventuresome. "Our research required that we, on the *Whale 1*, rove the area's labyrinth of islands and passages for months, searching for and following whales. When we couldn't find them we found, usually not people—Prince William Sound is roadless and remote—but evidence of a more-populated past, abandoned towns, mines, herring salteries, cabins, shipwrecks," she writes in a chapter about five summers spent on an island with her younger research assistant, poet Molly Lou Freeman. "We found bears, deer, hidden ponds, and berry thickets. We encountered silence, when, after weeks alone, thinking and speaking blurred like the outlines of islands during storms.



Weather enveloped us, even our minds. The absence of what we were looking for—the whales—swam in our silence."

Eventually, Saulitis's discoveries and the questions they raised led her to search for wisdom among descendants of the people who have lived on the Sound since the last ice receded—which may have been the time when the whales, too, arrived, one of her research partners, Craig Mattson, suggested. Impiaq, Sugpiaq, Chenega, and other indigenous people tell how humans and killer whales sometimes helped each other out, but kept a respectful distance. Stories suggest that whales may once have lived as land creatures, and that humans and whales sometimes changed into each other.

Saulitis does not resolve her questions; she decides she needs to live them rather than answer them. She's a thought-provoking scientist and lyrical writer, so here's hoping that *Leaving Resurrection*, published by a small press in Fairbanks, will reach a wide world of readers.

—RG

Tracking Raptor Migrations

Vast numbers of raptors are once again passing over the Marin Headlands, just north of the Golden Gate Bridge. This is one of the largest raptor migrations in North America, and if you can get there to watch it, don't miss it. Eagles, red-tailed hawks, peregrine falcons, merlins, American kestrels, and many others are passing through on their way south. Waiting for them on Hawk Hill are volunteers and staff of the Golden Gate Raptor Observatory, who have been counting, banding, and tracking these birds for the past 25 years. They report that between mid-August and early December each year an average of 29,000 birds was sighted from 1996 to 2006.

The public is invited to Hawk Hill to watch banding demonstrations and hear hawk talks during September and October, Saturdays at noon and Sundays at 1 p.m. The Observatory is a program of the Golden Gate National Parks Conservancy in cooperation with the National Park Service. For more information visit http://ggro.org or www.parksconservancy.org/our_work/raptor/index.asp.

ESTERO ACCESS

Editor:

I just read an article from 2006 about the Estero Americano.

You should do an article that addresses the rights of ordinary people to access this and other coastal waterways. People have been going out on to the Estero for years, but recent harassment from a few land owners have made use by kayakers drop. Access to the beach is strictly limited, and people paddling the waterway have also been told to leave, despite being out on a waterway in a boat.

If taxpayers are helping to fund grants to clean up the messes that landowners have made of the Estero area, shouldn't we maintain access to the waterway? Why help pay to clean up a waterway if we can't utilize it?

Landowners should be fined and forced to pay 100 percent of all cleanup costs if we cannot paddle the Estero or walk its beach.

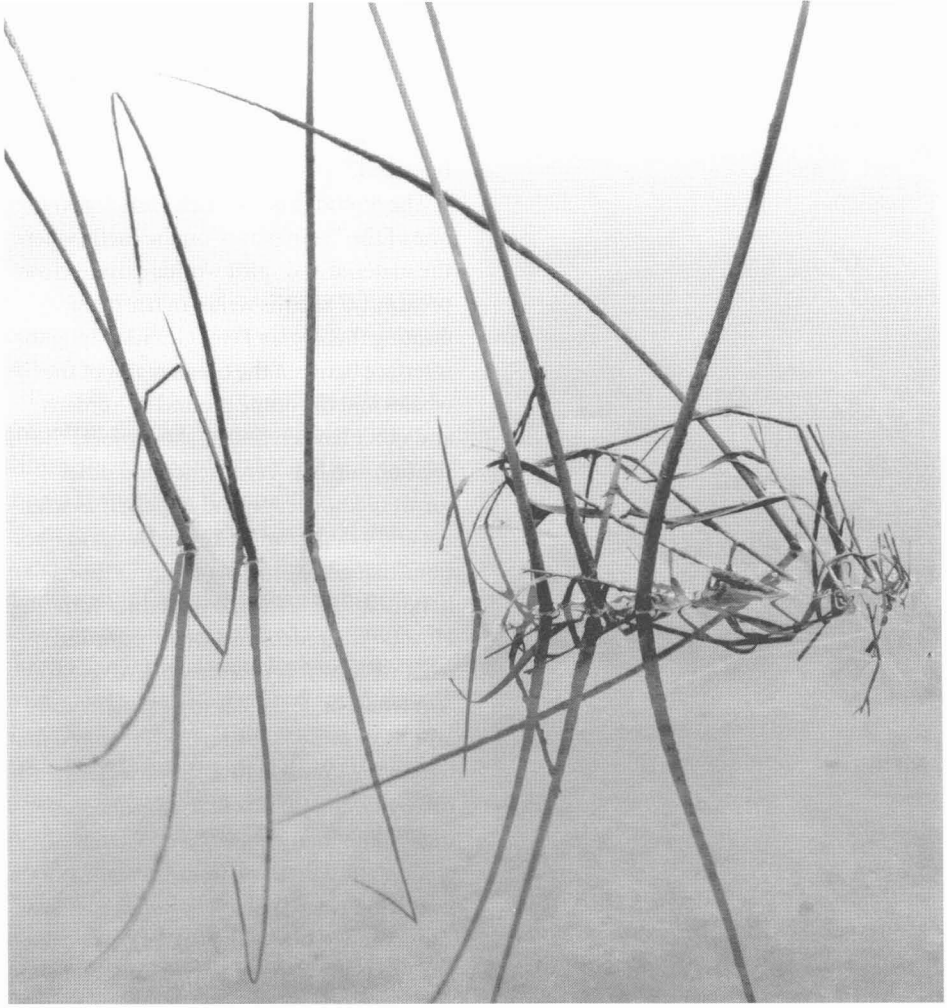
Rich Clarey
Petaluma

Everyone has a right to travel the Estero Americano waterway and walk the public shoreline. River-edge access to the Estero, however, is very limited because roughly 80 percent of the adjacent land is privately owned, and much of this area is in local family ranch and dairy operations. These landowners must meet strict regulatory requirements to protect water quality and riparian habitat. They are working voluntarily with the local Resource Conservation District and public agencies to make the necessary changes in their practices so that agriculture can remain part of the local economy and the marine resources in the estuary are protected. Many are fearful of problems and liabilities they might face if the public comes ashore uninvited. The Coastal Conservancy and local partners are currently discussing how to meet the desire for public access points to link existing sites on Sonoma County waterways, whether through trail easements or future land purchases. The goal would be a balance of sustainable ranch and dairy lands, a thriving ecosystem, and safe public access to waterways from established public access sites, not over private lands.

One opportunity now available at the Sonoma Land Trust's Estero Americano Preserve is to join LandPaths, Inc. (www.landpaths.org) for guided kayak tours on the Estero. While there is no public access point at the Estero Americano Preserve, positive relations with neighbors have helped the guided tours to continue. For information on other waterside access in the county, especially on the Russian River, see www.parks.ca.gov and www.sonomacounty.org.

The Bay Conservation and Development Commission and others are working toward a San Francisco Bay Area Water Trail. Plan details can be found at www.bcdc.ca.gov.

—Ed.



Reeds at Guadalcanal Village wetlands, Mare Island

SALLY MACK

MORE TO SEE ON MARE ISLAND

Editor:

A friend showed me your article on Mare Island in your handsome publication, with which I had not been familiar. I was glad to see it; Mare Island truly is suspended in time.

There's at least one more interesting facet to Mare Island: Guadalcanal Village, a CalTrans wetlands restoration/mitigation site, not open to the public, is slated to become part of the San Pablo Bay National Wildlife Refuge within a few years. I've been photographing the site since 2001 (see www.sallymack.us). Its odd name is a holdover from the name of the housing development built on the site in the 1940s and later abandoned. I have permission from both the Caltrans project manager and the manager of the refuge to photograph there.

Sally Mack
Vallejo

Serpentine Haiku

I.
Under the walnut tree
A rattlesnake crawls away
From serpentine talk.

II.
Serpentine, ophiolite
Make no difference to snakes
Even if they slither.

III.
Black trunked blue oaks
Avoid ultramafic serpentine:
Tree osteoporosis.

IV.
Red and green serpentine
Keep out alien invaders—
Except ORVs.

V.
Prickly dry goat grass
Sinister invader from Greece:
We will rip you out!

VI.
Serpentine ghost pine:
You are not as indifferent
As you lead us to think.

VII.
White flowered tarweed:
Are you a star thistle refugee
Or just indifferent?

VIII.
Are monkey flowers proud
Of their endemic status
Or grow, regardless?

IX.
Serpentine sunflower!
Helianthus exilis!
Glory in exile!

X.
In serpentine seeps
Among hardened tire ruts:
Frogs, snails, and sunflowers!

XI.
Beady-eyed turtle:
I am amazed to find you
Living among seeps.

XII.
Turning over rocks
In a serpentine trickle
I find ancient stoneflies!

XIII.
Tiny purple vineweed
I am sorry I stepped on you:
Life is hard enough.

Peter B. Moyle, from Putah and Cache:
A Thinking Mammal's Guide to the Watershed,
http://bioregion.ucdavis.edu/book/Contents.html

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