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COAST & OCEAN

VOLUME 17, NO. 1

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Oil Rigs and Fish
Crystal Cove Turnaround

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Reporting on Our Coastal Commons

DRIVING ALONG THE COAST ONE recent morning, listening to radio news, I thought how helpless we, as citizens, seem to be in the face of predatory forces. There is more and more evidence that we have less and less power to shape our communities and nation: farmers going under because of cheaper (even if less tasty) imports, families and cultural institutions pushed out of our cities by exorbitant rents, the energy crisis, the dubious presidential election.

Before long, however, the always-astonishing beauty of the open coast expanded my mind's horizon. Here was clear evidence to the contrary. This shoreline with its naturally eroding coastal bluffs, these farms and forests and living marshes exist only because Californians refused to be helpless three decades ago.

Before 1972, the coast was headed toward a dismal future of freeways and private developments in every region, even offshore on Santa Monica Bay. Much of the shoreline was to be walled off and privatized, wetlands were to be dug out and reshaped into marinas.

But then voters ordered up something else. They passed the Coastal Initiative, declaring "it is the policy of the State to preserve, protect, and where possible, to restore the resources of the coastal zone for the enjoyment of the current and succeeding generations."

After four years of debate a Coastal Plan was enacted into law in 1976 as the California Coastal Act, the broadest and strongest land use law in the nation. It created the Coastal Commission to regulate coastal development in keeping with the citizens' mandate. Separate legislation created the Coastal Conservancy, a unique agency with broad powers to find nonregulatory ways to resolve land use conflicts and to advance the purposes of the Coastal Act.

These standards have governed what's been done on the coast ever

since. Development continues, but public access comes with it—as does protection for views, natural habitat, farmland, and the "special character" of coastal communities, an elusive quality, but one we can all enjoy.

Broadly speaking, the Coastal Act and the agencies working under its umbrella are intended to preserve the coastal commons: the indivisible public good that exists for everyone or is lost to all.

In 1972, citizens saw that a wall of houses would soon block sweeping vistas and public access to the shore unless the common interest was put into law. Even those fortunate enough to own homes on the beach would soon have to look at that wall, and would have diminished access. Many beaches would have lost their sand to hard structures erected to protect individual lots. The state's most famous natural and economic asset, its magnificent coast, would have been wasted and degraded. No, said the citizens.

It's amazing, thinking back, that they succeeded. But they ventured and they won. Since then, the Coastal Act has enabled citizens to win many battles for places precious to them. Almost every coastal stream, lagoon, and marsh has a "Friends of . . ." group. They monitor water quality, restore habitat, build trails, teach others to cherish their natural heritage. Local land trusts have grown in strength, number, and scope. Many were formed and funded by the Coastal Conservancy, which pioneered in building partnerships with local citizen groups. As more people became personally involved with their home landscapes, support for coastal protection kept growing.

The magazine covers the California coastal commons. Among many excellent local and regional publications, it is the only one dedicated to the state's entire coast. Founded by the Coastal

Conservancy and now published in association with the California Academy of Sciences, it begins its 17th year with this issue.

We look at ways separate local events and activities mesh to form larger patterns and coastwide goals. Restored wetlands nurture not only resident species but also long-distance avian travelers along the Pacific Flyway. Local trails connect into trail networks. Piece by piece, the coast-long California Coastal Trail materializes.

We watch for important trends—alarming or encouraging—covered lightly, if at all, in the general media, such as the impacts of private incursions into public accessways (Summer 1999). The story of Crystal Cove (p. 3) may or may not be a straw in the wind.

Our readers are diverse, but share an uncommon interest in the coast. We bring them news about issues of public concern that land managers, scientists, and policy makers debate among themselves. This issue, for instance, looks at the nation's first Habitat Conservation Plan (p. 16), and at the controversy about the value of artificial fishing reefs and the proposed conversion of oil platforms to reefs (p. 22).

We feature people who lead the way in coastal stewardship, as David Schooley has at San Bruno Mountain (p. 7). We write of creatures (red-legged frogs, this time), places, and serendipities. Take a look at the AndEarth story (p. 17) and Bill Ahern's adventure (p. 26).

We work hard, but enjoy doing this, and the response of our subscribers encourages us. On my drive that recent morning, dismal thoughts of powerlessness disappeared in light of the quiet, persistent, life-sustaining efforts of so many people, little-known beyond their home places, and of even lesser-known public servants. Gratitude defeats hopelessness.

—Rasa Gustaitis



Could the tide be turning against privatization of our parks?

THE DRAMA OF CRYSTAL COVE

MARC BEYELER

MAKING A DRAMATIC U-TURN, the California State Parks Department has canceled a four-year-old lease to a developer that gave him the right to convert the 46 historic cabins at Crystal Cove State Park, in Orange County, into a \$35 million luxury resort.

A broad coalition of local citizens and environmental groups overcame seemingly insurmountable legal and financial obstacles in convincing state officials to negotiate the termination of the private concession contract. The Coastal Conservancy made it possible for State Parks to buy back the lease by picking up the \$2 million tab.

The contract was signed during the administration of former governor Pete Wilson, "at a time of different economic realities and different perceptions of the privatization of state parks," explained State Parks Deputy Director Mary Wright. She acknowledged that, given the overwhelming public opposition, it "clearly did not reflect community interest on the coast."

The surprising turnaround may signal a shift away from the trend toward privatization of public parklands, according to David Beckman, senior attorney with the Natural Resources Defense Council, who represented Defend the Bay, an Orange County advocacy group, in the Crystal Cove controversy.

It had seemed unstoppable, a done deal. In 1997, State Parks had signed a 60-year lease with Crystal Cove Preservation Partners, headed by Michael Freed, who wanted to turn the vintage cottages at this secluded public beach into overnight guest cabins that would rent for \$375 and up per night. He also proposed to build a swimming pool, a public boardwalk, and to provide other amenities.

Local residents were outraged. They had not been consulted. No public hearings had been held before the lease was signed. Their protests, however, fell on deaf ears. By January this year, the project was well into the design stage.

Crystal Cove lies at the heart of the 2,700-acre Crystal Cove State Park, which extends along 3.25 miles of coast between Newport Beach and Laguna Beach, offering a respite for the eyes of travelers emerging from long stretches of urban sprawl along the Coast Highway. Purchased in 1979 from the Irvine Company for \$32.6 million, the parkland reaches to bluffs and beaches, and into the wooded canyons of the San Joaquin Hills. For miles on the ocean side of the road the landscape is free of human structures. Offshore is the Irvine Coast Marine Life Refuge. But on the inland side luxury homes and townhouses invade the coastal scrub of the rolling hills.

If you turn east from Highway 1 just



PHOTOS THIS PAGE: ©WWW.JOHNCONNELL.COM



ISABELLE DUVIVIER

north of the famous Shake Shack and park in the Los Trancos lot, you will find a path that descends to a tunnel leading under the highway and to the mouth of the creek at Crystal Cove. Once you've seen it, you will understand why local citizens fought, and continue to fight passionately, for a voice in shaping this park's future.

The cove beach is wide, bracketed by rocky headlands. The sand is white, the water gentle—so gentle that dolphins come here to give birth. Along the bluffs at the back of the beach is a picturesque collage of cottages. Wind chimes tinkle from the eaves of a blue cabin, an artist's studio. On its wall is a clock that always reads ten minutes to four; beneath it a sign explains: "Crystal Cove Standard Time."

These cottages seem to have grown organically, accreting with a new deck or bay here, a new wing patched in there, much the way driftwood castles are built in the sand, without expectations of permanence. Today, Crystal Cove is the last remaining example of a former southern California beach scene. Coming here for the first time, many visitors feel they have stepped into the past.

Early in the last century, the Irvine Company began to rent land to vacationers who built beach cabins. Between the 1920s and 1940s many of these were expanded and formalized as both seasonal and year-round residences. A Hollywood producer who leased the cove for South Seas films left some sets, and these were turned into houses. Eventually the "beach community" of 46 cottages became a permanent feature of the Orange County coastline.

In 1979, when State Parks bought the park, the beach colony was designated as



MARC BEYELER

the Crystal Cove Historic District and was added to the National Register of Historic Places as "the last intact example of vernacular beach architecture" on the southern California coast.

A Shocking Development

Not until the night of January 18, 2001, did State Parks officials or the prospective developer realize just how local people felt about this place and its proposed future. That was the night of the "informational" community meeting State Parks called to "explain" details of the Preservation Partners' plan and describe the public access amenities and preservation features that were to be part of it.

Parks Director Rusty Areias wanted to clear up any misconceptions about the resort's effect on public access. Freed came ready to explain that although 75 guest rooms would be created in the cottages, which he would restore, the public would have complete access to the beach, a restaurant, an interpretive center staffed by a marine biologist, and a 132-room youth hostel.

The outcome of that meeting was as surprising to State Parks and its lessee as news of the lease had been to the community four years earlier.

Outside the auditorium of Lincoln Elementary School in Corona del Mar, tables had been set up and stacked with leaflets. People were holding up signs. "Listen well to citizens' pleas, we won't take *fait accompli*" one warned. "No resort!" others proclaimed. The overflow crowd of more than 600 people shouted down official speakers. When Freed tried to explain where the public amenities were to be, someone yelled: "Put them in Riverside!"

Opponents pointed to several "fatal flaws" in the concession plan, including the proposed overnight rates, which would be beyond the means of most park visitors; and they expressed fears that the general public would be discouraged from using the beach after the resort was built, no matter what was being promised now. They said State Parks should not be involved in the luxury resort business and contended that the concession plan violated the 1982 Park General Plan, which had been drawn up with extensive citizen participation. They demanded a chance to create their own proposal.

Soon after, State Parks announced: "We are looking at alternatives."

Enter Joan Irvine Smith

The solid front of opposition demonstrated at this meeting had coalesced after years of activism by residents of the beach colony and nearby communities and by organizations that included the Sierra Club, League for Coastal Protection, and CoastKeeper. That coalition had gained substantial clout just days before the meeting, when Joan Irvine Smith, heiress to the Irvine Ranch, announced her opposition to the resort.

Smith, founder of the Orange County Art Museum, is the great-granddaughter of James Irvine, whose vast land holdings, some 120,000 acres, extended from Cleveland National Forest to the ocean. Now 67, she and her mother, Athalie Irvine Clark, had long battled in court against the privatization of land family members had allotted for parks.

Fresh in Smith's mind was the thought of the bayfront property her grandfather, James Irvine Sr., had donated to the City of Newport Beach in 1946, a year before his death. Although he intended it to be a park, it is now the site of the exclusive Balboa Bay Club. In 1973, fearing that Crystal Cove might also be privatized if State Parks bought it, she had opposed the Irvine Company's proposed sale of three miles of shoreline to the state for \$7.1 million. "The state had acquired 2.5 acres in Huntington Beach and a private condo stands there now, the Huntington Pacific," she explained. It was after that court challenge was resolved that State Parks bought the parklands, paying \$32.5 million.

Smith's entry into the fray gave resort opponents the political and media attention they needed. At the January 18 community meeting, the audience chanted: "Let Joan speak!" When she stood up to do so, her basic message was: "We must keep the park for the people."

During the weeks after that meeting, strategy sessions were held at Smith's ranch in San Juan Capistrano. Resort opponents agreed to put differences aside until they could defeat the resort project. On February 5 Smith talked with Paul Morabito, a Laguna Beach resident recently appointed to the seven-member Coastal Conservancy. On February 8 Smith and Morabito, a fundraiser for Governor Gray Davis, talked with the governor.

A week later, on February 16, Governor Davis announced a "breakthrough agreement." His press release stated that Secre-



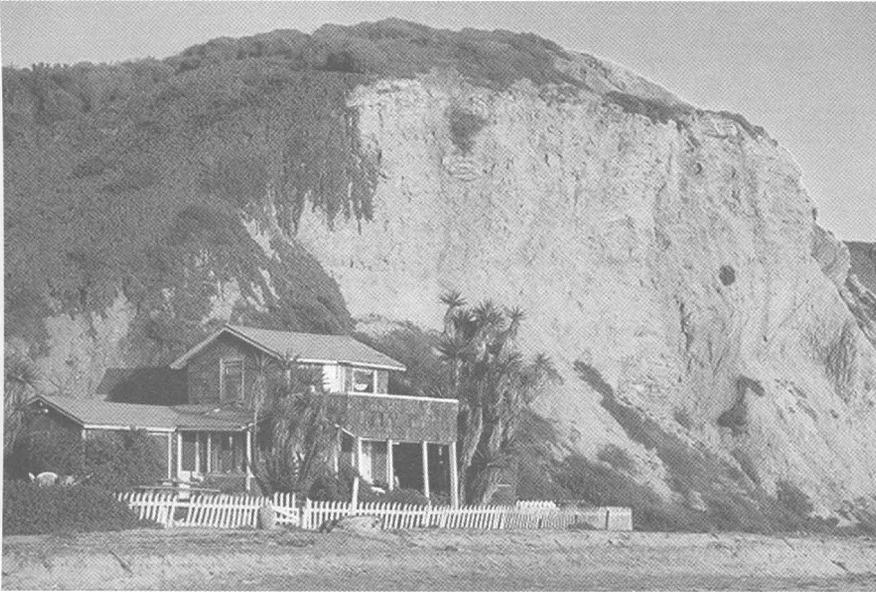
tary Mary Nichols was asking the Coastal Conservancy to provide up to \$2 million for buying out Preservation Partners, adding: "This truly is a triple-win. It is responsive to the local community, expands environmental protection, and reimburses the developer for costs incurred up to now."

Theoretically, the Coastal Conservancy could have denied the governor's request: \$2 million was a lot—22 percent of the \$9 million in undesignated funds the Conservancy had available for a variety of public access and other projects. Spending that amount on Crystal Cove would mean, for instance, that there would be less to spend in Mendocino and Los Angeles Counties, where public access to the coast is scarce. However, Conservancy members saw merit in the expenditure. Like other unique coastal areas recently protected for the public and wildlife at great expense, Crystal Cove was priceless. In addition, spending that \$2 million now "averts litigation that could tie up state resources for years," pointed out Sara Wan, who as chair of the Coastal Commission is a Conservancy member.

On March 22, the Conservancy met in Laguna Beach and the principals summed up their case one more time.

Laura Davick, founder of the Alliance to Rescue Crystal Cove—her parents met there, and bought a house there when she was one year old—said that "within a ten-mile radius of Crystal Cove, there are 15 luxury resorts, 4,000 luxury hotel rooms, and another 1,600 in planning. That's enough. Crystal Cove should be for the people."

Jeannette Merrilees, representing the Sierra Club and Save Crystal Cove, argued that "a flawed process led to this. That



point has been central in the Sierra Club's four-year campaign opposing the resort. We look forward to participating in a public process." Buying back the lease "will say that we don't tolerate a contract that gives away a state park."

David Beckman of the Natural Resources Defense Council and Defend the Bay asserted that termination of the concession contract represented a positive precedent for the state and potentially the nation. He told the Conservancy: "You are striking a blow for the right approach, the right direction for this state."

When a speaker asked that the Conservancy "put the final nail in the coffin" of the resort project, chair Gary Hernandez deadpanned: "We like to think of ourselves as glue, between State Parks and others, in this case." The vote to grant \$2 million to buy out Preservation Partners was unanimous.

What's Next

Citizens had triumphed, but the forces were with them. Since the fight began, the administration and legislature in Sacramento had changed, the economic climate had improved, and more funds had been made available for coastal conservation. All that, plus the high-profile advocacy of Joan Irvine Smith, helped to turn the tide.

Having saved the Historic District from privatization, the next challenge for state officials, local residents, and environmental groups is to agree on its future and find the necessary financial resources to bring it about. "Though it's clear what everyone does not want," State Parks' Mary Wright

observed, "what will come out of the planning process is not clear."

Smith would like to see some of the cottages put to use as a retreat for artists, scientists, and screenwriters. The county sheriff would like to use some of them and the beach in his program to train deputies to enforce regulations that protect tidepools. Others want an environmental education center or a hostel, and some want none of the above. For many, it's the beach that matters most.

Crystal Cove residents, who had fought off eviction attempts since 1979, have agreed to move out by July 8, after one final Fourth of July celebration. State Parks has pledged to work with citizens to complete a preservation and public use plan for the Historic District, to protect the cultural and natural values of the cove, and to provide public access and recreational opportunities. Concerned parties are demanding that State Parks institute an open and fully accessible public planning process.

As a first step, State Parks officials have proposed a nine-month planning process. It began with a public workshop April 26. About 200 people attended, including a strong contingent of State Parks officials from Sacramento, who outlined plans to fence off the vacated cottages while reuse is being considered, and to protect them with lifeguards and rangers. As for citizen input, many wished to speak, and the time allotted proved insufficient for everyone to be heard. Controversy about reuse is likely as different futures are considered in the months ahead.

Should the cottages be fortified so they will stand for many years, or should they simply be maintained as residents have maintained them, and used for public benefit until natural elements bring them down? There's a water quality issue to deal with as well: some of the septic tanks may be polluting the beach. And, no matter what is finally decided, funding will have to be secured.

Meanwhile, Crystal Cove will continue as a peaceful remnant of what now seems to us a simpler past, when the informal, random, intimate, and familiar were the rule of the day. That's precisely the "feel" many of us seek when we visit the beach. And the beach is ours to visit. ■

Marc Beyeler has managed numerous projects during his nearly 20 years on the staff of the Coastal Conservancy. Among these is Crystal Cove.





Secrets of San Bruno Mountain

RASA GUSTAITIS

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HOUSANDS OF PEOPLE DRIVE BY SAN BRUNO Mountain daily on Highway 101, seeing little more than the cluster of radio towers that bristle from its peak. The words "South San Francisco, the Industrial City" are branded in white concrete on the steep slope of a southern foothill.

Only from the air does it become apparent that this is indeed a large mountain, with two parallel ridges that extend diagonally across the San Francisco Peninsula for nearly five miles, and canyons that drain toward both the bay and the ocean. It is the only large open space amid unrelieved urban development, and from the aerial perspective it is clearly besieged on all sides, as industrial buildings crowd it at the base and houses march up its slopes in scattered clumps and tidy rows. Then again, if you soften your focus, you can almost imagine you're looking down on an island, and the landscape around it is composed of shells and pebbles tossed up along its shores. That would, from a long-range perspective, be almost accurate, for a few million years ago San Bruno Mountain was, in fact, an island.



PHOTOS THIS PAGE COURTESY SAN BRUNO MOUNTAIN WATCH

- Top: The endangered mission blue butterfly**
- Center: Mission blue caterpillar on rare lupine**
- Bottom: Rare arctostaphylos manzanita**
- Left: Dwarf plaintain**

BACKGROUND DRAWING BY LEE ADAIR

Only because many people, particularly those living nearby, fought long and hard to save the mountain did this precious native California landscape survive to this day.

David Schooley holds a gopher snake for South San Francisco children to admire, in Paradise Valley in the 1980s. "That's all houses now," he says.

TODAY FROM THE 1,314-FOOT summit you can see how the entire Bay Area landscape fits together. There is Mt. Tamalpais to the north, Mt. Diablo to the east, Montara Mountain to the southwest, and the Santa Cruz range extending southward. You can also clearly see that the mountain meets the ocean at Lake Merced, in San Francisco. In 1769, when the Portolá expedition discovered California's largest bay, its waters still lapped at the base of this mountain.

That watery perimeter and associated salt marshes are long gone, victims of a defunct way of thinking. In the early part of the 20th century, the marsh became the repository for San Francisco's garbage. The transformation of the bay shore to the northeast was completed when in the 1950s a foothill was cut down to build Candlestick Point and the saltmarsh was completely filled.

This part of the San Francisco Peninsula became the place to put things nobody wanted to see: a slaughterhouse (near the Cow Palace), garbage dumps, dirty and toxic industries, cemeteries. Not surprisingly, residents in the surrounding towns—Daly City, Colma, South San Francisco, Brisbane—tend to be people of modest

means. In the midst of all this, however, San Bruno Mountain remained—a beautiful city's backyard mountain, a place where secrets can survive in the open, behind a screen of neglect and blight.

Hidden in Plain Sight

DAVID SCHOOLEY, A POET WHO GREW up and went to university in Berkeley, was living in San Francisco in the early 1970s, working as a dispatcher of tow trucks to stranded motorists. He too had passed San Bruno Mountain many times without seeing it—until one Sunday when he set out, by Greyhound bus, in search of a quiet place to go on weekends to clear his mind of urgent two-way radio voices. Just beyond the Cow Palace exit off Highway 101 he glimpsed a small town tucked up against a large hill. When the bus pulled off into that town, Brisbane, he decided to check it out.

It took him only a few minutes to find a path up the hill. He walked right into an oak forest, then down a canyon with a running creek shaded by buckeyes. On the canyon's other side was a wind-sheltered meadow where he saw broken shells on the ground: a shellmound, something he knew



about. He also recognized yerba buena and other plants that he knew were natives, growing together as though nothing had changed for more than two hundred years. "I just couldn't believe it," he later wrote. "Why had I been given this miracle?"

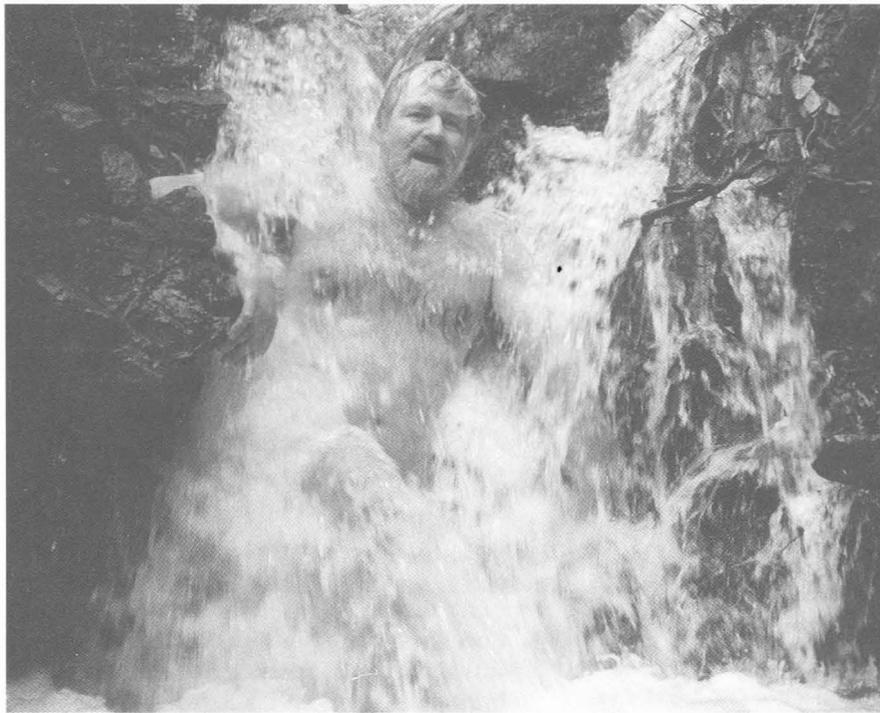
Schooley soon moved to Brisbane to continue his explorations. He found more canyons, creeks and even waterfalls, meadows that bloomed in colorful profusion, trees and boulders that spoke of the ways people had lived here before the Europeans arrived. He found three more shellmounds—only one of them was on the official archeological maps at San Francisco State University. He wrote:

It felt like a vital open secret, hidden just below visibility in our cultural focus. No Yosemite, no looming Tamalpais. No redwoods. Not even a Bishop pine. It was mercifully the neglected stone. *Lapis Exilis*. I thought of it as the stone cast away by the builders which, in Jesus's parable, it is said we must find and make our cornerstone as an altogether different kind of builders. If we could learn to see and involve ourselves carefully with its quiet life, there might be more than hope for the planet and ourselves on it.

Walking Back in Time

EVER SINCE THE DAY HE FIRST walked on San Bruno Mountain, Schooley's life has been intertwined with its "quiet life." He has continued to learn about it, to defend it against multiple attempted assaults, and to work tirelessly to enable as many people as possible to know and appreciate it. Understanding that what he has come to love so dearly can survive only if it is loved and cared for by those who come after, he has taken countless school groups up the mountain and introduced them to its secrets. Virtually every Saturday morning for more than two decades he has also led walks for anyone who wanted to go. These walks are especially popular in spring wildflower season. More and more people have come and marveled at this last intact remnant of the landscape as it was before there was a San Francisco, a Daly City, a Brisbane—or a California.

One early spring day, nine people, including five children, gathered at 10 a.m. at the San Bruno Mountain Watch headquarters in Brisbane for a hike to Buckeye and Owl Canyons and a visit to the crystal



PHOTOS THIS SPREAD: SAN BRUNO MOUNTAIN WATCH

cave in Devil's Arroyo. We drove to Crocker Industrial Park, crossed the quarry road and entered another time and place.

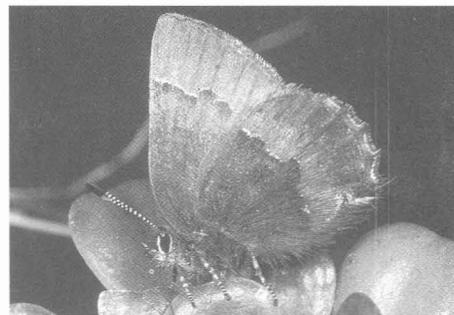
The meadow before us was lush, dotted with blossoms of varied colors. Our eyes swept uphill toward oaks that glowed gold as the sun illuminated their bright tips of spring growth. All urban sounds had disappeared; instead, a red-shafted flicker's song filled the air. Against a south-facing rock outcrop a cluster of blue lupine was in bloom. Schooley stopped beside it, squatted, and the children clustered around him.

"This is the home of the mission blue butterfly," he explained. "It's one of the first lupines to bloom, because this is a warm spot. The butterfly puts its eggs on this plant. . . . In spring, out comes a little caterpillar. Look." He has brought some photographs, for it's still early for caterpillars to be out. There's an ant on the back of the one in the picture. "The ant clears and protects the caterpillar from parasites as it gathers the sugar that forms on him. So it's two little creatures helping each other. This butterfly is rare and endangered. It needs to put its eggs on this plant. If the plant isn't here, it dies."

We walk up a ways, then stop next to a deep brown and yellow flower: "Here's Johnny jumpup, home to the silverspot butterfly, which is cocooned right now in the roots of this plant. Soon it will come out. Most caterpillars come out by day, in the morning. These come out at night. No

Top: Few people know there are waterfalls in Devil's Arroyo.

Bottom: The endangered San Bruno elfin butterfly





Top: Persistent eucalyptus sprouts from old stumps along a remnant of Old Ranch Road trail.

Below: Zygodene

Bottom: San Francisco wallflower



one had taken a photograph of that until a little girl from Hunters Point did. She came here and waited until she saw it. She was 11 years old."

The trail winds upward on the slope between Owl and Buckeye Canyons, past clusters of willow and coyote bush entangled with cow parsnip, yarrow, and poison oak. Schooley passes around a jar of fragrant seeds for all to smell. "Poison oak, shiny and sweet," he says. "Best to know it rather than just be afraid."

Next stop: osoberry bush, a favorite of the grizzly bear: "Spaniards wrote of killing a grizzly bear in Daly City. There are no stories of fear or horror. I suspect they had their territories. In 1860, 10 people with 10 guns came out here to kill grizzlies. They had killed a cow, laid out meat, and sat in the bushes to wait. Seventeen grizzlies came. The men only had 10 guns so they snuck away." So goes the story.

Here's Monradella mint, tiny and very aromatic. Wild cucumber. And the endangered San Francisco wallflower—first sight of it for some of us. At a grassy spot sheltered by bushes, goldfields, coast rock cress, and buttercup are blooming. "Fifteen years ago this place was covered by French broom," Schooley says. "We've been pulling it every year. This year, for the first time, I don't see any in the canyon. And look, the natives have come back." It's a large island of successful restoration—but not secure: the next week Schooley would spot a sprig of broom near here and would come back later to take it out.

Restoration requires much weeding. Among several alien invaders the most vis-

ible, when in bloom, is gorse. We saw it on the lower reaches of this trail. Mountain Watch has regular workdays when volunteers pull it out. But it keeps coming back, from seeds carried by birds and blown by the wind to new places. We see a golden mass of it to the west, on the saddle.

An environmental consultant working for San Mateo County has been trying for 18 years to eradicate it on the saddle, and has tried herbicides, burning, and other methods. Yet there it still was, blooming bright and dense. Meanwhile, rattlesnake grass, velvet grass, and Italian ryegrass are spreading, as is fennel. Pampas grass, eucalyptus, German ivy—there are battles under way against all of them on different parts of the mountain. If these exotics take over, they can destroy the integrity of native plant communities.

For truly, this wild place can survive only with the help of patient gardeners. Also needed is fire, carefully managed, to restore some of the grassland now being choked out by bushes. There has been no fire for a long time here, and land management agencies are talking of its necessity now.

We stop to smell mugwort, to examine a hazelnut ("tasty if you get it before the raccoons do"). So many fragrances, so much that can be gathered as food, spices, and medicine. Native delphinium is still in bud. Ferns and snowberries grow along the path, which is narrow to minimize human intrusion: "When I made this trail, I saw a rabbit dropping. A week later I came back and saw part of a rabbit's foot. A fox had gotten him. He had his secret little path and I had opened it up." Even with the best intentions it is so easy to upset natural balances.

Toyon, Christmas berry. Beeplant, home of the checkerspot butterfly. Everything around us is native. Here's sedum, dark green florets with white centers, vital to the endangered elfin butterfly that now exists only on this mountain, as far as is known. "Caterpillar eats the dead sedum leaves and turns red," says Schooley. "Why? On the yellow flower it's totally visible. The only thing I can figure out is that when it goes to bed at night on the red leaves it's invisible."

The secrets of the mountain keep unfolding. We stop in the shade of a huge oak, branches reaching along the ground, and sit down to hear about the hermit who lived on the mountain. He was a music teacher at a local school until one day something happened—the last straw—and he walked out

of the classroom and onto the mountain. He built a shelter on the south side and lived there for seven years. The park ranger knew but saw he was picking up trash, weeding out alien plants, and causing no harm. Teachers began to bring groups of children up to see him. But eventually a local councilman found out and demanded: Get this guy out, he's disturbing nature. The hermit was evicted, but he built another shelter on another part of the mountain. A teacher who had brought half her class to his old place pleaded to be allowed to bring the rest of her students to his new home. He agreed, for just that one time. The teacher and the hermit fell in love. They now live in a house not far away, on the coast. In their garden they grow native plants from the mountain. Schooley knows the two of them well.

Eventually we came to the cave the children had wanted to see. Each found crystals. We wound our way down again, and reluctantly returned to our cars. Schooley had shared the magic he had found. There was no telling what everyone carried away and what would stay with the children as they grew.

Thanks to Long Struggle

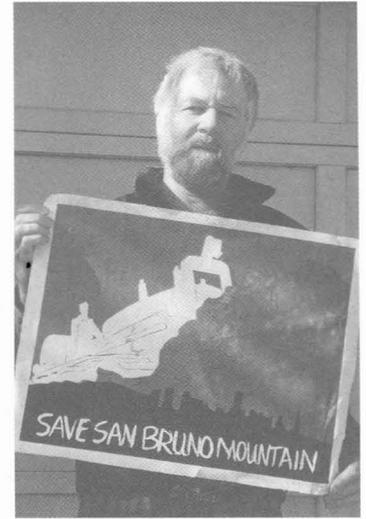
ONLY BECAUSE MANY PEOPLE, particularly those living nearby, fought long and hard to save the mountain has this

precious native California landscape survived to this day. Schooley had barely gotten acquainted with it when he heard of plans to destroy it.

The mountain remained relatively undisturbed into the 1970s, in large part because it had been in single ownership since the 1880s when Charles Crocker acquired 3,997 acres along the bayshore. When his estate was distributed in 1891, the lands went to the Crocker Land Company. In the 1950s a proposal that now seems mad was considered: to cut down the mountain to use as fill for expansion of San Francisco Airport into the bay. But that came to naught, and no other big proposals materialized until 1974.

By this time the Crocker Land Company's owner was Foremost McKesson, Inc., and it had come up with a plan that was almost as appalling as the first. In a joint venture with Visitacion Associates, it proposed to build high-rise residential towers, office buildings, single-home subdivisions, a shopping center, and a skating rink on the mountain. Some 30,000 people would live, work, and play in the new development, which would cover shellmounds, pave over meadows, and cut off the free flow of creeks.

Schooley was not the only one who was horrified. Among outraged local residents was Bette Higgins, a feisty lady who, with a neighbor, confronted the president of Foremost McKesson: "He gave us an appointment. And we went up and he said,



David Schooley (top and below left) and volunteers have battled for decades to save San Bruno Mountain.



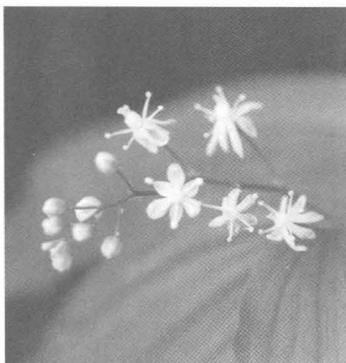
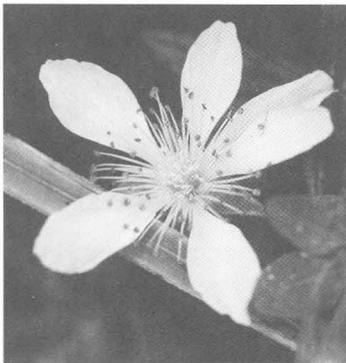
PHOTOS THIS PAGE SAN BRUNO MOUNTAIN WATCH



Top: Ken McIntire, science teacher at Sterne School in San Francisco, teaches his 11th graders to identify native plants. In April, they sampled plants within a 100x100-foot quadrant on San Bruno Mountain as part of a long-term study, now in its fifth year. Students also pull Italian thistle during this annual field trip.

Below: Bitter cherry

Bottom: Solomon's seal



'What can I do for you ladies?' And I said, 'You can give us San Bruno Mountain.' . . . And he said, well, he really couldn't do that. . . . And I said, 'There's just no way it's going to happen. Let's all save ourselves a lot of time and trouble. . . . We are in the north end of the county and we have no open space. And we deserve a park. . . . We pay taxes. Where's our park?'

Higgins put a sign in her front window, "Save the Mountain," and Schooley spotted it. He knocked on her door. Together they founded a citizens group that led the way to the defeat of the Visitation Associates development and the creation of a state and county park, which now encompasses 1,950 of the mountain's 3,600 acres. That effort took years, and many marches, protests, and hearings. The battle focused mainly on keeping open space, although some people were aware that the mountain was the last intact remnant of what had been here before the arrival of Europeans.

To Elizabeth McClintock, at the California Academy of Sciences, who in 1968 had published *A Flora of the San Bruno Mountains*, the place was "a botanical treasure." James Roof had started the California native plant garden in Berkeley's Tilden Park and, inspired by childhood explorations of the mountain, had included a section devoted specifically to San Bruno Mountain plants. Both were major allies in the fight for the park and the struggle still ahead.

"We didn't know there were rare and endangered species here till after" the park was created, said Schooley. That news came some months later when, on a site targeted for residential development, the endangered mission blue butterfly was found.

Further investigation turned up 22 rare and endangered plants and animals, including two more butterflies.

The discovery of the mission blue butterfly on the northeast ridge put a temporary stop to development, but the ensuing controversy about property rights versus species survival rights led to a split in the original citizens group, then called Save San Bruno Mountain.

One of the original members and five others who had recently joined, including local officials, argued that property rights required compromise. Most of the original members, said Schooley, held that "compromise is great for politics, but you can't compromise life." The pro-compromise faction proceeded to meet with developers and public officials and worked out a plan, the HCP. Because the splinter group was using the name Committee to Save San Bruno Mountain, Schooley and his allies changed their name to Bay Area Land Watch, and later San Bruno Mountain Watch.

The San Bruno Mountain HCP—the first HCP in the nation—was completed in 1983. It was cited as the model for a 1983 amendment to the Endangered Species Act that permits some "taking" (i.e., killing) of endangered species by habitat destruction on private land, provided that landowners set aside a "preserve" for the species and create a funding mechanism for its maintenance. As a result of this HCP, prime butterfly habitat on the northeast ridge of San Bruno Mountain was developed, while the moister, cooler—and less prime, for both butterflies and humans—saddle, within the park, was designated for restoration as habitat. In addition, developers were to offer to dedicate some acreage as open space. In theory, the HCP provides a net benefit for the species while allowing for the exercise of property rights. How that worked out on San Bruno Mountain remains highly controversial even now, more than 18 years later (see p. 16).

Over the years, thanks to long and hard work by citizens, three shellmounds have been protected, and more habitat land has been secured, piece by piece. Although the HCP allowed development at Buckeye and Owl Canyons, the elderly owner of this land, with whom Schooley was friendly, told him he would sell for a reasonable price if the land would be conserved. A door-to-door campaign to include the purchase in Proposition 70 brought an outpouring of support. The two canyons were

acquired, and are now a preserve managed by the Department of Fish and Game. Another of the four shellmounds was saved last year as part of a settlement of a San Bruno Mountain Watch suit against the Army Corps of Engineers and Myers, Inc., involving a development in South San Francisco. The City of Brisbane is currently working to acquire as many lots as possible from willing sellers in an obsolete 105-lot subdivision from the 1920s to protect habitat and open space. It plans to use an old rail corridor for a linear park at the base of the mountain.

More and more people who have discovered San Francisco's secret mountain are now working to preserve its unique ecosystems. Friends of San Bruno Mountain is trying to create a native plant botanical garden at the entrance to the State and County Park, on Guadalupe Canyon Road. The San Bruno Mountain Stewardship Project, launched this year by the California Native Plant Society, is tearing out invasive German ivy and other alien plants at the headwaters of Colma Creek every Saturday. After concentrating its restoration work between Owl and Buckeye Canyons, San Bruno Mountain Watch is now moving into other critical habitat areas. A grant from the Coastal Conservancy enabled it to hire a restoration crew. All these groups are working toward the same goal: to keep large connected areas of native habitat intact.

With most of the mountain now in parks and preserves, the threat of development has diminished, though it will never disappear. These days, the major threat that people are struggling against is that of invasive alien plants. Whatever the challenge, the mountain's future depends on having enough people to care and willingly work for it. Intimate personal knowledge is an essential first step for such commitment. Many have become mountain advocates after taking a hike with David Schooley.

Finding the Home Place

LATER THIS SPRING, WHEN THE HUGE buds of cow parsnip had opened into white sprays and the hills were bright with golden poppies and blue iris, a young couple from Brisbane would come for the walk. They live at the foot of the mountain and want to plant a native garden. The week after, when the lupine we had first seen was nearly done blooming but lupine growing in cooler places higher up was just



RASA GUSTAITIS

beginning, a group of Sierra Club hikers came out. They stopped for lunch in a high meadow and listened as Schooley told of the time he became discouraged in the course of one of the many legal battles for the mountain and flew off to Italy to get away.

On the map he spotted "Serra San Bruno." He figured he might as well go there and took the bus south. When he got off in the piazza of a small town, a man standing there asked in English whether he was headed for the monastery. Schooley said yes. This man, it turned out, had been born in Half Moon Bay, only a few miles from San Bruno Mountain. His parents were killed in a car crash on Highway 1, and he had come to Italy to live with his grandparents and stayed. The next morning the man took Schooley to Certosa Serra San Bruno, founded by Saint Stefano e Bruno, who was known for having asked the pope: Can you put our monasteries in nature, close to God? The pope agreed, and Saint Stefano established many monasteries, all in nature. The monks prayed by walking in the wilderness, especially along creeks.

In the peaceful monastery he visited, Schooley saw a drawing of the patron saint kneeling in a creek. The message he found here was the same one he had found on San Bruno Mountain: if you center in one place and become deeply connected with it, the whole planet is affected. As he was leaving, one of the monks told him there was another American in the monastery, one of the men who had dropped an atomic bomb over Hiroshima. The monks promised to pray for San Bruno Mountain. ■

Top: Joe Albiniani lives in Village-in-the-Park and is trying to protect a swatch of endangered butterfly habitat now proposed for development.

Bottom: Streets in the Northeast Ridge development are named for native species the development has displaced.



MALCOLM LUBLINER



SAN BRUNO MOUNTAIN WATCH

Above the Buckeye shellmound on a winter day, looking down on the white flat-roofed buildings aligned in concrete at Crocker Industrial Park, Schooley imagined the saltmarsh that had been there, and the Siplichiquin people, of whom almost nothing is known today.

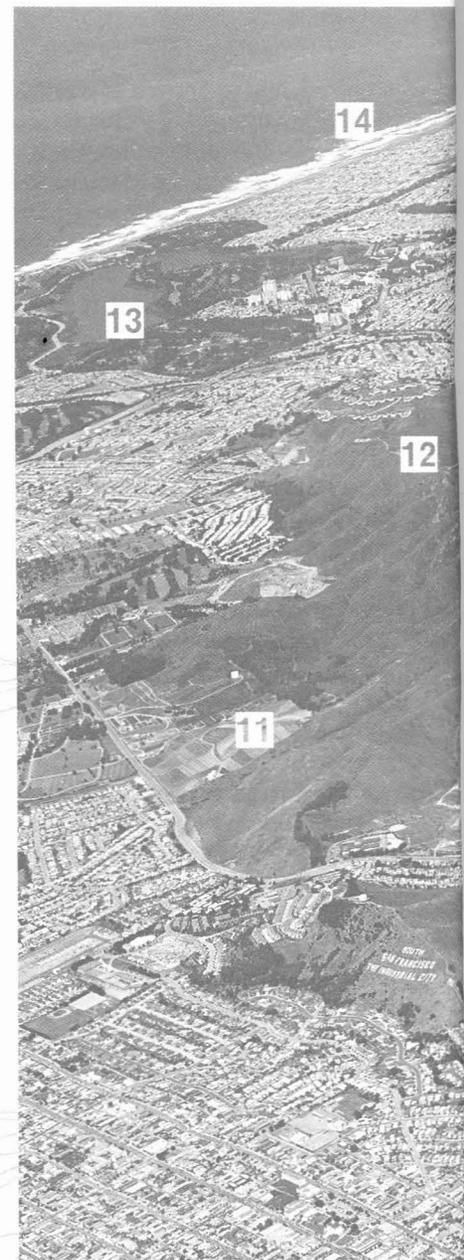
Siplichiquin

*Wallowing on the Mountain's peak
in rain-muddied grass and new sedum,
quartz stone, splashing birds,
the gray cold ocean billowed into sky
to wring thru your hair
and dribble down your nose
laughing on the bear mountain where worlds begin
and are remembered: the muddy plodding
of a woman down the streambed
gathering buckeyes and bay nuts
brothers sloshing in the misty bay
for sea weed
children bearing wet loads of twigs
old men cutting crystals in the canyon clearing
old mountain shelter of life
broad back to run the skies clear water
tending crops of berries, fat roots and seeds
father and Mother are One
the sun's bold anchor.*

Meditation: Devils Arroyo

*Caught by a feathered seed between my fingers
The barbed grain
of next year's fields of grass
Soft kernel sheathed in brittle wings
black tail spiraled against my skin
it lodges in my heart as in the ground
and watered by my blood
brings all the living earth awake
within my body.*

*I have come no further than this dark place
and it is to be done with it
The broken mint leaves where I sit are fragrant
and a bay tree in the rush of the wind.
The creek here is steep and cut of quartz-bearing sandstone
Islay and sage brush on the bank are dry
and white with lichen
The rocks beneath the trees, mossy.
Wind makes the only sound on
the distant hum of the city
The anger of my walk through the scrub
ebbs into the twigs and dead leaves.
A DESCRIPTION: TO BE DONE WITH IT*

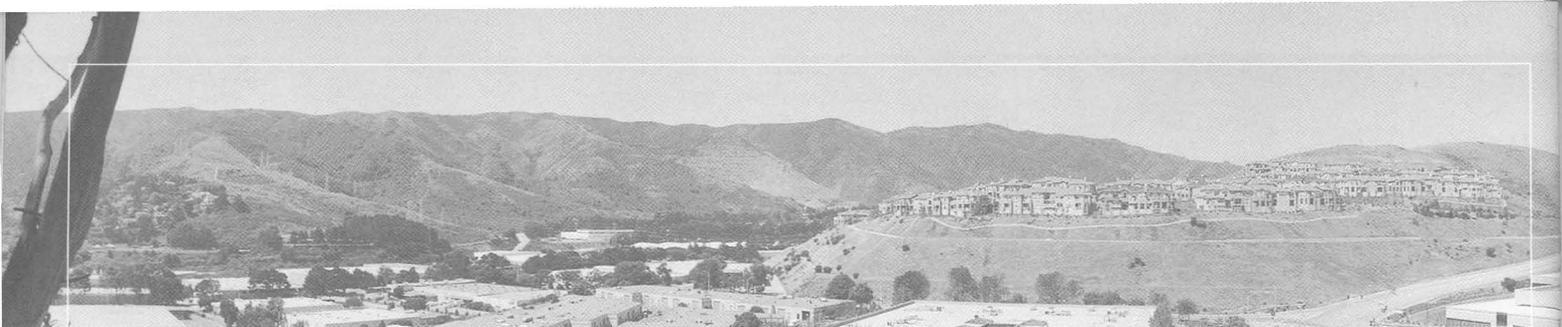


1997 PHOTO © AIR FLIGHT SERVICES, INC.

BACKGROUND DRAWING:
CALIFORNIA MUGWORT BY LEE ADAIR



- 1** Brisbane
- 2** Crocker Industrial Park, a filled wetland
- 3** Buckeye and Owl Canyons
- 4** Northeast Ridge development, now partly completed on mission blue butterfly habitat
- 5** Devil's Arroyo
- 6** The saddle, with gorse; mission blue relocation area
- 7** Native American valley with two protected shell mounds
- 8 9 10** Terrabay development
- 11** Amloc-Colma Dump
- 12** Point Pacific (Reservoir Hill), site of Village-in-the-Park development
- 13** Lake Merced, San Francisco
- 14** Ocean Beach
- 15** Golden Gate Park
- 16** San Francisco Presidio
- 17** McLaren Park
- 18** Candlestick (3Com) Park
- 19** Sierra Point (bay fill)
- 20** Oyster Point (bay fill)
- 21** Former marsh and San Francisco dump



MALCOLM LUBLINER

The First-Ever HCP Did this Habitat Trade-off Work?

THE NATION'S FIRST HABITAT Conservation Plan (HCP), at San Bruno Mountain, allowed landowners to build on prime habitat for two endangered butterflies—the mission blue and San Bruno elfin—in exchange for measures to improve the species' prospects of survival elsewhere. It served as a model for the 1983 Amendment to the Endangered Species Act (ESA) that opened the way for the growing numbers of other plans nationwide. But nearly 20 years after the first HCP was adopted, the results remain ambiguous and controversial.

Has the San Bruno Mountain HCP improved the butterflies' chances? This and other basic questions remain unanswered, even as development continues. The plan itself entails no independent scientific review, and none exists.

HCP advocates say they are effective; opponents see them as mechanisms to allow developers to subvert the ESA. Under the 1983 amendment, the Secretary of the Interior can allow landowners and developers to destroy listed species' habitat if they pay for measures that improve these species' survival prospects, and dedicate some land for that purpose.

At San Bruno Mountain in 1982, defenders of the area's unique plant and wildlife communities had already defeated giant development plans and helped create San Bruno Mountain State and County Park, encompassing some 1,950 of the mountain's 3,600 acres. Then the endangered mission blue butterfly turned up on private land. To avert court battles, a committee of landowners, developers, local governments, the U.S. Fish and Wildlife Service, the California Department of Fish and Game and some others crafted a plan in 1982 "to address problems caused by the presence of endangered butterflies on San Bruno Mountain." (Butterfly advocates might have attributed the problems to a different source.)

The HCP allowed development of 368 to 828 acres, at the cost up to 13 percent of mission blue and 14 percent of silverspot habitat. Fish and Wildlife issued an Incidental Take Permit for 15 years—then renewed it for another 15.

Property owners who built were required "to increase their [the butterflies'] chances of survival" by offering land and providing funds to conserve and improve habitat elsewhere on the mountain. A Habitat Conservation Trust Fund, funded by assessments on property holders, pays for species monitoring, alien plant removal, and other measures. The environmental consulting firm Thomas Reid Associates (TRA), which conducted the biological and environmental impact studies required for the HCP and produced the plan itself, is carrying out the biological program, and also monitors results of its efforts. TRA's contract, with San Mateo County, the HCP operator, is put up for bid each year and has been renewed each year. "We've accumulated so much data that it's hard to compete with us," explained TRA's Patrick Kobanus, the ecologist in charge.

TRA works with others to protect butterfly habitat against alien plant invasions. It also tries to replace some of the lost habitat, but with little success. For example, a residential community was built on prime butterfly habitat on the northeast ridge, but habitat was to be restored on the mountain's saddle. The saddle is colder, damper, and windier, not nearly as attractive either to butterflies or people as the northeast ridge.

The saddle was—and still is—overgrown with gorse, but the mission blue's host is lupine, which thrives in the grasslands on the northeast ridge. The HCP did not require any evidence that the butterflies could be relocated, but an attempt to replace gorse with lupine began in 1985.

This proved difficult. Gorse can be 20 feet tall, with a huge, deep root system,

says TRA's Patrick Kobanus, an ecologist on the project for six years. Many methods were tried, including herbicides and burning, but in April the yellow bloom was bright on the saddle. According to Kobanus, the gorse covers only 100 acres, down from 330 acres in 1982, but is now more dense. He added that butterflies have moved into three of 15 quarter-acre "habitat restoration islands."

Paul Reeber, a botanist with TRA from 1985 to 1989, observed that "the idea of trading habitat is scientifically flawed and very dangerous."

Kobanus contends that the HCP has achieved its primary goal by finding a permanent source of funding for alien species removal. Without that money, he says, dozens of invasive plants—including fennel, broom, eucalyptus, and gorse—would have overwhelmed butterfly habitat.

More development, of course, will destroy more habitat and new residents will bring in more nonnative plants, requiring yet more costly eradication efforts. Already the funds are inadequate—according to TRA it can cost \$3,000 an acre each year to control gorse, although Kobanus thinks this could go down to \$200 an acre if "you . . . come back and keep treating seedlings for five to ten years."

The Coastal Conservancy has approved a \$45,500 grant to San Bruno Mountain Watch, a citizens' group which has had good results in removing gorse on a nearby ridge using hand tools rather than herbicides and mechanical methods.

It is hard to say how much land developers have provided, as many offers have not yet been accepted.

Another San Bruno Mountain butterfly, the callipe silverspot, has been listed as endangered. Mountain Watch went to court to prevent its inclusion in the existing HCP, opening the way for Fish and Wildlife to see if this HCP is a win-win for property rights and species survival rights, as intended. ■

—RG

AndEarth.com

Two Friends Create E-Action Tool

AS WILL HOOVER AND RICHARD GILL were preparing to graduate, they corresponded often by e-mail about their worries, plans, and goals. They were childhood friends from Woodside, in San Mateo County, and had kept up the friendship. Hoover was at the University of Colorado, majoring in film, Gill at Oxford University, studying English literature.

"We realized that some issues that meant a lot to us were falling by the wayside," said Hoover when the two pals stopped by the *Coast & Ocean* office recently. They would read the latest chapter in the continuing destruction of the natural world—another ancient forest being cut, another entry on the long list of endangered species—but there seemed to be nothing they could do, with limited spare time and no money to donate.

Trying to figure out a way they could survive by doing something they believed in, they realized that the internet, the medium they were using for their conversations, was their ideal action tool. They could use it to build a network of people working together toward achievable goals, and to raise funds for projects. And they could do all this while having a great time.

They came back home and created a company, AndEarth.com, to publish *AndEarthToday*, an electronic newsletter that features habitat restoration projects. Gill and Hoover choose the projects, one at a time. Since they started in autumn 2000 they have done three, all close to home. Subscribers are asked to click on ads; each click triggers a contribution from the sponsor, who seeks access to consumers interested in environmentally friendly products. It's that simple. Everyone gets to feel good. As the masthead proclaims, "It's free, it's fun, and it works!"

As of May, *AndEarthToday* had some 10,000 subscribers, attracted almost exclusively through word of mouth. "We were pleasantly surprised by the interest," said Richard. The two have done no market research, sought no consultant's advice. Promotion is personal, amusing, and original. On Earth Day, for instance, Will and employee Mark Apel appeared in Oakland costumed as Recycle Man: wearing a trash

can, peering out through the lid to talk with people.

Because they wanted to start with the home place then expand outward across the planet as far as made sense, they chose as the site for their first project Huddart Park, where they had spent a lot of time while growing up. Working with the San Mateo Parks and Recreation Foundation and Palo Alto high school students, they planted seeds of *Sequoia sempervirens*—because its name means "always living." With the trees they hope they planted an idea: "Instead of just worrying, you can influence the situation around you. You can exert a lot of power by positive action."

The tree-planting was described in the newsletter. They started getting messages from subscribers who wanted to participate more. So when they chose the second project, habitat restoration work with San Bruno Mountain Watch (see p. 7), they organized a volunteer workday. Everyone felt tired, sore, and pleased after several hours of pulling invasive alien plants from native habitats. The third project was a beach cleanup at Monterey Bay. All the projects were written up in *AndEarthToday*.

If the subscriber base continues to grow, *AndEarthToday* will be able to bring in more money through advertising, as well as more support for projects. Gill and Hoover can imagine a million subscribers, but do not want to grow a huge company. Their goal is to take on just six to 12 projects a year, one at a time, hand-picked. They do hope eventually to have "a couple of employees who get along very well and have expertise in a particular field," says Hoover. "The technological side is something we can use some help with," adds Gill, who is 23 and much prefers reading to learning new software. Sometimes he surfs, but not as much as Hoover, 24, who needed to come back to California to be near the ocean. They agree that it's important to have fun while working for the world so that the good energy will keep on flowing. ■



See AndEarthToday at
www.AndEarth.com,
or e-mail
feedback@AndEarth.com.

—RG

The Artificial Reef Debate

CHRISTINA S. JOHNSON

In the last 40 years, more than 100 underwater “reefs” have been built at 33 sites off the southern California coast. These reefs were almost always constructed with donated, unwanted rubble. Junked automobiles, tires, wooden streetcars, barges, concrete boxes, pipes, rubble, and quarry stones have been submerged near public fishing piers and elsewhere in the nearshore. The goal was to enhance sport fishing and habitat.

The California Department of Fish and Game expected that these reefs would attract fish by giving them intriguing nooks and crannies for hiding and foraging and, at the same time, add to fish habitat, offsetting pressures on fish stocks.

The first of these goals seems to have been met. Fish and Game has reported that the artificial reefs have greatly enhanced sport fishing by congregating fish. But it is not yet certain whether the reefs have benefited marine ecosystems or increased fish populations. Some argue that they have done more harm than good. By attracting fish to areas that are heavily populated, they may contribute to the decline of stocks popular with sports fishermen.

“There is a whole debate on production versus attraction,” said Steve Schroeter, a biologist at the University of California at Santa Barbara, who specializes in artificial reef dynamics. “Are you simply attracting things or actually increasing overall populations? It is a really hard question to get at, and a complicated problem.”

Finding answers is important because interest in building more such reefs is growing. Developers of port and harbor projects, who are required to mitigate damage to the environment, are looking to artificial reefs as a mitigation option.

Mitigation is a regulatory process in which builders are required to compensate

for ecological damages caused by their projects by restoring similar habitat elsewhere.

Two studies now being launched may shed some light on the attraction vs. production issue. Conducted at the reef near the San Onofre nuclear power plant—which will be the largest artificial reef in California when it is completed—these studies will test several reef design models for effectiveness in increasing overall fish populations. They will quantify fish production—the number of fish born and raised on the reef—both in general and for one species, the sheephead. The findings should help scientists and decision-makers evaluate whether man-made reefs benefit nearshore reef-dwelling animals and plants enough to warrant their use as mitigation tools in southern California.

If artificial reefs do not, as currently designed, boost fish production, they may be contributing to a decline of fish stocks by aggregating fish for fishers. If they do boost production, they could offer win-win solutions for port and harbor districts and marine life protection.

Junked Cars and Rubble

The first artificial reef in California was built in 1958 in Santa Monica Bay’s Paradise Cove by submerging 20 discarded automobile bodies. This structure was designed specifically for sportfishing, and



COALITION FOR ENHANCED MARINE RESOURCES

it appeared to work. Within hours of sinking the automobiles, marine biologists reported seeing surfperch, sargo, and small California halibut. Later, according to a report from State Fish and Game, species that had not previously been seen in the area, such as opaleye and sheephead, were observed over the cars.

Pleased with these results, Fish and Game participated in the construction of several more artificial reefs, made of wooden street cars, more car bodies, heaps of quarry stone, and cement boxes at Redondo Beach, Malibu, Santa Monica, and Hermosa Beach. Quarry stone was found to be the most suitable material for reef construction because it does not corrode in salt water and provides substrate for plant and animal life.

Subsequently, Fish and Game built a series of quarry stone reefs in several locations off Ventura, in Santa Monica Bay, and in Orange County. Quarry rock was also placed at the outer perimeter of seven southern California fishing piers. Almost all this rock was mined from Catalina Island.

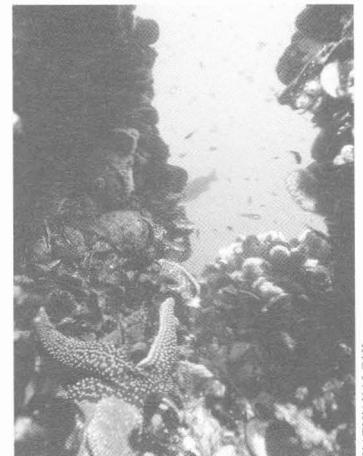
In the 1980s a second wave of reef construction occurred. Reefs were designed to test how placement—spatial arrangement, height, and depth below the sea surface—influenced plant and animal life. Biologists found that taller reefs attract more fish while flatter, lower-relief reefs facilitate giant kelp forest growth. Today, reefs are

usually made of concrete and quarry stone and are typically between two feet and 10 feet high.

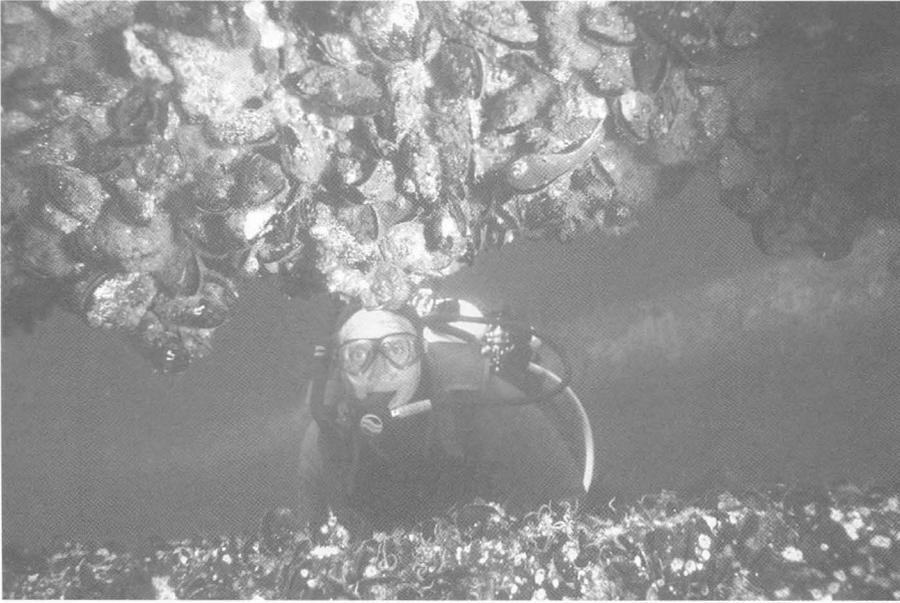
Many of the early reefs, built with steel or wood materials, have rusted and rotted away. In recent years, only a few more have been built, usually of concrete or quarry stone, but many of the original reefs have been augmented by the addition of concrete rubble, frequently from demolition projects near harbors.

Despite various reef studies (Fish and Game conducted studies when it was in its reef construction phase, and Southern California Edison has funded studies, as have oil companies for rigs to reef proposals) over the last four decades, no one has been able to answer the key question: Do the reefs increase fish populations or do they merely encourage fish to congregate? Is California cluttering its shallow waters with debris, or enriching the marine ecosystem?

Man-made reefs are meant to offer marine life the benefits of rocky habitat. The builders' goal is to provide hard substrate where young fish will take up residence, and where algae and invertebrates will attach and grow. In California, rocky habitat is considered the foundation of the giant kelp forest, the most biologically diverse marine habitat. Giant kelp is associated exclusively with rocky reefs, except in the Santa Barbara area, where kelp can grow on sandy bottoms. (An interesting



KATHY KALOHI



quirk!) Many of the most commercially valuable marine products—lobster, abalone, and sea urchin for instance—are also associated with kelp forests.

In northern California, where the nearshore ocean floor is narrower and chockablock with rock shelves, artificial reefs would be superfluous. For this reason, nearly all California's artificial reefs are in the counties of Ventura, Los Angeles, Orange, and San Diego where the ocean bottom is sandy and the continental shelf wider, and where the weather tends to be ideal for boating almost all year round.

New Studies May Yield Answers

To help determine whether artificial reefs increase fish production, biologists with San Diego State University, the University of California Santa Barbara, and Fish and Game have been conducting fish surveys at the big reef that Southern California Edison is building to mitigate damage to kelp beds near its nuclear power plant in San Onofre, in southern Orange County.

At present, the San Onofre reef consists of a grid of low-relief stone and concrete piles, in seven 3.2-acre clusters. Within each cluster are eight different reef designs, with varied relative proportions of quarry stone and concrete. Eventually, the areas between the seven clusters will be filled with hard material to provide substrate for a 150-acre giant kelp forest, which—if expectations are realized—will teem with bass, lobster, rockfish, sheephead, crab, urchin, and maybe one day abalone.

Before the fill is installed, the rocky islands provide a rare opportunity to examine how fish production varies with reef design and between manmade and natural reefs.

Therefore, during the coming summer, Todd Anderson, assistant professor of marine biology at San Diego State University and his graduate students are to begin diving surveys to track populations of very young fish. Unlike large, freely swimming fish, young fish are unable to migrate between the rock islands. Their abundance thus represents a better estimate of fish production than populations of adult, highly mobile fish might.

"If the artificial reefs are truly increasing fish production in the area, fish production should be greater on the artificial reefs than on the [nearby] natural reefs," Anderson said. If fish production—measured by looking at a combination of recruitment, growth, fecundity, and survival rates—is lower on the artificial reefs than on the nearby natural reefs, then one could argue that the fish would have been better off settling over one of the natural reefs.

That assumes, of course, that sufficient natural reefs exist nearby and that they are not already fully settled. If fish populations are limited by a scarcity of rocky habitat, artificial reefs may increase their numbers, even if their production is lower, Anderson

said. There is really no way to tell if rocky habitat is a limiting factor in fish abundance.

Fish abundance, however, is only one of the issues of concern in the controversy over artificial reefs. Another is whether these structures will support the same assemblages of plant and animal life as natural reefs. Preliminary diving surveys by Schroeter and colleagues have shown that bottom fish are more abundant, while kelp canopy fish are relatively less abundant on the San Onofre reef than on natural reefs. Schroeter attributed these differences to the newness of the San Onofre reef, the first phase of which was built in fall 1999, so that kelp has not had sufficient time to colonize and grow on it.

Meanwhile, Dennis Bedford, a marine biologist with Fish and Game, was to begin tagging California sheephead this summer in a study that will allow him to estimate their abundance per unit area on the San Onofre reefs. Sheephead are heavily fished by live-trap fisherman, who get a premium for delivering sheephead alive. Live fish are particularly popular at Asian markets and restaurants. Bradford's goal is to be able to track the sheepheads' ranges and survival rates, and to use this data to estimate their abundance on the reefs. This project is an extension of his earlier work at an artificial reef near the Camp Pendleton Marine Corps Base in northern San Diego County.

Bedford said: "We want a number that tells us how many pounds of fish are produced at the reef per unit acre. This is the number that everyone is looking for. We want to be able to tell managers how many fish they will have if they build some quantity of reef."

The two studies are funded by the National Oceanic and Atmospheric Administration's Sea Grant, Fish and Game, and Southern California Edison.

Awaiting the results with interest will be Los Angeles and Long Beach port authorities, both of which are interested in finding new ways to mitigate for their maintenance projects, said Dave Parker, a biologist with the Department of Fish and Game, who supervises its artificial reef program. "Up till now, the thinking has been to restore or buy wetlands in places such as Bolsa Chica in Huntington Beach," he said. Port and harbor projects tend to damage wetlands. But in southern California, restorable wetland acreage is scarce and costly, as most former marshes have been paved and developed.

Legally, mitigation must be "in kind": compensation for habitat that is damaged must be by restoration or improvement of the same kind of habitat nearby. Only where that is not possible is "out of kind" mitigation permitted. Even if the artificial reefs are found to be effective in improving habitat, it is nearshore habitat, not wetlands that would benefit.

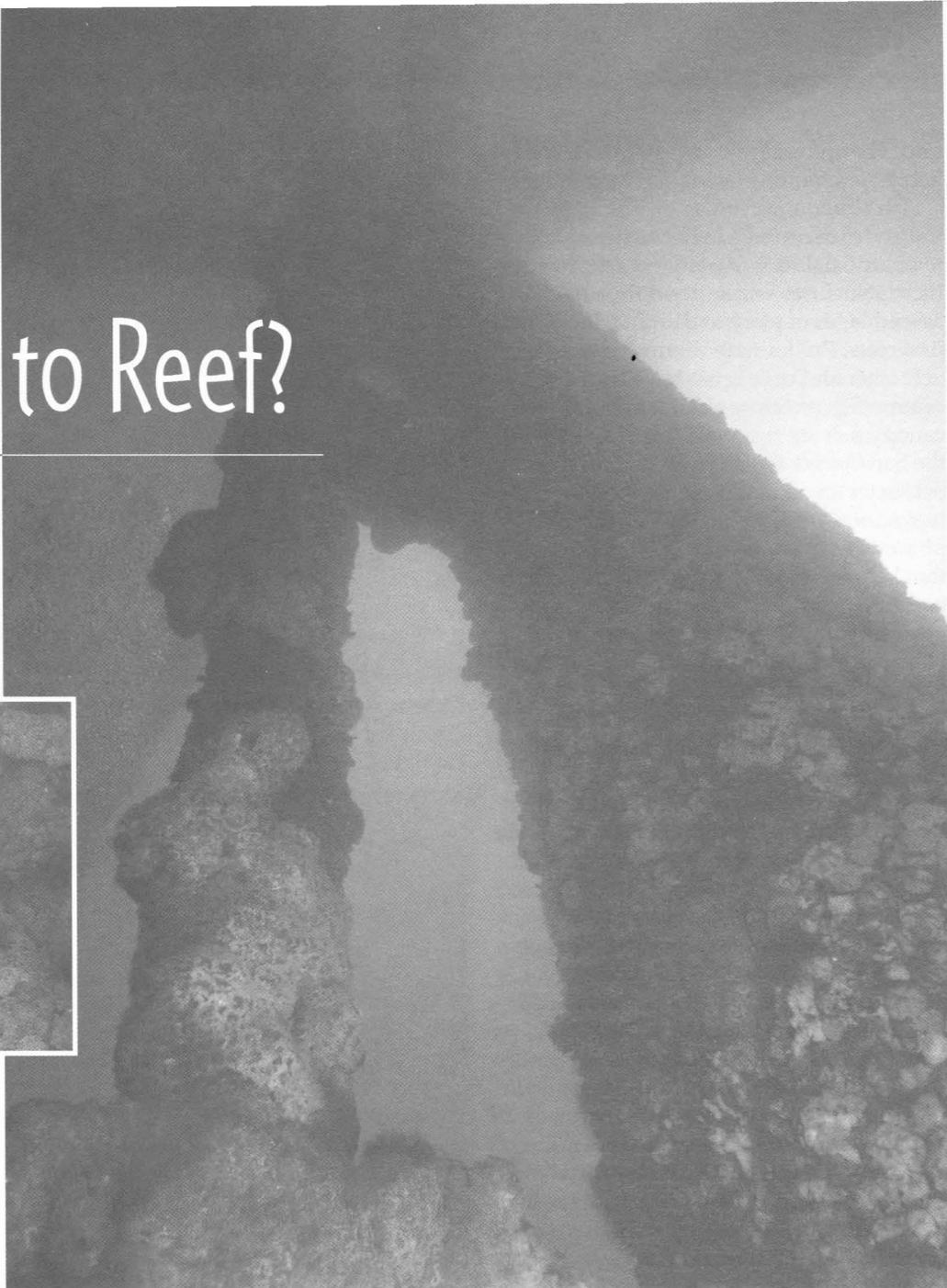
Leslie Ewing, senior coastal engineer with the California Coastal Commission, said that artificial reefs will need to be evaluated more closely before they can be considered for "out of kind mitigation."

Parker said: "If the Edison reef shows that it has been successful, more people will look at reefs as ways to mitigate, but that is a ways off, I think." ■

Christina S. Johnson works for the National Oceanic and Atmospheric Administration's California Sea Grant, within the National Sea Grant College Program.



Rigs to Reef?



PHOTOS THIS SPREAD: COALITION FOR ENHANCED MARINE RESOURCES

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PROPOSED LEGISLATION THAT WOULD allow oil companies to convert retired oil drilling platforms into artificial reefs, rather than dismantle and haul them away, has generated heated controversy among environmental groups and legislators.

Senate Bill 1, which would permit “rigs to reef” conversion, was introduced last year by Senator Dede Alpert of Coronado and reintroduced in the current session. By early June it had passed in the Senate and was before the Assembly.

Proponents, including the Coalition for Enhanced Marine Resources, which represents oil companies, argue that to remove these structures would be environmentally destructive as well as unnecessarily costly.

They point to the presence of barnacles, sea stars, mussels, anemones, fish, and other marine life on and around oil platforms. They propose to create an Endowment for Marine Preservation and a Marine Resources Trust Fund with a portion of the money the oil companies will save if they are not forced to remove the oil platforms.

Opponents, including Surfrider Foundation and CoastKeeper, contend that, under SB 1, the massive steel structures would be modified to be invisible above water, could pose a hazard to navigation, and the state would be left liable for any accidents. They also question whether metal is a suitable material for fish habitat.

Under current law, oil companies are required to remove an oil rig entirely once it stops producing oil—a costly process. Many of these rigs are built in water more than 500 feet deep, as far as 10 nautical miles from shore. When a rig is decommissioned old wells are capped, steel scaffolding is detached from the seafloor and hauled to the surface, and towers are disassembled. Then everything must be towed to shore.

In the Gulf of Mexico off Louisiana, Texas, and Florida, numerous obsolete platforms have been converted to artificial reefs, with great savings to the oil companies. Commercial fishers in the Gulf have been enthusiastic supporters of rigs-to-reef conversions. In California, about 27 oil platforms in state and federal waters are slated to be decommissioned in the next 20 years. Most of these are in the Santa Barbara Channel and San Pedro Bay, some are in Long Beach Harbor and Santa Maria Basin. The two state legislators who represent the districts with the greatest number of offshore platforms, Senator Jack O'Connell and Assemblymember Hannah-Beth Jackson, oppose SB 1.

In the Senate version, some of the money saved by the oil companies would go into the proposed Endowment, a nonprofit organization with a board appointed by the governor. The Endowment would pay for upkeep of the modified platforms and enforcement of no-fishing rules, and would also fund marine preservation projects. A lesser percentage would go to the Marine Resources Trust Fund, to be created in the Resources Agency, and a still lesser sum would go to counties with rigs in their offshore waters.

How much money this proposed distribution would yield, particularly for conservation, is not certain. Kevin Slagle, executive director of the Coalition for Enhanced Marine Resources, estimated that as much as \$400 million could go into the fund over the next 20 years if the proposed legislation passes. Debates on the bill have moved to "who gets what piece of the pie," he said. "There are still skeptics out there. When they think of an oil platform, they think of dark," but "these are oases of marine life."

"Although \$400 million sounds like a lot," responded Eric Cardenas of the Environmental Defense Center in Santa Barbara, "when you talk about what it costs to maintain 20 sites and potential liability costs, we

don't know what will be left over for coastal enhancement projects." He believes "people are blinded by money."

The rigs have not been shown to provide an overall benefit to marine life, Cardenas said, adding that a panel of University of California scientists commissioned by Alpert could not determine whether the rigs would increase fish stocks.

Milton Love, a marine biologist at the University of California, Santa Barbara who studies marine life at oil platforms, offers another perspective. As the rigs' overall effect on the marine environment "is a question that can't be answered yet," given current knowledge, he notes, the decision will have to be based on other factors. There is no question, he said, that the rigs have altered the local habitat from muddy bottom populated by worms and sea cucumbers to hard substrate reef that supports millions of creatures, especially invertebrates such as mussels and starfish. They would die if the rig habitat were removed. The rigs also provide refuge for rockfish, which are under heavy pressure from fisheries. The question of whether artificial reefs produce or merely aggregate fish is still moot, he says. "We've found that nearshore fish populations move around a lot more than we'd thought," he adds. "In the end, all reefs both attract and produce fish." ■

—Christina S. Johnson



A California Palette



ARTHUR OKAMURA

ANNE CANRIGHT

THEY SAY HUMANS perceive more shades of green than any other color. In early April, while driving from Monterey Bay to the suburban gardens of Santa Monica, then southward over rolling ranges to the Anza-Borrego Desert wonderland—and then doing the whole trip in reverse, with variations—I am convinced I saw at least a thousand shades of green, maybe more. The oaks alone were worth several hundred: yellows and bronzes and oranges and reds, all wrapped in bright, fresh, exuberant green growth. And the emerald grasses of spring, splotted magnificently with lupine purple and mustard

yellow and brilliant poppy orange. And the desert. It never ceases to amaze me how *gray* green can get, yet still be undeniably green.

But this time in the desert, what truly astounded me were the other colors. I'm used to the low tonalities out there—muted greens, dirty golds, cement grays, chocolate reds: colors I cling to, that make me a Californian. (My father came here in 1939 from the Midwest and found his soul in the desert. I think it's genetic.) In Anza-Borrego in April, though, you could see a riot of colors.

One afternoon, in a ploppy rainshower, I

walked up a layered-rock canyon to a palm oasis. The colors were splendid: salmon orange apricot mallow blooms (looking like upside-down mini-hibiscus); masses of small pea-family indigo-bush flowers—the deepest purple you can imagine, with the tiniest splash of orange inside; the pink and bronze of beavertail and cholla; the vermilion tips of blooming ocotillos, cavorting like crazed candelabras; sherbet red chuparosa, with Anna's hummingbirds elbowing one another out of the way to get at the tubular flowers. And yellows: senecio, coreopsis, desert dandelion, more cholla, barrel cactus, myriad tiny flowers adorning the ground like tossed confetti. I could smell dampened sand, hear the delightfully incongruous sound of a bubbling creek. Sunlight gleamed on high layered rocks, and a rainbow arced over the distant Borrego Sink. There were the flitting birds and the trembling butterflies. It was magical.

I felt lucky to be there during that short burst of spring, knowing that in another two or three weeks the desert, with all its inhabitants, would be hunkering down for a very long, very hot summer. Gray greens and dusty browns would prevail. A person would have to be quiet and still to see any movement, to sense the ongoing life of the desert lands. Patience would be the watchword. . . .

A couple of days later, as I bullied my way out of Los Angeles, then began to regain some sense of ease driving past Camarillo, Ventura, and Santa Barbara, I thought about how I would keep that color, that life, vibrant in my mind upon my return to a coastal existence. I thought of a couple of parallels: dunes, and the expanse of the sea. The colors may not translate exactly, but the exuberance does, and the mystery, and the need to pay attention.

Shortly after arriving back home I went out to some local dunes to see what flowers were making their bid for highest saturation and hue. Although the spectrum of colors wasn't as full as in the desert, I did find a few things blooming, trumpeting their wealth of pollen with oranges and yellows and pinks. (Desert plants will be shutting down in a matter of weeks, but the dune shrubs will continue to bloom throughout the summer. Repeat visits will definitely be in order.)

The sand of a beach dune is finer than desert sand, to be sure, but the plants have similar adaptations. The gray green is a

given, and you find related species: purple desert verbena (*Abronia villosa*) was blooming in abundance in Anza-Borrego, but my local dunes have sand verbena (*A. maritima* and *A. latifolia*), in both pink and yellow; the beach lupines, *Lupinus chamissonis* and *L. arboreus*, have their relative in the desert species *L. arizonicus*; a lovely little yellow beach primrose, *Camissonia cheiranthifolia*, blooming in profusion in mid-April, has a cousin in the dune evening primrose of the desert, *Oenothera deltoidea* (the seaside species was once classified as *Oenothera*, so perhaps I should say "cousin once removed"). *Artemisia* is found in both climes as well. And other plants adapted to blasting sand, variable temperatures, and minimal water have counterparts in both dune and desert sand.

As for the open ocean, although people do sometimes speak of the desert as an "ocean," I get the impression they're speaking of a limitless, barren expanse; a wasteland; something to be traversed on its surface, and then only to get to a better place.

What I see is an abundance and diversity of life that is truly remarkable, but that we humans must take a bit of effort to witness—in both desert and ocean. Most of us, perhaps, aren't interested. We focus more readily on the human realm, with its many comforts. We want to be assured of air conditioning during the summer heat—and no snakes in the house, if you please. Dry glimpses of undersea life at aquaria will suffice, or if we're feeling really wild, a tide pool poke.

But some of us do delight in these worlds—the realm of the sea and the inhospitable world of the desert—and seek to understand them better by SCUBA diving, or backpacking into the dry backcountry. Getting out into these forbidding yet bounteous habitats is one way we can better appreciate this earth of ours, and our place in it.

I like to think about these things, so I go out into nature as often as I can. I'm also a painter, and right now I think I'll work on the lesson of green. And for that matter, blue: for I saw many, many shades of blue as I drove north with the Pacific on my left and the vibrant California hills on my right. And I'll of course have to throw in a few splashes of apricot-mallow orange, indigo-bush purple, mustard yellow, and Anna's red. An abstract painting, I think. I'll call it "California Spring, 2001." ■

My California Adventure—

BILL AHERN

I HAD READ A LOT about the new Disney amusement theme park called California Adventure, which opened on the old Disneyland parking lot in Anaheim in February. The mere \$1.4 billion budget was

reputed to have cut imaginativeness and innovation to the bone. (The park's creator, Disney CEO Michael Eisner, interestingly, was paid one-twentieth that amount, or \$72 million, last year alone.) Although this 55-acre park has only one-third the attractions of 85-acre Disneyland, it charges adults the same whopping entrance fee of \$43, and contains the same layers of Disney artifice. On a sunny spring weekday just before the Coastal Conservancy's board meeting at a real seaside town, nearby Laguna Beach, I just had to see it.

The experience starts with a giant structure the size of

the Pentagon that can park 10,200 cars. Cute electric trains take you to the ticket booths, where you can choose to visit the original Disneyland or the new California Adventure, which are across from each other.

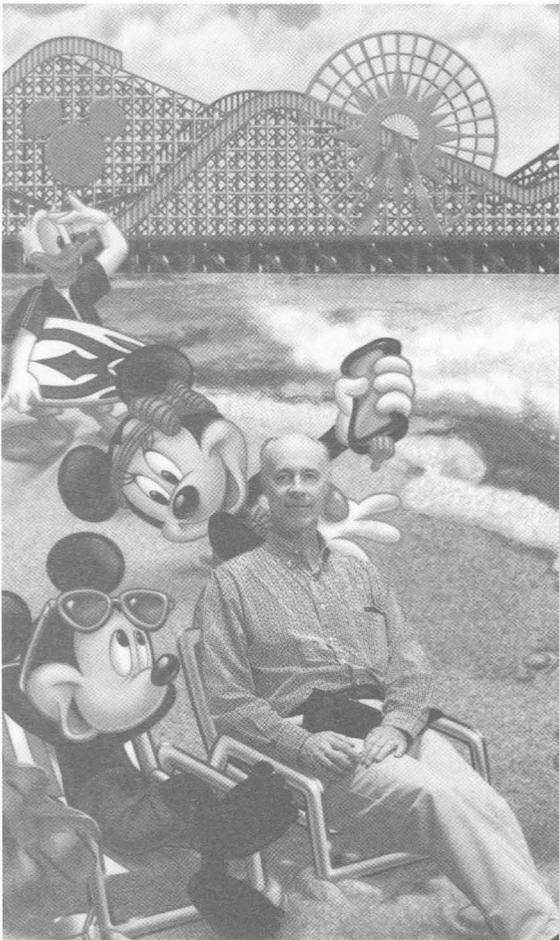
After entering under a hokey plastic-looking Golden Gate Bridge and being assailed by the song "Do You Know the Way to San Jose," I headed right to the attraction the California Automobile Association's magazine *Via* calls "the most innovative ride in the park," Soarin' Over

California. If you love California landscapes, this ride is for you. Along with eighty-six other adventurers buckled into a bank of seats, I was swept up toward a giant concave IMAX screen. Then the seats tilted, and I felt I was hang-gliding, swooping down toward a river filled with boaters. With swelling music and the wind in my face, I zoomed over Napa Valley, up to a Yosemite waterfall, along the rocky coast, over an aircraft carrier in San Diego Bay, a golf course residential development in Palm Springs, and an orange orchard, as the scent of orange blossoms wafted through the theater. At the end of the day, I went back and rode it again.

The rest of the park was anticlimactic, a compressed trip, under the Orange County sun, across all of California. I strolled from the Sierra Mountain area, taking the obligatory raging waters ride that soaked the family in my raft, through the Central Valley, with pathetic vegetable plots in Bountiful Valley Farm, past the Golden Vine Winery (actually an advertisement for Mondavi), past San Francisco's Palace of Fine Arts, and on to the coastal simulacrum.

Pacific Wharf holds overpriced eateries in a sterile movie set reminiscent of Monterey's Wharf or the Morro Bay waterfront, but with no fish aroma or barking sea lions. The adjacent Paradise Pier is a re-creation of the recreational piers that were strung along the coast in the days before families could watch TV, such as Ocean Park Pier in Santa Monica, before their ballrooms and roller coasters went dark and they burned down. The Wharf and Pier sit on Paradise Bay, a lifeless lagoon without so much as a goldfish in it. In the bright sunlight everything looked starkly fake.

The rides on the Pier are not the fearful monsters you find at Magic Mountain, but they were thrilling enough for me, especially the Maliboomer, which launched me 180 feet straight up, where my reading glasses flew out of my pocket into orbit. Then we dropped like the proverbial stone and boomeranged for awhile. The teenagers in adjacent cages loved this one.



COURTESY BILL AHERN

A Pacific Ocean Pier in Anaheim

The California Screamin' roller coaster squeezed my spine at 55 m.p.h., with a tight loop in the middle. But the Sun Wheel, a ferris wheel, really burst the Disney illusions, for it swept me way up above the park, where I could see the eight lanes of the Golden State Freeway and the endless urban developments of Anaheim, Fullerton, and Garden Grove. Somewhere out there in the haze were the real coast to the west and the Santa Ana Mountains to the east, but the murk made me happy to get back down into Disney's fantasy of California.

The park is, of course, clean, and the "cast members" are friendly. Like City Walk at Universal Studios and the huge shopping centers of South Coast Plaza, Ontario Mills, and the Beverly Center, it's a privately owned public gathering space. There are no panhandlers, gangs, trash, or unpleasant smells. The crowd was multiethnic and multigenerational, strolling in the kind of safe and entertaining environment that many find more attractive than city parks or public beaches.

The park feels almost like a religious experience, so dense is it with condensed icons of the California landscape, culture, economy, history, and people. Sun symbols abound. Water flows everywhere. And on the walls of buildings are murals of idealized immigrants of different races all getting along together. The ethnic diversity of California is portrayed everywhere. And most of the music that suffuses the park put a bounce in my step, especially classics like "California Dreamin'" by the Mamas and the Papas and "California Girls" by the Beach Boys. For the elderly they played Bing Crosby's pleasant suburban song, "San Fernando Valley."

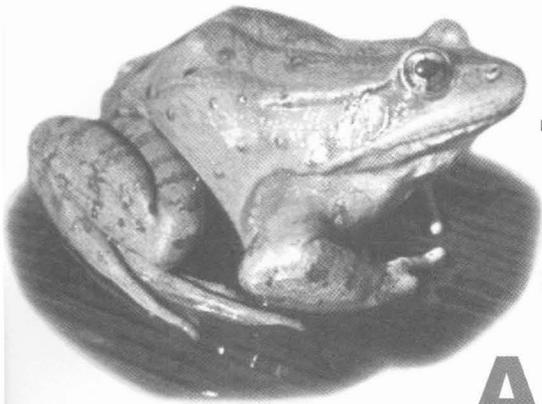
Much of the imagineers' energy and glitz goes into the high-energy Disney's Eureka: A California Parade, which snakes through the park twice a day. It's a jaw dropper. As the park map states, "Six epic-scale floats each bear an iconic statue of Eureka—a beautiful female form who embodies the 'Spirit of the Golden Dream' and beckons us to discover California." One such Eureka statue was a pulchritudinous plastic blonde bathing beauty whose sunglasses went up and down on her head. Behind her a real

surfer girl danced on a surfboard 15 feet in the air, while a roller-blading adolescent zoomed inside a donut below. A black female Eureka led the Watts Tower Float, while a Latina sun goddess float was followed by Day of the Dead skeleton dancers. My favorite was a white kid dancing as a box of Chinese take-out, preceded by a hopping fortune cookie.

The third and last section of the park I visited was the Hollywood Pictures Backlot. The Superstar Limo ride takes you through plastic L.A. streets with fake people applauding you like you're a movie star—or maybe just because you plunked down \$43 to get there. I felt really embarrassed. But the Disney experience can take you from a low to a high within minutes. Walt Disney's successors still excel at animation, and the Animation Building has a show not to be missed. Walter Cronkite explains how animation is created to a manic Robin Williams, by turning him into one of the lost boys in *Peter Pan*. This pushed all my childhood buttons, with new twists, as when Tinker Bell levitated the crocodile with pixie dust.

When the sun sets, the glare from the plastic and paving subsides, and it's easier to suspend critical faculties and enjoy the statues and murals and waterfalls. The lights of the ferris wheel and roller coaster sparkle, and the Eureka Parade looks magical in the dark. I don't know if tourists from other states and countries will be motivated to see the real redwood forests after they've seen the Redwood Creek Challenge Trail, with \$500,000 of little redwoods imported from the Santa Cruz Mountains interspersed with cute statues of Indian animal-myth characters. But they might. Anyway, the perfect end to my visit was getting on Interstate 5 at 10 p.m. and heading back to Laguna Beach, with light traffic flowing at 60 miles per hour. That's the real California Dream. ■

Bill Ahern, the Coastal Conservancy's executive officer for the past three years, goes boldly where others may not dare. He resigned May 31 to join the Consumers Union, where he now works on energy issues.



The Elusive Red-Legged Frog

IRENE BARNARD

ALTHOUGH I HAVE LOVED FROGS since childhood, I never dreamed I would have an opportunity to put that affinity to use—until I discovered and began volunteering at the Golden Gate National Recreation Area (GGNRA). During the past several months, I have spent over 20 evening hours trudging through wetlands and brush, flashlight and notepad in hand, to listen for and record the presence of red-legged frogs, an endangered species.

The GGNRA has for the past three years conducted an annual calling survey to gather information on changes in red-legged frog populations and to identify breeding sites. Teams of three to five volunteers go out to the lower Redwood Creek watershed near Muir Beach in Marin County, one of several habitat sites in the 74,000-acre GGNRA, during the frog's breeding season, which coincides with our rainy season—usually January through April. These volunteers listen for and report the little amphibian's call. Scientists then compile and analyze these data, which have confirmed a serious decline in red-legged frog populations (though over the past few seasons numbers seem to have stabilized).

During a one-night training session, we listened to recorded calls and learned how to differentiate those of Pacific tree frogs, bullfrogs, and red-leggeds. They're not hard to tell apart: The tree frog's common "ribbit" is not at all like the bullfrog's call, which sounds like a huge belch. The red-legged's call is a low "waant-waant-waant-ROWR." It's not easy to hear, however, because it's very soft; it also occurs very seldom because the red-leggeds are so rare. Its belly and the underside of its hind legs are rusty red, its back olive or reddish and marked by small black flecks and larger dark blotches.

I'm not sure how much I contributed to frog research, but what I got from the experience is more than the satisfaction of working for the cause of one of my favorite creatures. I learned what it means to feel at

home at night in the wild, and to listen with more focus than ever before. And of course I expanded my knowledge and understanding of the frog and its current plight.

It was the hero of Mark Twain's story "The Celebrated Jumping Frog of Calaveras County." In my childhood, this frog's range extended from Shasta County to Baja California, and from the Sierra Nevada to the coast. Now it inhabits only one-fourth of that range. The survey I was engaged in was part of a larger effort, to study and ultimately benefit the plummeting red-legged population.

On this April night, the last night of the 2000–2001 monitoring season, three other volunteers and I, bundled in woolen sweaters and gloves, make our way along paths overgrown with reeds, nettles, and ferns, sloshing through knee-deep stretches of creek overflowing after days of heavy rain. Bare willow branches graze the clouds, and the Big Dipper's handle rakes the horizon. Lights from approaching cars flash across the dark landscape. The cacophony of Pacific tree frogs is so tremendous that my ears ring.

By the time we move away from the wetland toward the beach, the constellations have disappeared behind the clouds. Pines and willows still drip after a recent downpour. Then the cloud cover lifts, revealing a fat, gibbous moon and a clear night stippled with stars. Pegasus and Orion tumble from the sky. The ocean pounds the small beach in the distance, sounding as if we are on a locomotive headed for the middle of the world.

Our frog can be at home in a variety of habitats, including aquatic, riparian, and upland, generally between sea level and 3,500 feet. During the summer, adults live near ponds or deep, slow creeks. If these water sources dry up, they may seek shelter in small burrows or moist leaves. When the first rains come later in the year, the frogs travel (usually at night) to their winter breeding site, sometimes as far as a mile away.

The endangered red-legged frog is about five inches long and famous for its long jumps.



Red-legged frog habitat, Big Lagoon, Marin County



PHOTOS THIS SPREAD: DARREN FONG, GGNRA

Mating begins anywhere from November to January, and lasts until April. The males usually arrive several weeks earlier than the females. The frogs pair up, then move to warmer water to lay and fertilize their eggs. After a couple of weeks, the larvae known as tadpoles hatch, then grow in about six months into froglets.

Listening in vain as we trudge through wet sand, I think that if frogs are becoming scarce, we humans must also be in trouble. Amphibians tend to breathe through their skins, which are therefore vulnerable to acid rain and other pollutants. They are extra sensitive to what afflicts all species and, like the proverbial canaries in coal mines, may, in their downfall, signal impending disaster.

Major declines in the red-legged's population first occurred during the Gold Rush, when the delicacy of frog legs was discovered. Probably at the same time, bullfrogs were introduced from the East Coast. Wildlife biologists and conservationists attribute the decline of the native species to the arrival of exotics, in particular bullfrogs, which eat the red-legged's eggs. Loss of habitat to development, as well as pesticides and other toxins in the environment are also held to blame.

In May 1996, the U.S. Fish and Wildlife Service listed the red-legged frog as a threatened species, and in March 2001, 4.1 million acres in California were designated critical habitat. Now public agencies must consider the frog in development decisions that might affect frog habitat in this area, which is scattered throughout 28 counties, from the coast to the Sierra Nevada. The frogs' range is so fragmented that only four regions contain populations of more than 350.

As we make our way around the listening stations that ring the lagoon near the beach, I feel tired after a full day at work and wonder why I've come. But when we

reach the next station and hear what must be 50 to 100 Pacific tree frogs, we talk about how great we feel. The experience itself is wondrous: being in nature, yet so close to civilization on a crisp, clear night.

Then we stand silently. I'm straining so hard to hear I'm afraid even to breathe. Finally I hear . . . nothing. Utter disappointment is my first reaction. We have been out eight times now, and I have not once heard the red-legged frog. Another group heard about three the previous week at one of the first listening stations, so I know they exist. Maybe I'm just unlucky.

Then I try to reason myself into a more positive outlook. Would *not* hearing a frog bring me back next season? If I'd heard one, would I be satisfied and not return? But because I always return rejuvenated from these night-time expeditions, I feel sure I would come back, again and again.

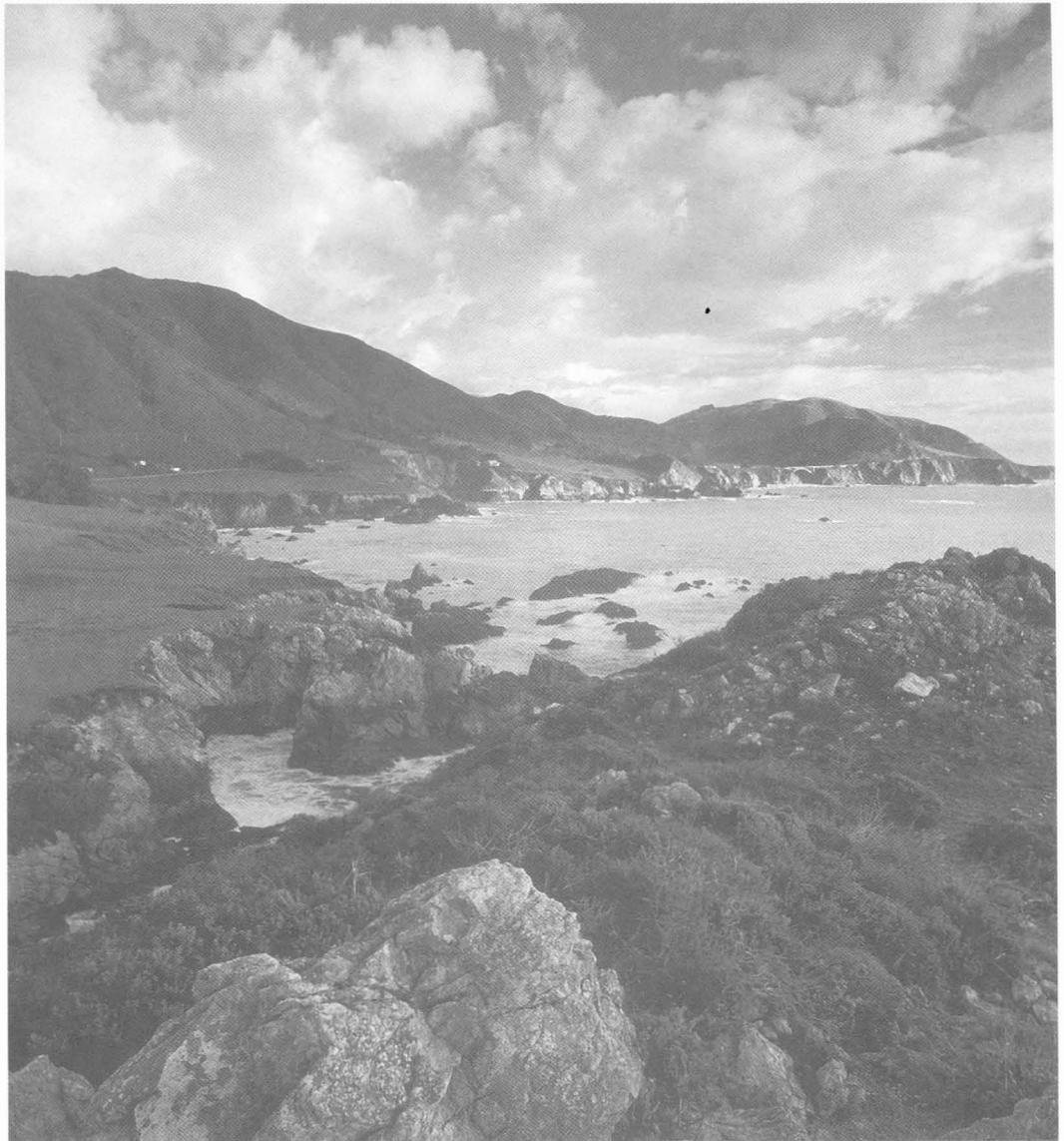
Walking toward my car, by chance I shine my light on a California newt, and it slinks slowly away. So as not to disturb it further, I avert my light and we move on, excited by the find. We've seen the night's first amphibian, even if it wasn't a red-legged frog. But then it happens: one of my companions hears a red-legged frog and waves at me. I rush over, trying to be as quiet as a big human possibly can. I am excited and nervous, my heart is pounding. At least the presence of the red-legged frog has been confirmed, even if it wasn't by me. I will definitely return next year.

We pile into our car and drive back to the city, gleaming across the water as we cross the Golden Gate Bridge, reentering the human world energized and renewed. ■

Irene Barnard is a writer and editor who lives and works in San Francisco, and tries to get outdoors as much as she possibly can (frogs or no frogs).

THE NATIONAL PARK SERVICE and many other agencies and organizations offer varied volunteer opportunities. Whatever training you may need is usually provided. You can help to restore habitat, work in native plant nurseries, help build and repair trails, monitor wildlife or stream water quality, or help others learn about natural places and systems. Many projects the GGNRA and others undertake are only possible with volunteers. To learn more, check the GGNPA website: www.ggnpa.org, e-mail volunteer@ggnpa.org, or call (415) 561-4755.

View of Notley's Landing looking south from Rocky Point



DOUGLAS STEAKLEY

INTERLINKING PAST AND PRESENT

THE RACE TO SAVE THE COAST has intensified, fueled by the strong economy. Although proposals for shoreline resorts and mansions are pushing forward, so are major conservation initiatives, funded largely by Proposition 12, the \$2 billion Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act passed by voters in March 2000.

Prop. 12 was the first park bond measure in 12 years, and it came like long-awaited rain to a parched countryside. Communities up and down the coast had been working during the dry years on cherished projects, and they were ready with well-crafted proposals when funds became available thanks to the bill's passage.

Many of these projects were developed in partnership with the Coastal Conservancy.

During the years when there was relatively little money for on-the-ground projects, the Conservancy prepared for a more generous future by providing project planning assistance and cultivating partnerships with the growing number of local land trusts, as well as with government agencies at every level.

On June 30, 2000, the governor signed the budget bill and \$250 million became available to the Conservancy, mostly in Proposition 12 funds. Thanks to the planning already in place, the agency was able to move quickly on many projects, seizing opportunities as they arose, to secure protection for precious coastal resources before they went to the highest-bidding developer.

Unlike most government agencies, the Conservancy was endowed by the legisla-



Historic views of Notley's Landing. Cables ran from the building above to ships anchored offshore (below).

ture with flexible powers, enabling it to respond quickly to fleeting opportunities. This year, it helped the Trust for Public Land (TPL) and the Big Sur Land Trust to protect some of the most magnificent stretches of the 90-mile Big Sur coastline, a grand natural treasure.

TPL's acquisition of the 1,226-acre Bixby-Ocean Ranch, with the help of \$5 million from the Conservancy, protects world-famous views and opens opportunities for public access (see *Coast & Ocean*, Winter 2000–2001). The Big Sur Land Trust's purchase of the Granite Rock property in the Monterey Dunes, with \$2 million from the Conservancy, advances the goal of protecting the unique 12-mile band of dunes along Monterey Bay (see p. 35). Like many other projects in which the Conservancy has been involved, this purchase helps to stitch together a landscape under threat of fragmentation by inappropriate development. It also protects watersheds, park and habitat lands, and scenic open space.

Usually, several goals are accomplished by each Conservancy project. The preservation of historical resources is among these, as is cultivation of stewardship to assure that the natural and historic treasures being saved today are appreciated and enjoyed in the future.

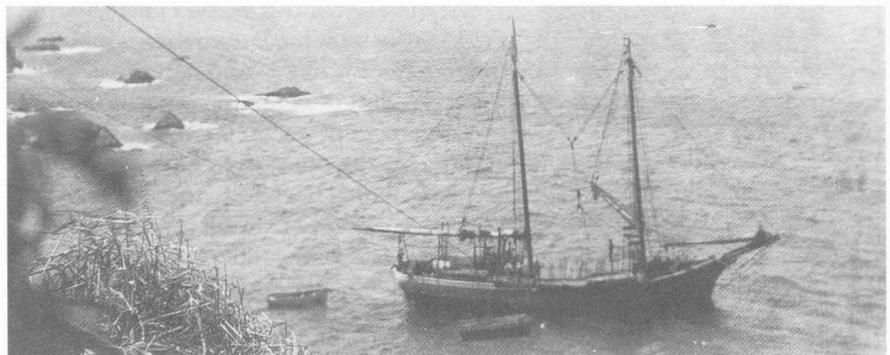
Three recent cases in point are Notley's Landing in Big Sur, the Pogonip Reserve in Santa Cruz, and the Annie & Mary Rail Trail in Humboldt County.

Notley's Landing

IT SEEMS ALMOST INCONCEIVABLE now, but from the 1890s to the 1930s ships used to anchor in a rocky cove beneath the sheer 100-foot bluffs of Big Sur to take on redwood and tan bark oak. Giant trees, cut in sections, were lowered by means of cables that ran from a boom on the blufftop to a mooring offshore and were then attached to a mast. Many trees were felled in Big Sur canyons to help rebuild San Francisco after the 1906 earthquake.

Notley's Landing has now been acquired by the Big Sur Land Trust, with the help of the Coastal Conservancy, foundation grants, and individual donations. It will be preserved as part of California's natural and historical heritage.

Situated about midway between Carmel and Big Sur Village, just south of Rocky Point and Palo Colorado Canyon, Notley's Landing (named for an early entrepreneur) was one of the West Coast's "dog hole"



PHOTOS THIS PAGE: PAT HATHAWAY COLLECTION



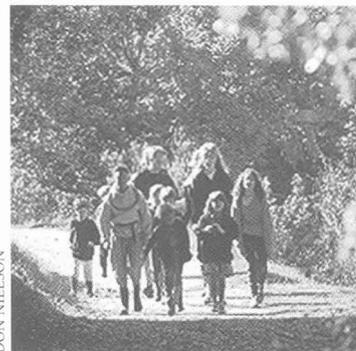
Top: Women of the Pogonip Social and Polo Club, 1940s

Below: Pogonip historic clubhouse in its heyday

Bottom: Hikers now enjoy the many trails at the Pogonip Reserve. "Pogonip" means "icy fog" in Shoshone Paiute.



COURTESY MCHENRY LIBRARY, UCSC



DON NIELSON

ports—small, often dangerous, natural cove harbors where ships could anchor to take on timber. A village of about 500 residents stood on the marine terrace above the harbor. Its dance hall, far enough from Monterey that police could not easily get to it, was known as a raucous place.

Today you can pull off the highway, walk along an informal trail to the bluff edge, and exult in the views and the natural quiet. The fragrance of sage is intense in the salty breeze blowing in from offshore. Aside from a glass-fronted house perched on a bluff across the small canyon to the south, nothing prevents you from imagining yourself standing here before the Europeans arrived. Below, waves wash the rocks. You may spot a sea otter lolling in the kelp.

Only some old photographs and texts prove that there was a town here. The port was abandoned after the Pacific Coast Highway was built in the early 1930s. A fire later destroyed vacated buildings. Now only a few hunks of concrete lie scattered on the terrace, overgrown with grasses and brush, remnants of the foundation for the cable boom.

The Big Sur Land Trust had been talking for 17 years with the landowner, who is now 94, hoping she would agree to sell the 5.59-acre Notley's Landing parcel to ensure its permanent protection. The two parties entered into an option agreement in January 2000, which the Land Trust exercised a year later. The seller stipulated that the purchase price be kept confidential, but it was a bargain: "She stuck to her price for 17 years while the value has more than doubled," Zad Leavy, founder and general

counsel of the Land Trust, told the Coastal Conservancy at its April meeting.

The Conservancy agreed to contribute \$400,000 from the Governor's Challenge Grant Program. This amount must be matched by the Land Trust. The Land Trust will maintain the historic and natural resources of the site and provide public access until Notley's Landing can be turned over to a public agency, probably the U.S. Forest Service or California State Parks. An easement over the property will be dedicated for the California Coastal Trail. The owner of ten acres across Highway 1 intends to donate that property to the Land Trust, expanding the preservation site.

Pogonip

JUST A MILE FROM downtown Santa Cruz, Pogonip is a scenic 640-acre spread of coastal prairie, woodlands, creeks, springs, and historic structures within the City of Santa Cruz Greenbelt. Visitors walking along the wooded hill-sides and in the canyons sense they are in a truly remote natural area.

This urban oasis is bordered by the University of California campus to the west and the San Lorenzo River-Highway 9 corridor to the east. Its northernmost tip borders Henry Cowell Redwoods State Park, and to the south is Harvey West Regional Park and light industrial/commercial development.

Though it may feel pristine, Pogonip has had many uses in the past 150 years. Logging destroyed its ancient redwoods in the mid-19th century. Old growth was cut not only for construction but also to fuel lime kilns. In the early 20th century, a polo field and a golf course were developed, with a clubhouse in Craftsman Bungalow style.

During the early 1970s its then-owner, the Cowell Foundation, considered developing a convention center, office complex, or a residential community. But then interest grew in creating a greenbelt around the city. Citizens passed Measure O, which identified lands for such a greenbelt, and Pogonip was among them. After much planning and discussion, the City bought the land in 1989 with bond funds from Proposition 70.

Ever since, the City and people from local communities have been working to make Pogonip a place to enjoy nature, learn about local history, and cultivate watershed stewardship. A watershed resource center is being created for citizens and profes-

sional people working on watershed restoration, and for teachers to gather to learn and share information that they then will take to students. There will also be a garden maintained by homeless people, a network of interpretive trails, and a day camp. In April the Conservancy approved \$500,000 to assist in the renovation of the clubhouse, built in 1911, for use as a visitor center and educational facility.

New Trail for Annie & Mary Railroad Corridor

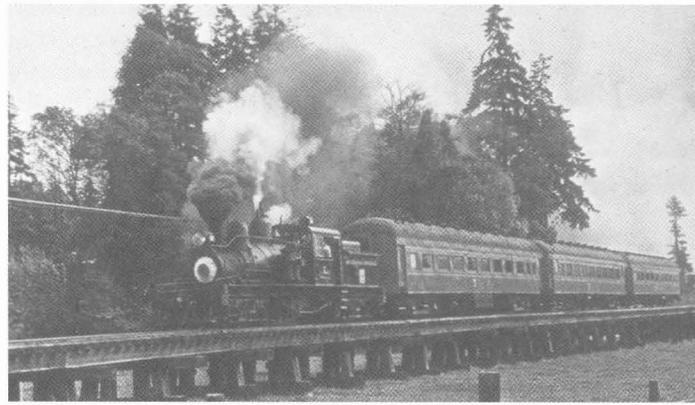
THE 6.8-MILE Arcata & Mad River Railroad line, known locally as the "Annie & Mary" for two secretaries who once worked at either end of the line, is believed to be the first railroad to operate west of the Rockies. It ran along the Mad River through Glendale and Blue Lake, ending at the Simpson Timber Company mill in Korbel. Trains haven't run on the tracks since 1992, and restoring them for use would be extremely expensive. Thousands of miles of similar corridors throughout the United States have been converted to "rail trails," including the Hammond Trail in north McKinleyville. In 1997, Humboldt County residents formed the Friends of the Annie & Mary Rail Trail to work toward restoring the corridor for recreation and transportation.

In April the Conservancy provided the Redwood Community Action Agency \$160,000 to conduct a feasibility study and prepare initial designs for a trail along the corridor. The study will address the needs of adjacent properties, renovation of historic redwood trestles and the steel bridge over the Mad River, the potential for return of rail service, and long-term management options.

The corridor includes a historic rail yard, old engines and other equipment, and a museum in the former Blue Lake railroad station. Since the railroad stopped operating, parts of the corridor have been fenced off, landscaped, or used for parking. ■



COURTESY BLUE LAKE MUSEUM

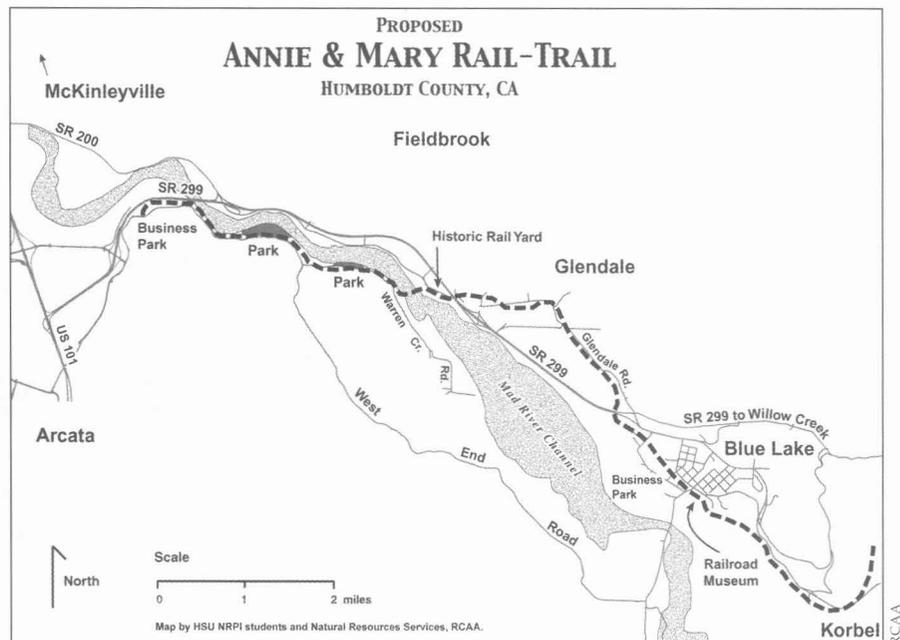


COURTESY BLUE LAKE MUSEUM

Top: This old station is now the Blue Lake Museum.

Middle: A historic train crossed a trestle on the Annie & Mary line.

Bottom: Old trestles like this will be restored.



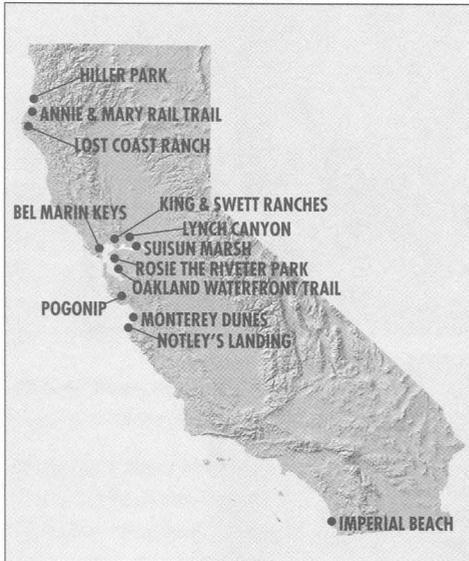
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RCAA



COASTAL CONSERVANCY NEWS



RECENT CONSERVANCY PROJECTS

DURING MARCH AND APRIL THE Conservancy approved numerous projects along the coast and on San Francisco Bay, almost all funded by Proposition 12, the \$2 billion park bond bill passed by voters in March 2000 as the Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000. Several of these projects are featured in this issue of *Coast & Ocean*. Others include:

PROTECTION FOR LOST COAST RANCH

THE CONSERVATION FUND expects to acquire the Lost Coast Ranch, a 225-acre property south of the Eel River Delta, about five miles west of Ferndale, in Humboldt County, with the help of \$1 million approved by the Conservancy in March.

The ranch includes a large, relatively flat blufftop, a series of ponds, dramatic cliffs, and a pocket beach at the mouth of Guthrie Creek. Once part of a much larger dairy and beef cattle ranch, it was subdivided into seven parcels in the 1980s, and several of these have been developed as home sites.

A study prepared by the Conservancy and Conservation Fund last year discovered that there was strong local interest in developing public access on the ranch and continuing its use as cattle grazing land. Pedestrian access to the beach at the mouth of Guthrie Creek will be available down an unpaved trail. Grazing is expected to continue on the blufftop, with the cattle fenced out of wetland and creek areas. The open grassland, creek, and wetland habitats on the property support several species of wildlife, including steelhead trout in Guthrie Creek, northern red-legged and foothill yellow-legged frogs, golden and bald eagles, bobcats, coyotes, and mountain lions.

MONTEREY BOAT LAUNCH FOR WHEELCHAIR RIDERS

THE CITY OF MONTEREY WILL design and build a wheelchair-accessible boarding facility for Monterey

Harbor with \$206,000 approved by the Conservancy in March. People with disabilities now have no safe and comfortable access to charter fishing boats, whale-watching boats, or other craft in the harbor.

A 60-foot boarding gangway will be built, hinged to a 24-by-96-foot boarding float. An electrically powered hydraulic lift will be installed on this float to transport people to and from moored boats. The first lift of this kind at a public boating facility, it is expected to be ready for use in late 2002.

The new launch will make it much easier for mobility-impaired people to take part in recreational activities provided by Monterey Bay Veterans, Inc., which operates the Sports Fishing Rehab Center at Breakwater Cove and offers deep-sea sportfishing expeditions, sightseeing excursions, and two annual "wheelchair fishing derbies," which attract as many as 250 participants. To accommodate participants at



Lost Coast Ranch

CARRIE GRANT

its special events, Monterey Bay Veterans places a small elevator lift on the fuel dock in Breakwater Cove Marina to help with boarding. From the lift, assistance is needed to get onto the deck of a boat. The California Department of Boating and Waterways is providing \$467,000 for the project.

GRANITE ROCK DUNES

SAND DUNES ALONG Monterey Bay are a signature feature of California's central coast. Extending southward from the mouth of the Salinas River to Monterey Harbor, they rise to heights of 50 to 100 feet and shelter a unique assemblage of plants and animals, some so rare that they occur nowhere else in the world.

Public agencies have long sought to protect the Monterey Bay dune complex by acquiring privately owned sections for the benefit of the public and of wildlife. But when the opportunity arose to buy the 51.26-acre parcel known as the Granite Rock property, none could meet the short option period offered by the seller.

This property is in the City of Marina, in the heart of the dune complex. It borders on land owned by the Monterey Peninsula Regional Park District to the north and the newly built Marina Dunes Resort to the south. The owner, a sand mining firm, never mined these dunes. If this extraordinary property, with its wide sandy beach, was not acquired for conservation, it was sure to be targeted for development. The City of Marina has considered it as the site for a hotel.



NICOLE NEDDEF

The Granite Rock Dunes acquisition is one more step towards creating a four-mile-long stretch of protected dunes and shoreline along Monterey Bay.



MCKINLEYVILLE

Land Trust in Humboldt County has acquired 74 acres near the mouth of the Mad River, with a beach, dunes, coastal bluffs, grasslands, and spruce forest. The Coastal Conservancy approved \$625,000 in February toward the purchase. Known as the Hiller-West property, this land is on the ocean side of the McKinleyville business district. It will be combined with Hiller Park, a community park that adjoins it to the east, and is



MATT NILSEN

linked to the Hammond Trail, a segment of the Coastal Trail. The Conservancy is now working with the Land Trust on a management plan, which will include a stairway to the beach and wheelchair access to the forest and blufftop.

The Big Sur Land Trust had been talking with the landowner for years. Unable to secure funding commitments from public agencies before the option expired, it combined its own cash reserves with a bridge loan from the Packard Foundation and bought the parcel for a price it agreed not to disclose. It was, however, a bargain. Since the landowner accepted an appraisal, eight lots of record were discovered on the property, steeply raising the potential market value. In April the Coastal Conservancy agreed to reimburse the Land Trust for \$2 million.

ROSIE THE RIVETER PARK

THE CONSERVANCY APPROVED \$500,000 for the design of the Rosie the Riveter/World War II Home Front National Historical Park visitor center and the installation of educational signs nearby, along the San Francisco Bay Trail in Richmond. During World War II, Richmond was a major shipbuilding center. The need for wartime labor created unprecedented opportunities for women and minority workers in factories and shipyards. President Clinton signed legislation last October creating Rosie the Riveter National Historical Park.

OAKLAND WATERFRONT TRAIL

THE CITY OF OAKLAND WILL PLAN and design a bicycle and footpath along nine miles of its waterfront, with the help of \$400,000 approved by the Conservancy in April. The pathway will connect open space and recreational areas between Jack London Square, Martin Luther King Jr. Regional Shoreline, and Oakland International Airport.

Heavy industry along the Oakland waterfront is being replaced by a mix of industrial, commercial, residential, and recreational uses. These changes, along with changes in land use by the Port of Oakland and the city's growing economy, have opened opportunities for transforming the waterfront into one of the city's most vibrant and valuable assets.

BEL MARIN KEYS PURCHASE

THE TRUST FOR PUBLIC LAND (TPL) has provided \$750,000 to help repay the Conservancy's loan for the purchase and restoration of the 1,613-acre Bel Marin Keys V property in southeast Novato, Marin County. The Conservancy purchased the property for \$16 million in January using, in part, a \$9 million loan from the State Water Resources Control Board.

The land was once part of a system of sloughs and tidal marshes that extended from Corte Madera to Vallejo along San Pablo Bay. The Conservancy plans to restore tidal flow to most of the former wetlands, working cooperatively with the Army Corps of Engineers, as part of the planning for wetland restoration in neighboring Hamilton Army Airfield.

TPL's funds to repay the Conservancy come from the Unocal Fund that was established following a 1990 settlement between the Sierra Club Legal Defense Fund (renamed Earth Justice Legal Defense Fund) and Union Oil of California. TPL received money to set up a fund to buy, restore, and enhance wetland properties and fund environmental education and interpretation programs for San Francisco Bay.

Although the legislature appropriated \$16 million to purchase and restore the property, \$10 million of those funds require at least an equal

match from sources other than the state government or they can't be used. The Marin Community Foundation contributed \$500,000 for the project at the time of the sale. Marin Baylands Advocates has contributed or promised almost \$70,000 through its Marin Baylands Fund since the sale. The Conservancy and its partners are trying to raise an additional \$3.5 million from private sources, along with funding from federal agencies, to match the state's funds and repay the loan.

SOLANO COUNTY RANCH LANDS

WITH THE HELP OF \$2 million approved by the Conservancy in March the Solano County Farmlands and Open Space Foundation will buy almost 1,100 acres of the King and Swett Ranches. This grant follows one of \$1 million from the Conservancy in 1999, which enabled the Foundation to purchase 500 acres of the King Ranch.

Eventually, the Foundation expects to acquire and protect a total of 3,800 acres of the King, Eastern Swett, and Vallejo Swett Ranches, all now owned by the Pacific Gas & Electric Company. The scenic open space in these ranches is in an area bounded by Highways I-80, I-680, and I-780.

The ranches provide habitat for many species of wildlife and contain potential corridors for the Bay Area Ridge Trail and many connecting trails. Over 20 miles of public trails are planned for the ranches, linking Suisun Marsh, the Carquinez Strait, Mount Diablo, and Suisun Marsh.

The Conservancy's funds will be matched by over \$950,000 from the Tri-City and County Joint Powers Authority, the City of Vallejo, and the Foundation. The Foundation will continue to seek contributions from public and private sources to purchase the remaining ranch properties.

The nonprofit Solano County Farmlands and Open Space Foundation, incorporated in 1986, works to preserve and protect farmlands, wetlands, rangelands, open space, and wildlife habitat. It holds fee title or easements on, or manages, over 6,000 acres, including Rush Ranch in Suisun Marsh, Lynch Canyon, and the Jepson Prairie vernal pool reserve.

SUISUN MARSH HABITAT IMPROVEMENTS

HELPING TO IMPROVE waterfowl habitat in Suisun Marsh, the Conservancy approved \$160,000 to Ducks Unlimited in March. The grant will extend for two years a program that reimburses landowners up to 75 percent of habitat improvement costs.

Such improvements include projects to improve water circulation and drainage, install water control structures, enhance upland nest cover, and develop brood ponds to provide summer habitat for hens and ducklings. Projects are selected by biologists from Ducks Unlimited, the Suisun Resource Conservation District, and the state Department of Fish and Game.

The highly successful program, which has included the participation of more than 70 landowners, was oversubscribed by about 50 percent last year. Approximately 80 projects are expected to be funded during the next two years.

The 116,000-acre Suisun Marsh is the largest contiguous brackish-water marsh in the United States. The marsh includes approximately 43,000 acres of privately managed wetlands and is habitat for more than 200 species of birds and 43 species of mammals. These managed marshes are maintained with extensive levees and water conveyance systems. Salinity control and vegetation management are critical to preserving habitat and require ongoing investment by landowners.

Projects funded by the program particularly benefit pairing, nesting, and brood-rearing habitat for waterfowl, including mallards, cinnamon teals, and gadwalls. The projects also serve the needs of other resident and migratory wildlife such as wintering northern pintails, short-eared owls, peregrine falcons, and loggerhead shrikes. Additional funding for the program has been provided by the state Wildlife Conservation Board, the Dean Witter Foundation, and the Harvey L. Sorensen Foundation.

COASTAL CONSERVANCY HAS NEW EXECUTIVE OFFICER

AT ITS MAY 24TH MEETING, THE Coastal Conservancy unanimously selected Samuel Schuchat as executive officer to succeed Bill Ahern, who has resigned and joined the Consumers Union to work on its national energy policy campaign.

Since 1999 Schuchat has served as executive director of the Federation of Conservation Voter Leagues, a national association of state environmental political action committees, based in Oakland; on the board of directors of the California League of Conservation Voters, and as president of its Education Fund from 1986 to 1998; and as vice president of the California Fish and Game Commission. From 1989 to 1990, he was development director, then deputy director of the Sacramento AIDS Foundation.

Schuchat is a graduate of Williams College in Massachusetts, and holds a master's degree in public administration from San Francisco State University. As a fundraising consultant, he has assisted the Mexican-American Alcoholism Program, Youth and Family Services, United Way, Legal Services of California, and other nonprofit organizations.

He currently serves on the board of the Pacific Institute for Studies in Development, Security and the Environment, and on the Commission on Building for the 21st Century.

During the three-year tenure of Bill Ahern as executive officer, the Conservancy underwent enormous change and expansion. Its budget grew from \$22 million for fiscal year 1998-99 to over \$250 million for 2000-01. The number of Conservancy projects up and down the coast and on San Francisco Bay increased correspondingly.

The seven-member Conservancy is comprised of four public members—two appointed by the Governor, one by the Speaker of the Assembly and one by the President pro tem of the Senate—and three members who serve by virtue of their office: the Secretary for Resources, Director of the Department of Finance, and the Chair of the Coastal Commission. The last three may designate representatives to vote in their absence.



PAM MUCK



BOB BERMAN

BEFORE OPENING a four-mile link of Ridge Trail through its 1,039-acre Lynch Canyon property, the Solano County Farmlands and Open Space Foundation is creating a stewardship program. Volunteers will be trained to lead hikes, work on erosion control and habitat restoration, and build the trail. The Conservancy approved \$236,400 to the

Foundation in April for these efforts and related public access improvements. The grant will also fund the first three years of a program that will bring K-12th-grade children to Lynch Canyon for science and environmental studies. A similar program at the Foundation's Rush Ranch has served 2,500 students this year.

WHEELCHAIRS FOR IMPERIAL BEACH

THE CONSERVANCY APPROVED \$11,000 to enable the City of Imperial Beach and the San Diego Unified Port District to install two motorized beach wheelchairs for disabled users at Imperial Beach. These will be the first publicly owned self-propelled balloon-tired beach wheelchairs on the Califor-

nia coast. Several other communities provide manually operated chairs that require someone to push them. The Port District will match the funds for ongoing maintenance, and the City will provide storage and personnel. If the project is successful, the Port District plans to expand the program to its other four member cities.



Marine Protected Areas: Tools for Sustaining Ocean Ecosystems, by the National Research Council. National Academy Press, Washington, DC, 2001. 288 pp., \$42.95 (hardcover). Order at (800) 624-6242 or www.nap.edu (20 percent on-line discount) This book can be read free on-line, as can many other National Academy Press titles.

CONVENTIONAL MANAGEMENT OF marine life has emphasized single-species stock assessments, catch quotas and gear restrictions. However, continuing depletion of global marine stocks highlights the need for more management alternatives. This timely report looks at one such alternative, marine protected areas or MPAs. Here human activities, from shipping to fishing, that harm marine ecosystems are sharply restricted or banned. In California, the Marine Life Protection Act, passed in 1999, calls for creation of a statewide system of MPAs that incorporates kelp forests, rocky intertidal areas and other representative marine ecosystems. In 2000, President Clinton issued an executive order to federal resource agencies to develop a system of MPAs throughout U.S. coastal waters.

The National Research Council convened a panel of marine experts to review the state of scientific knowledge on MPAs and to recommend measures to insure their effectiveness. The panel included three experts from California: James Wilen of UC Davis, Paul Dayton of Scripps Institution of Oceanography, and George Somero of Stanford University's Hopkins Marine Station in Pacific Grove. (The Station established one of the nation's pioneer MPAs adjacent to its shorefront campus that permits scientific use only.)

The panel reviews the various goals of MPAs. One type of MPA, the marine "no take" reserve, bans all fishing to help rebuild depleted stocks, particularly of slow-maturing, relatively sedentary fish such as groupers and

rockfish. Such reserves help fish live longer and spawn more eggs, which in turn allows the replenishment of surrounding areas. Other goals can include providing educational opportunities, increasing scientific knowledge, and enhancing marine recreation and tourism. Underwater visitors like their coral reefs live and not fished out; scientists value intact marine ecosystems to better understand how species interact and how communities can change over time. At the MPA off Hopkins Marine Station, scientists have been able to document a shift from cold water species to warmer water species that could be linked to global warming. In evaluating the costs and benefits of MPAs, the report stresses the need to measure so-called non-consumptive uses, such as protecting marine biodiversity.

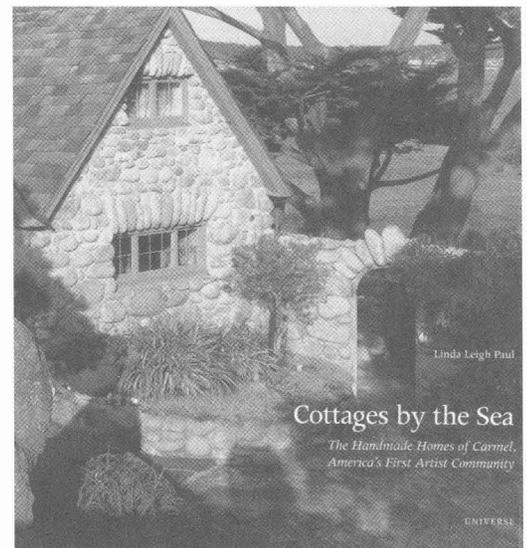
There is an extensive section on design of MPAs. Some supporters advocate setting aside a set percentage of a region in marine reserves. The report demurs: "The first priority for implementing reserve sites should be to include valuable and vulnerable areas rather than to achieve a percentage goal for any given region." The report urges that reserves be integrated with broader management plans, such as buffer areas around sensitive marine habitat to reduce the risk of ship groundings or pollution discharges. In Australia, the Great Barrier Reef has been zoned into areas that range from intensive use to scientific use only, depending in part on habitat sensitivity.

The report also urges broad public participation in developing MPAs to ensure community support. Commercial and recreational fishermen can help identify valuable candidate sites, such as spawning and feeding areas. At the same time, fishermen are very concerned about a "double whammy" effect: losing access to prime fishing grounds that leads to intensified fish-

ing pressures on remaining areas. Careful monitoring after an MPA has been established can reveal if goals are being met and whether adjustments in size or permitted uses are needed.

Because of its comprehensive nature and extensive literature citations, this report will no doubt be of value to persons and organizations involved in establishing MPAs and to the many stakeholders whose activities may be benefited or restricted by the creation of MPAs.

—Wesley Marx



Cottages by the Sea: The Handmade Homes of Carmel, America's First Artist Community, by Linda Leigh Paul, principal photography by Radek Kurzaj. Universe Publishing, New York, 2000. 224 pp., \$35 (hardcover).

THE HANDMADE COTTAGES OF Carmel are wonderful manifestations of the creative impulse. Many are every bit as much works of art as the better-known products of those who built and inhabited them. The fine and plentiful color photographs allow us to enter and explore the cottages, and the text and historic photographs tell how

they came to be. The book is especially timely in light of current threats to the survival of many of Carmel's unique houses (see *Coast & Ocean*, Spring 1999). Many of these cottages look like they emerged from storybooks, and it's plain to see that there are fascinating stories behind them. Not only their designs, but the materials with which they were built have character, and their relation to their surroundings and their solutions to problems of construction show remarkable ingenuity. Linda Leigh Paul and Radek Kurzaj have created a book that exudes a warm welcome into this world of cozy cubbyholes—a most refreshing contrast to the slapdash postmodern construction so much with us today.

—HMH

REPORTS TO AID IN SAN FRANCISCO BAY RESTORATION

Baylands Ecosystem Species and Community Profiles, prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project, P. R. Olofson, Ed. San Francisco Bay Regional Water Quality Control Board, Oakland, CA, 2000. 412 pp., \$25 (paper).

Restoring the Estuary: Implementation Strategy of the San Francisco Bay Joint Venture, by J. T. Steere and N.

Schaefer. *San Francisco Bay Joint Venture*, Oakland, CA, 2001. 112 pp., free, \$15 for additional copies (paper).

THE 1999 PUBLICATION OF *Baylands Ecosystem Habitat Goals: A Report of Habitat Recommendations by the San Francisco Bay Area Wetlands Ecosystem Goals Project* (see *Coast & Ocean*, Winter 1999–2000, p. 32) was a landmark. It provided a comprehensive and integrated view of historic and current habitat conditions around San Francisco Bay, and also set forth practical guidelines for restoring and improving those habitats. Two recent publications amplify the picture.

Baylands Ecosystem Species and Community Profiles, a companion volume to *Habitat Goals*, compiles in-depth descriptions of key species on which the goals were based: plant communities, fish, invertebrates, amphibians and reptiles, birds, and mammals that serve as critical indicators of habitat health. The environmental conditions required by these species are discussed, along with their interrelations and interdependencies. Much of this information has not previously been published or compiled, and it is complemented here by extensive bibliographical material. Though much of the writing is somewhat technical, being addressed primarily to those

actively involved in restoration projects, the book offers much to the layperson as well, especially in illustrating the great complexity of the web of life within wetlands.

Restoring the Estuary, based upon *Habitat Goals*, describes specific restoration projects and breaks each down into practical components. It discusses acquisition, enhancement, and restoration objectives and strategies, as well as monitoring, funding, and roles of Joint Venture partners. This report was prepared by the San Francisco Bay Joint Venture, a partnership of 27 public and private agencies and organizations formed in 1995 as an extension of the North American Waterfowl Management Plan.

For copies of *Habitat Goals* and *Species and Community Profiles*, contact San Francisco Estuary Project, c/o S.F. Bay Regional Water Quality Control Board, 1515 Clay Street, Suite 1400, Oakland, CA 94612; (510) 622-2465 (see also www.sfei.org for updates and more information). *Restoring the Estuary* can be ordered from San Francisco Bay Joint Venture, 1330 Broadway, 11th floor, Oakland, CA 94612; (510) 286-6767; or downloaded from www.sfbayjv.org.

LETTERS



Editor:

Congratulations on your Winter 2000–2001 issue. I read this and the previous issues and think they're excellent. Not only are they interesting, but there is a good blend of positive and negative. The magazine is not heavy and bleak (as the Sierra Club magazine sometimes is), nor is it overly self-promotional about successes. Also, the writing quality is very good.

On page 38, the article about the book *A Living Bay* mentions that a few of the underwater photographs are on

"our web page." I can't find them. Can you give me a specific URL?

Bobbi Gold
by e-mail

You can find *Coast & Ocean* on line at www.scc.ca.gov. If you click on "Conservancy Publications" you'll find links to all our on-line issues. Click on "Coast & Ocean magazine" to go directly to the current issue.

We love to hear from our readers, and we publish letters that add to the discussion of issues. As much as we enjoy getting pats

on the back, we don't publish purely complimentary letters. You can write to us at 1330 Broadway, 11th floor, Oakland, CA 94612, or e-mail to calcoast@igc.org.—Ed.

Editor:

I recently was privileged to be given a copy of [Winter 2000–2001] *Coast & Ocean*, and I wish to comment on two articles. I am a winter snowy plover surveyor in the Point Reyes Bird Observatory Snowy Plover Program. I survey three beaches and have done so for many years in the Bodega Bay area.

Anne Canright is right on in "Sharing Space with Wild Animals." Unleashed dogs are a major problem, despite leash laws in both Marin and Sonoma counties, from a sanitation as well as a bird harassment perspective. Law enforcement response is always the same—"understaffed and low priority." I have never seen enforcement despite violations occurring in front of officers.

More importantly, however, [regarding "Brant on Morro Bay" by Ruth Ann Angus, featuring the work of John Roser] I think that you owe it to your readers to be accurate. On my own, I also monitor and report banded brant on Bodega Bay. I would like to point out a number of what I perceive as confusing statements or errors.

1. USFWS requires that all banded birds have USFWS metal bands as well as the plastic, not in lieu of as seems implied. Brant have them on the leg opposite the plastic band.

2. It is illegal to hunt waterfowl from a moving motorized boat, with a rifle, and for the adult accompanying a youth on Youth Hunting Day to hunt. You have three code violations here, all of which should have been immediately reported to CalTIP at (888) DFG-CalTIP. One never hunts waterfowl with a "rifle."

3. It is stated the band was Y6V7. I don't think so. Four-digit codes were prior to 1987 and were one letter and three numbers. Information provided by Bird Banding Laboratory USGS Patuxent Wildlife Research Center. All brant bands I have ever read even on birds banded prior to 1987 (and we are talking about leg bands only) are a combination of three letters/numbers.

4. It is stated that the brant are the smallest of the geese migrating along the Pacific Flyway. I would disagree. The average brant weight [is] 3.1 lb.; the average Ross's goose weight [is] 2.7 lb. References: Sibley, *Guide to Birds* and Johnsgard, *Waterfowl of North America*.

5. I'm a hard-core birder as well as a hunter, and I may be overly sensitive, but I do feel a bit of anti-hunting tone

to this article. At both Tomales and Bodega bays jet skis, wind surfers, and personalized watercraft make the hunting disturbance to the brant here microscopic by comparison.

Frederick W. Hanson
Davis

John Roser replies:

1. *I reread what Ruth Ann Angus wrote. It seems minor, but yes, they do have stainless steel bands that are intended to be more permanent but are also intended to be read with the bird in hand, and cannot yield the data that can be gathered with plastic bands, good telescopes, and careful observers.*

2. *On the three violations: 1) Nobody shot—the two kids in front pretended to. 2) The adult was at the motor and didn't pretend to shoot. 3) Ruth Ann should have written 'shotgun' instead of 'rifle'. What Hanson didn't mention is that it is illegal to intentionally harass wildlife in this manner (gunning the boat into and flushing a large group of geese). On a related note, for the last two years I've been trying to get DFG to deal with hunters who do illegally chase brant with motorized boats during the regular hunting season and haven't been able to get anyone out, partially because they are understaffed and the one warden responsible for a very large area which includes Morro Bay has a lot going on that time of year. I would also like to say that by far the majority of hunters who operate on Morro Bay do so legally with respect to the established laws.*

3. *I've been up banding brant in Alaska and work closely with the person who manages the flyway-wide band resighting database for Pacific brant. I've also racked up close to 3,000 resightings in the past four years. The bands are three characters, but the 'Y' refers to the color of the band (breeding locality) and the flyway-wide database would register this bird as Y6V7. Four-digit codes have not been used, but two-digit codes were used early on.*

5. *I cannot intelligently comment on affairs in Tomales and Bodega bays, but after four complete seasons (each season includes one month of hunting and five months without hunting) and hundreds of hours of observations, I can safely say that what Ruth Ann*

VISIT OLD SAN DIEGO ON-LINE

THE SAN DIEGO HISTORICAL Society's web site offers glimpses into southern California's past. Photographs, videos, text, and recorded sounds are woven into an evocative tapestry. The photo gallery, one of the features on the site, includes old pictures of breweries and diners, motorcycles and bicycles, a video of three-pole tuna fishing, and (my personal favorite) early baseball teams, as well as the more usual shots of buildings and people. "Slide shows" of old postcards and stereograms allow quick previewing of larger images. Prints of all photos can be ordered on-line.

Items from the Society's curatorial collections may also be viewed. The Musical History collection includes early recordings played on old phonographs, which are pictured.

In *Stranger Than Fiction: Vignettes of San Diego History*, Richard W. Crawford tells intriguing stories, including that of the steam bark *Narwhal*—one of the last remnants of the U.S. Pacific whaling fleet—which continued to play a part in the region's history long after it had been retired, stripped, beached, and abandoned.

All this and more can be found at www.sandiegohistory.org.

—HMH

wrote is correct. Hunting is by far the largest disturbance to brant on Morro Bay, and no other disturbance source comes close to it. It should also be noted, as the article did, that other sources of disturbance are increasing in frequency (kayaks, canoes, windsurfers). We do not have a serious problem with personal watercraft.

Ruth Ann Angus adds:

Brant and Ross' geese are about the same size. We get very, very few Ross' geese on the coast.

Morro Bay is the smallest National Estuary in the National Estuary Program. It is a really unique area, and we would like to preserve some of this habitat for wildlife only.

Spring-Watching Pavilion

A gentle spring evening arrives
airily, unclouded by worldly dust.
Three times the bell tolls echoes like a wave.
We see heaven upside-down in sad puddles.
Love's vast sea cannot be emptied.
And springs of grace flow easily everywhere.
Where is nirvana?
Nirvana is here, nine times out of ten.

—Ho Xuan Huong (c. 1775–1825)

檯 看 春

淹 愛 朝 春 細 看 檯
凌 凌 庄 泮 岫 塵 埃
已 回 招 墓 鍾 吟 澗
沒 奉 喪 滄 諾 論 歪
波 愛 廝 重 坤 撒 泮
源 恩 闖 丈 楊 濶 瀉
鬧 鬧 極 樂 羅 兜 佐
極 樂 羅 低 尠 燿 迺

BORN AT THE END of the tumultuous second Lê Dynasty (1592-1788), Ho Xuan Huong was “famous for being able to compose perfectly structured poems off the top of her head.” At a time when men dominated poetry and wrote in the elite Chinese language, she wrote mostly in Nôm, an early writing system that represented common Vietnamese speech. Her writing defied political, social, and religious conventions. She was allowed such indiscretions because of her brilliance as a poet, noted for “her verbal play, her wicked humor, her native speech, her spiritual longing, her hunger for love, and her anger at corruption.” [Quotes are from the translator’s introduction.]

“Spring-Watching Pavilion” by Ho Xuan Huong from *Spring Essence: The Poetry of Ho Xuan Huong*, translated by John Balaban. Copyright 2000 by John Balaban. Reprinted with permission of Copper Canyon Press (www.coppercanyonpress.org).



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