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coast & ocean



Hearst Coast Goes Public
A City's Creeks

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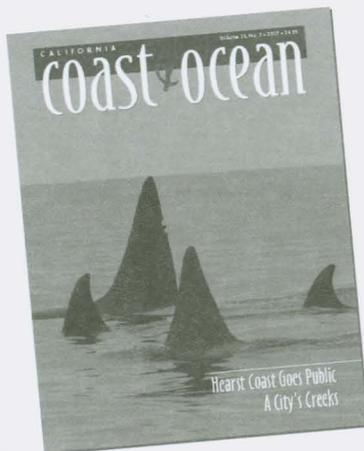
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To See the Whole Picture

WHEN I WAS A SMALL CHILD, my father would often be late for dinner because he was up in the sky, flying and watching the sunset. After a day of hard work he simply had to do it. Flying was in his blood. He designed and built airplanes, which he named ANBO. My mother said that stood for the combination of the first letters of both their names, but to the aviators of his day in Lithuania it stood for *Antanas Nori Buti Ore*—Antanas wants to be in the air.

My father's life was one of the millions extinguished by the dark forces of World War II, when I was not yet six years old, so my memories of him are blended with stories I heard and photographs in the family album. In one of my favorite photos he's sitting in the first plane he built, in front of the farmhouse where he was born. That little plane won him a scholarship to study aeronautical engineering in Paris. He became one of his country's leading aviation pioneers. When I went back to Lithuania for the first time, as the Soviet Union was collapsing and the Baltic States were reclaiming independence, I was amazed to be shown the real thing, an aircraft that looked like an antique handmade toy, hanging from the ceiling of a loft in the city of Kaunas. It had been dismantled and hidden for almost 50 years, through the German and then the Soviet occupations, then put back together again. It is now on display in the War Museum, in Kaunas.

The love of flying is widely shared in Lithuania, I discovered, and wondered why. Perhaps, I thought, it can be explained at least partly by topography. The country is so flat that any little rise in the land is called a mountain; perhaps this generates a longing for an elevated perspective. But if so, then what about Icarus, in mountainous Greece? What about my two-year-old grandson building a rocket from his blocks? The longing to rise above our normal horizon seems to be universal. Its expressions vary with changes in society and technology.

The early aviators had to be at one with the elements. They had to recognize and understand the patterns of wind, clouds, landforms, and water because their survival depended on their ability to navigate with them. (Read Antoine de Saint-Exupéry's *Wind, Sand and Stars* and *Night Flight*.) Today, pilots of commercial and military aircraft depend far more on instruments. Millions of airline passengers cross oceans and continents without ever having to look down at what's below and around them, intent on games, music, or movies on a small screen.

More and more in our society we are isolated from direct experience of the natural world and confined to frameworks that provide only limited and distorted pictures of the planet we are part of. The forces of ignorance and greed would have it so, but that fact has not extinguished the desires that took many of the early fliers into the sky. We need experiences that allow us to perceive as a whole the things we are only offered in fragments. We want the whole picture, with ourselves in it. That need is there even in people who don't recognize it. And where there's a need, of course, there is also a response.

In this issue you can read about two unique and immensely valuable contribu-

Ready for takeoff with Carl Bice in his ultralight trike



tions to conservation that were born of the love of flying: Gabrielle and Ken Adelman's awesome Coastal Records Project, and LightHawk, an organization of pilots who volunteer air support for environmental causes.

Do go on, after reading about them, to "Mapping Past and Present Creeks of San Francisco." The desire to know our interconnections extends down into the ground and into the past, as well as up into the air and into the future. The San Francisco creeks map, too, is a creation of love nurtured with passion. And as Isaac Singer said in an interview with Studs Terkel recorded in the KFFPA archives and broadcast on Thanksgiving weekend, there can be no compassion without passion. He went on to say that in German the word for suffering, *Leiden*, has the same root as the word for passion: *Leidenschaft*. These three—passion, suffering, and compassion, all interconnected—could well be keys to discovery of the whole picture.

—Rasa Gustaitis



Tomales Point



NOT MUCH HAS CHANGED—AND MAYBE THAT'S OKAY

Back at the Hearst Ranch

THREE YEARS AGO, a hard-won and convoluted agreement ended one of the most acrimonious land-use battles in California history. The deal ensured that almost all of the 82,000-acre Hearst Ranch on the San Luis Obispo County coast will remain undeveloped, its stunning views preserved forever, with 13 miles of the 18-mile shoreline transferred to California State Parks. Many facets of the agreement remain controversial, and it is by no means clear how—or if—they will be implemented. But one unambiguous fact anchors the accord: This nonpareil stretch of coast is now open to the public; average citizens will never again be excluded from its shores.

GLEN MARTIN

Looking north toward the Santa Lucia Range from the northernmost part of the Hearst property that is open to the public



Metal cables rust on the northern coast of Hearst Ranch in an area sometimes called Iron Rocks.

The ranch, of course, is best known for Hearst Castle, which commands a sublime view of the coastline from the summit that William Randolph Hearst dubbed *La Cuesta Encantada*. Built over a period of 30 years beginning in 1922 and donated to the State in 1957, it is one of California's most popular tourist attractions, annually drawing millions of visitors to view the lavishly landscaped grounds, palatial edifices, and vast art collection that Hearst acquired from various European estates.

In many ways, the castle always has been ancillary to the huge ranch that envelops it—especially to Hearst's heirs, who generally have viewed the property as an essential part of their patrimony. The family's business arm, the Hearst Corporation, tried for many decades to turn the ranch into a significant profit center.

The initial vision was nothing if not grandiose. In 1965, the corporation proposed a development designed to ultimately top out at 60,000 residents and include an airport, college, and hospital. Despite bitter public opposition, that

proposal was bruited about for years; county planners killed it in 1980.

Hearst came back with a different proposal, mostly focused on and around San Simeon and Ragged Points. It was tossed back and forth a couple of times between the board of supervisors and the Coastal Commission, reshaped and scaled down a bit, but failed to come to fruition.

The struggle over the future of the north county coast came to a head at the Coastal Commission hearing on January 15, 1998. At this point the Hearst proposal included a resort complex with three hotels, a convention center, blufftop golf course, dude ranch, restaurants, and shops. Hundreds of people packed the largest hall available in San Luis Obispo and spilled into the lobby. Most spoke in passionate opposition, though Hearst also had a well-organized crowd of supporters. The Commission rejected the Hearst plan, approving instead a scaled-back project that would allow 375 hotel rooms at San Simeon Point.

Open-space advocates remained firm in their opposition to any major development at the

ranch, though, and in 2002 Steve Hearst, the head of the corporation's land division, switched strategies. The corporation pitched the idea of a conservation easement, which would keep most of the ranch as open space in exchange for a cash payout and some development rights.

Out of that broad concept, fine-tuned over three years with the collaboration of various land conservation groups and agencies, an agreement ultimately was forged. Major points include:

- The State would pay Hearst \$95 million in cash and tax credits in exchange for retiring development rights on 80,000 acres east of Highway 1 and protecting this land for agriculture and habitat by means of an easement.
- The corporation would retain the right to build a 100-room hotel at Old San Simeon Village, 15 employee homes at different sites, and 27 homes, each with a five-acre core site and a 20-acre buffer zone, east of Highway 1 and out of sight from the road. To exercise these rights, the corporation would have to secure the necessary permits.
- Hearst would donate 1,500 acres west of Highway 1, with 13 miles of shoreline, to the State, retaining 700 acres, with five miles of private beaches, at San Simeon Point, Ragged Point, and Pico Cove. An easement to protect scenic views would be placed on these properties and held by Caltrans. Public access to San Simeon Point would be limited to 100 people a day. At Ragged Point, guided walks for up to 20 people would be offered once a month.
- A contiguous 18-mile stretch of Coastal Trail would be allowed west of Highway 1.
- A section of Highway 1, roughly two miles long, would be moved east—in some spots several hundred feet inland—to prevent damage by coastal erosion. The acreage that would then be west of the road would be added to the state parkland.

The closing of escrow on the acquisition was announced by Gov. Arnold Schwarzenegger on Feb. 18, 2005. Soon after, these 949 acres were transferred to State Parks, to be added to San Simeon State Park. This year, the 20-acre Piedras Blancas Motel site was added. What else has happened? Not much, save for ongoing monitoring of the conservation easements, the expansion of some boardwalks near elephant seal rookeries, and the installation of a few pedestrian entrances. But that's not necessarily a bad thing.

True, no public campgrounds or trails have been developed along Highway 1, but no McMansions have sprouted east of the highway, nor is there a new resort at San Simeon Cove. So far, Hearst hasn't sought a single building permit. The ranch looks much the same as it did right before the agreement—the same, in fact, as it has for a century or more. There is the rocky coast, fronted by grasslands and chaparral that roll up against oak uplands. The Santa Lucia Range stands as a rampart to the east, sometimes exquisitely detailed in full sunshine, sometimes dark and brooding, partially obscured by fog and shadows.

You could imagine Drake sailing up this coast, observing a landscape not appreciably different from that which exists today—Hearst Castle being the one exception, of course. Located 30 miles north of Morro Bay on the Enchanted Hill, it ineluctably draws the eye. Yet somehow it doesn't clash with the wild landscape; it looks otherworldly, like something from another time, or out of time altogether.

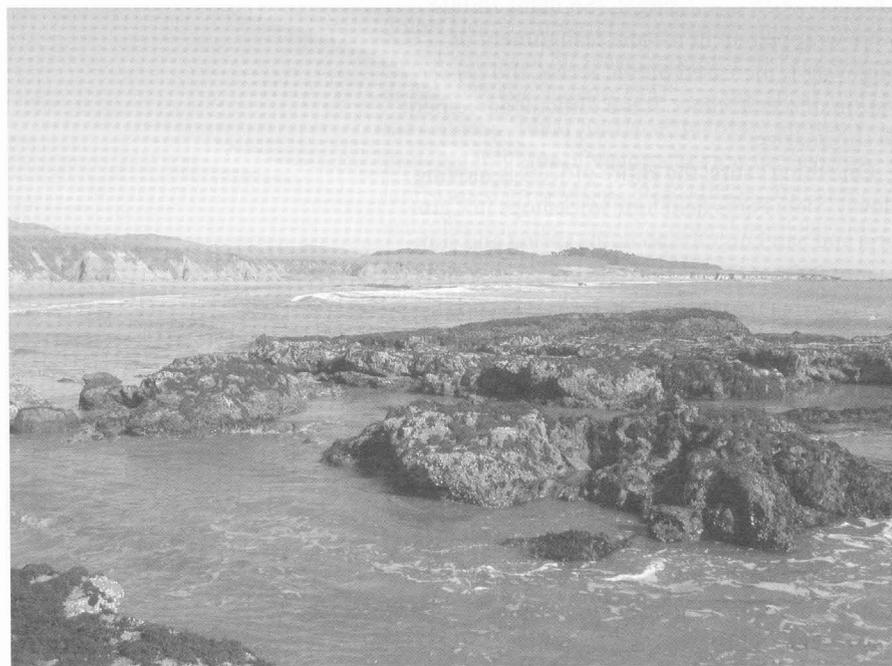
When the deal closed, much remained vague. It was not clear when or if the Hearst Corporation would try to build the ranchettes east of Highway 1, or the resort at San Simeon Cove. Nor was it determined when State Parks would develop the Coastal Trail or when campsites would be established.

"It was a very large and very complicated project, consisting of many components," observed Steve Horn, former executive officer of the Coastal Conservancy, who participated in the negotiations—and who still seems a little fatigued when discussing it. "So many things were wrapped up in it—the realignment of Highway 1, increased public access, the conservation of scenic views. It is a difficult agreement to summarize."

One thing's sure: the entire process is moving slowly. State Parks held four workshops in Cambria and San Luis Obispo in the spring and summer of 2006 to enable the different groups and agencies that participated in the deal to coordinate future plans and provide interested citizens the opportunity to comment.

"The one thing we [got] from the public is that they want the least disturbance possible, and we're honoring that request," said Leander Tamoria, State Parks' supervising ranger for the San Luis Obispo Coast District. "We're not sure what the final configuration will be, but we want to make the impacts to the land minimal."

Currently, State Parks is wrapping up studies of the coastal property's archeological and nat-



ural values. Some surprises have emerged, most notably the presence of the Smith's blue butterfly, a federally listed endangered species. It feeds on coast buckwheat, a fairly common plant in the area. Park staffers also are removing invasive flora, particularly pampas grass and ice plant.

In the meantime, visitors have free access to the coast at any point along the 13 miles of new state parkland, with the exclusion of elephant seal rookeries, where safety requires that people stay at a distance. Hearst is not enforcing its rights along the five miles of shoreline it has retained, so the informal access that has long existed there continues. Guided tours on San Simeon Point and Ragged Point have yet to happen.

Access to beaches and coves can be had via primitive trails that wend through the thick vegetation, and for the foreseeable future a certain laissez-faire policy will prevail: people are allowed, if not explicitly encouraged, to get to the coast as best they can.

"That's what they've been doing for decades, and we expect that to continue," Tamoria said. "Places like Piedras Blancas and Arroyo de la Cruz [to the north] are places where access is pretty easy. At other spots, we recommend that visitors make sure they pick good, wide turnouts and carefully negotiate any possible impediments like barbed wire."

State Parks has installed a couple of pedestrian entrances at traditional access areas—such as a good surf break north of Piedras Blancas Lighthouse—and plans to add more. Parking is informal along the highway. There are no new public restrooms: the easement held by Caltrans will not allow for any structures visible from Highway 1. A creative solution is being sought.

At this point there are no new campgrounds or hostels. Visitors must still compete for the 115 sites that now exist in the park, stay in the rather pricey motel rooms at San Simeon Acres, or head south to the more numerous motels and campgrounds at Morro Bay and Cambria.

Three possible locations for new campgrounds exist: at the Junge Ranch between San Simeon Creek and the town of San Simeon; the Molinari Ranch, just north of the existing campground at San Simeon State Park; and on a 20-acre blufftop parcel north of Point Piedras Blancas, site of the former Piedras Blancas Motel, acquired recently with the help of the Coastal Conservancy and the Trust for Public Land. All three properties are now state parklands. At a public brainstorming session about the future of the motel and its site held on

November 14, those present agreed they want low-cost overnight accommodations there.

“We’re taking slow methodical steps for a reason,” Tamoria said. “We want to make sure our mapping and resource inventories are comprehensive, and we want to avoid overbuilding. We’re asking the public to be patient.”

That aside, many who have tracked the agreement’s tortuous course still wonder: Was it a sound deal? As Horn noted, its most salient quality is its complexity, and opinions still vary on whether Californians got good value for their \$95 million investment.

One who thinks they didn’t is Mark Massara, the Sierra Club’s California coastal program director, a lawyer and ardent surfer. He has numerous complaints—for one, he thinks the San Simeon resort and the luxury homes east of Highway 1 are abominable—but what really sticks in his craw is the lack of public access to the 80,000 acres east of the highway. “If things stay as they are,” he commented, “there never will be a public trail from the coast to Fort Hunter Liggett [on the east side of the coastal range]. This is something conservationists always hoped to see, and it’s the minimum we should’ve expected from the process.”

Nevertheless, he also believes that more might be gained from Hearst down the road. Specifically, coastal advocates could rally against the corporation if it tries to exercise its development options. While Hearst has the right under the agreement to apply for development permits, San Luis Obispo County and the Coastal Commission are not obliged to approve them. “That gives us a lot of leverage,” Massara said.

Many of the agreement’s supporters, however, point out that increasing coastal access was not the primary goal of the deal. “What this is really about is the preservation of the property’s natural and ranching values,” said Bruce Gibson, a recently elected San Luis Obispo County supervisor and a former leader of a local ad hoc group that supported the agreement. “This was basically about the conservation easement, and from that perspective, it was a total success. The easement set a new benchmark, imposing conditions that went way beyond the usual standards of the day. It retired 97 percent of the ranch’s development value and put tight constraints on the remaining three percent.”

One of the conditions of the easement is a monitoring program to ensure that the Hearst Corporation adequately maintains the ranch’s rich natural resources—the rangelands, oak



forests, riparian corridors, and the wildlife that depends on them. Even opponents of the agreement generally acknowledge that the property was maintained very well: historically the corporation was a good steward.

The California Rangeland Trust, a conservation organization composed of ranchers and their advocates, holds the easement on the east-side lands. Twice a year, biologists and rangeland ecologists working under contract to the trust check 57 sites for compliance. They measure the amount of residual forage to determine if overgrazing is occurring, and examine environmentally sensitive areas to make sure they are not being damaged. The trust has the final say on easement compliance. If it determines that Hearst has violated easement terms, it must enter into arbitration with the corporation. Should that process fail to yield a resolution, court action would follow.

Critics of the deal claim the arrangement is too cozy for Hearst. A ranching association, they say, could hardly be expected to take a big stick to one of the largest grazing operations in the state. But the trust maintains that its record of protecting open space and wild ecosystems is sound. “We’re now in our third [year of] monitoring,” said Michele Clark, the trust’s liaison with the Hearst Corporation. “Admittedly, two years is a very short timeframe in the history of the ranch, but so far there has been no real change. Things are looking very good.”

Above: One of many streams on the Hearst Ranch

Opposite top: Looking south along Highway 1 toward San Simeon Point

Opposite bottom: Tidepools at Arroyo Laguna Beach

Any development on the Hearst property will require an extensive permitting process, with no guaranteed outcomes. Permits would be issued on a project-by-project basis, but only after the San Luis Obispo County Coastal Plan is revised. Attempts to revise the plan during the past decade stalled, usually over the Hearst Ranch. Now, with the conservation easement in place, it seems likely a final plan revision will be adopted in the next year.

Ultimately, the Coastal Commission will have to sign off on everything—not only on the county plan changes, but on each project as well. Commissioners may have serious reservations about any construction on the San Luis Obispo County coast. Water, in particular, is a potential deal breaker. The Central Coast has a Mediterranean climate, with relatively scant rainfall. In the past two decades, water shortages sometimes have been extreme. “We have long commented that water is a very critical issue [for the Hearst property], one that would have to be addressed by the county plan,” said Tami Grove, the Commission’s development and transportation liaison.

Grove added that any proposed Hearst development would raise other concerns as well. “For

example, the Coastal Act stipulates that Highway 1 must remain two lanes in rural portions of the state, which certainly includes the San Simeon area. It remains to be seen how that could affect a resort at the cove.” For that matter, said Grove, the agreement’s general consistency with the Coastal Act remains unclear. That includes the realignment of Highway 1 north of Piedras Blancas Lighthouse due to beach erosion concerns—a project further complicated by home development on nearby private parcels that are surrounded by the ranch. The building permits were issued before the realignment was approved, and it now appears that the new routing could put the highway through at least one home currently under construction. It’s possible Caltrans will have to purchase the property to complete the realignment, raising the cost of the project significantly. “Caltrans is currently involved in a discussion with the [property owners], and the Coastal Commission is part of that process,” said Grove. “It’s one of many things that must be worked out.”

Much remains to be resolved. Roger Lyon, a Cayucos attorney who helped broker the agreement on behalf of Hearst, said that he believes “people are going to appreciate it more and

Visitors look south from the old Piedras Blancas Motel site, where they gathered on October 19 to celebrate its addition to San Simeon State Park. The 20-acre property provides beach access and space for about a mile of California Coastal Trail.

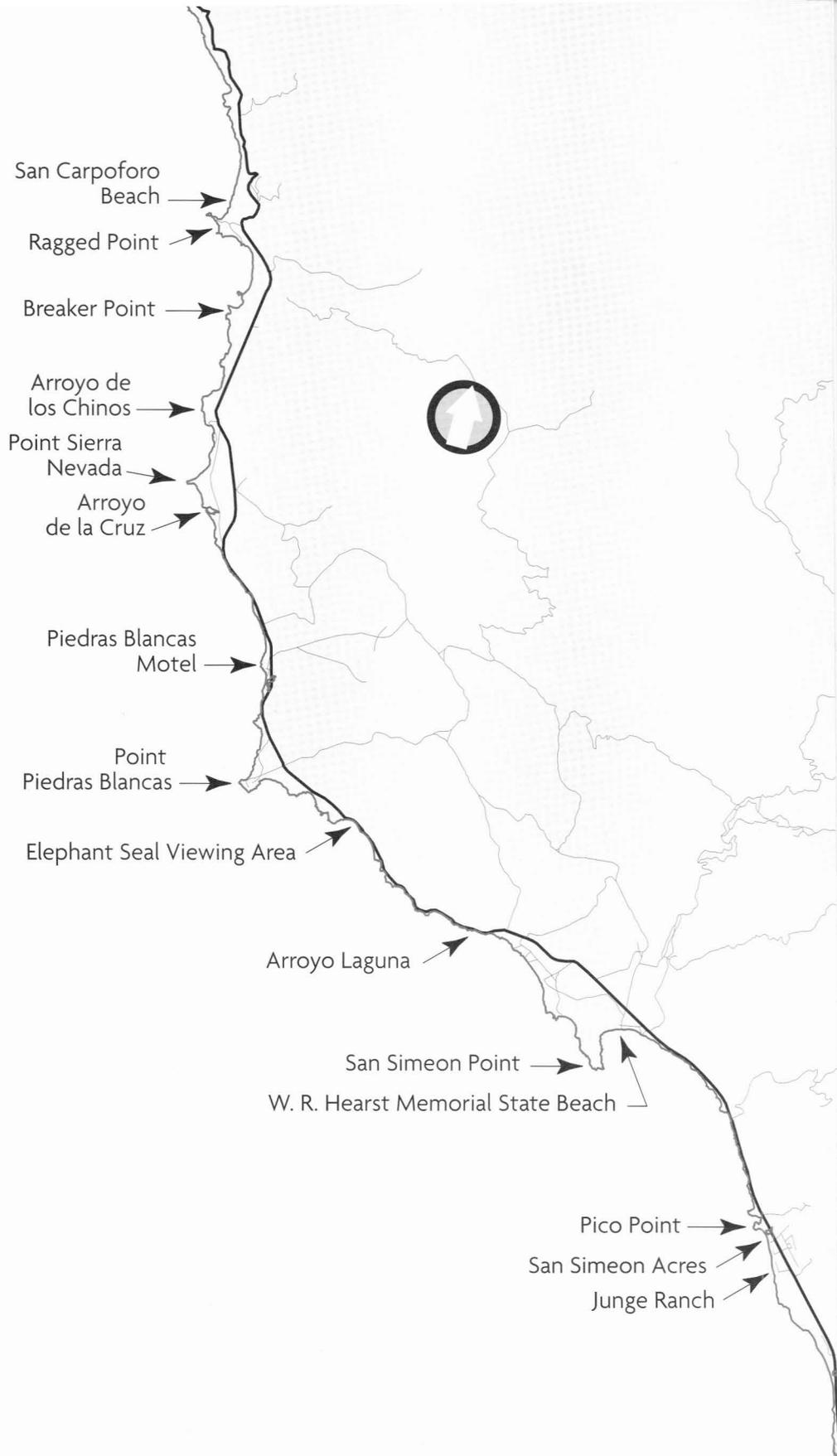


more as time goes by. In all of the public meetings, what [we've heard] is they want things pretty well left alone, and that's what's happening."

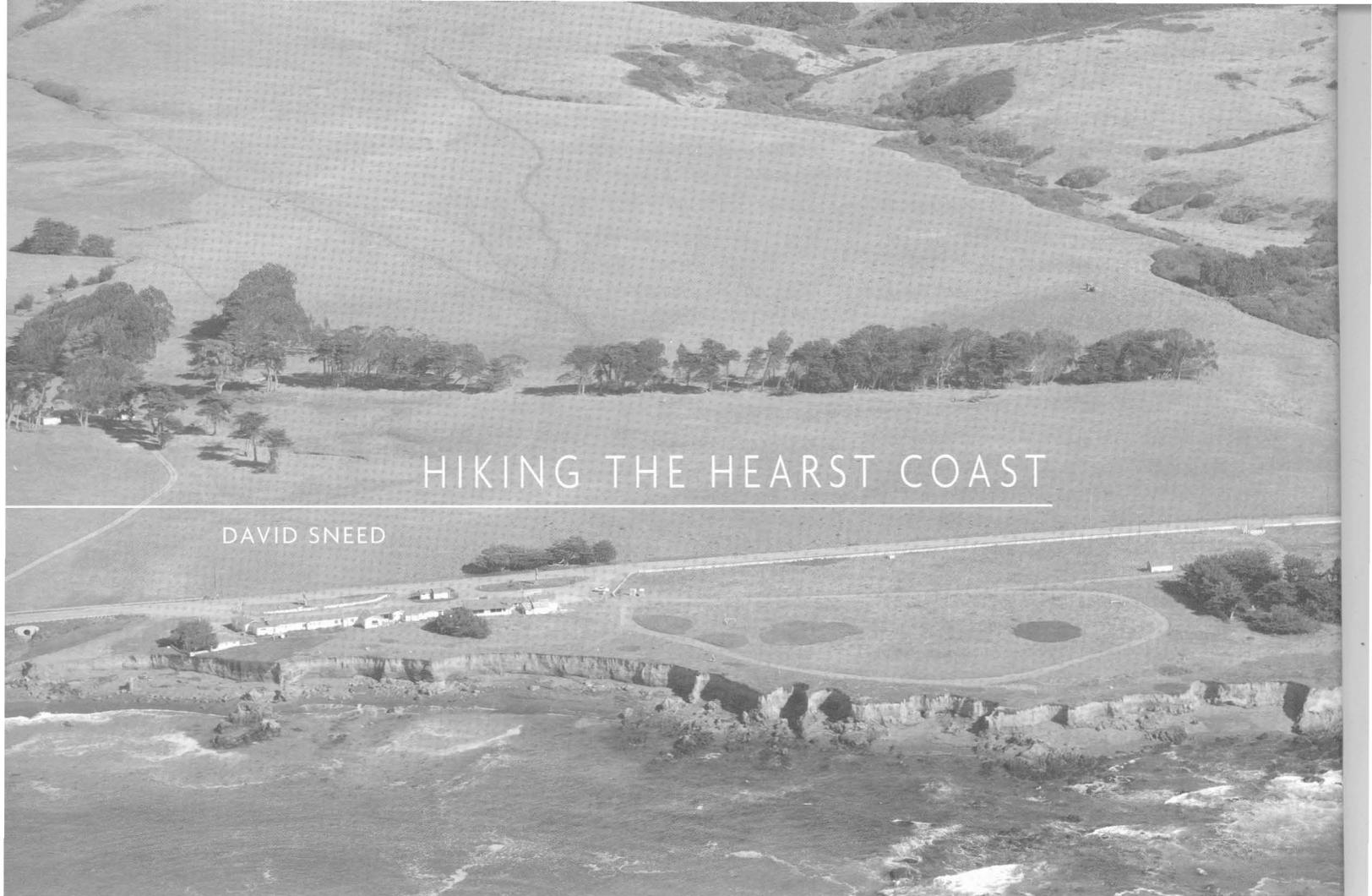
While Massara and some others still hope to see trails across the inland side of the Hearst property some day, Steve Hearst is firm: "We've made ourselves clear that public access east of Highway 1 would negatively affect our agricultural operations. That's a conversation we're not going to have again."

To Horn, a man who appreciates the nuances in both life and public policy, "the agreement is most noteworthy for permanently preserving the view from Highway 1, a view that will remain unencumbered by development." ■

Glen Martin reported on natural resource issues for the San Francisco Chronicle from 1990 to 2007, and is now writing freelance. His work has appeared in Audubon, Sierra, Discover, Men's Journal, Outside, and other magazines. In 1997, National Geographic and Roundstone Press published his guide to national wildlife refuges. He lives in Santa Rosa.



JOE JOHNSTON/SAN LUIS OBISPO TRIBUNE



HIKING THE HEARST COAST

DAVID SNEED

The site of the now-closed Piedras Blancas Motel is a candidate for new low-cost overnight accommodations.

IT'S ALL OPEN TO THE PUBLIC NOW, all 13 miles—949 acres—of the gorgeous natural coastline that was added to the state park system in 2005 as part of the historic \$95-million Hearst Ranch conservation deal. The basic amenities most parks provide—restrooms, designated parking, and developed trails—are almost entirely missing, and you won't find many signs and signals to point your way. In some places you have to climb fences and even slip through holes in barbed wire if you want to reach the shore. You're on your own and have to exercise due caution. But what a treat it is to have this wild coast to explore.

Supervising State Park Ranger Leander Tamoria and environmental scientist Brian Barandon helped David Sneed of the San Luis Obispo Tribune find his way along this spectacular shoreline so he could tell the public about it. Here, in four parts, are some hiking options in the newly expanded San Simeon State Park, based on Sneed's articles, published in 2006 and abridged and updated here with the Tribune's permission.

Note that these articles are not a guide to the park. They are a set of hints, clues, and observations that may help you decide where to hike, where to take Highway 1 to the next place to pull off, where to linger, fish, or watch wildlife.

Blufftop Trails and Tidepools **Junge Ranch to Hearst Memorial State Beach** **(3.5 miles)**

The southern boundary of the newly expanded San Simeon State Park is about five miles north of Cambria, at the end of Lone Palm Drive just north of San Simeon Creek Road. This part of the state park is known as the Junge Ranch, after a family ranch that was eventually taken over by Hearst. You pass through a newly installed pedestrian entrance and follow a primitive trail that skirts a private residence and leads to the rocky shore. As you take in the views, the tang of salt air and seaweed fills your nostrils.

The trail turns north and meanders atop coastal bluffs, with pocket beaches below, for

about three-quarters of a mile to the community of San Simeon Acres. The highway is only about a quarter of a mile away, but you're separated from it by low hills covered with grass and wild radish, and soon you feel surrounded by nature. "The big appeal is the sense of isolation, yet you are right next to the highway," said Tamoria.

This bluff trail is an excellent place from which to observe wildlife. Seabirds—Brandt's cormorants, mostly—roost on the many off-shore rocks, where harbor seals also rest, eyeing you warily as you approach. Toward the northern end of the Junge Ranch, you'll have to hop over a seasonal creek. Its small pools are habitat for the California red-legged frog, a federally listed threatened species, Barandon said.

This part of the park is visited mostly by fishermen and locals who already know of its existence. Veteran surfers have named the break here Cardiacs because the waves break dangerously close to the rocks.

San Simeon Acres and a parcel of land at Pico Cove are privately owned. Just past the cove, you have to use one of three Caltrans vista points to get back onto parkland, which here consists of a narrow strip of beach that runs two and a half miles north to Hearst Memorial State Beach and Old San Simeon Village.

The three vista points along this stretch invite motorists to pull over and enjoy the sight of waves crashing on rocks. Many tourists pose to have their pictures taken with the southern approaches to Big Sur looming in the background. If you're sure-footed, you may be able to scramble down to the beach and enjoy some tidepooling. Surf-drenched rocks intermingle with sandy beaches here, giving the shoreline explorer the best of both worlds.

By keeping to the sandy areas, you can examine the profusion of mollusks, crustaceans, and algae clinging to the rocks without damaging them by walking on them. The best areas are those that are protected by a row of seaward rocks and reefs, screening the tide pools from the surf. These pools are often a soup of colorful bits of seaweed. Kelp looks drab when lying exposed on the beach but takes on its true colors when submerged. Iridescent seaweed lives up to its name, giving off flashes of turquoise and blue as it sways in the water.

As you explore, you'll see purple and striped shore crabs scuttling for shelter in rock crevices. Also keep an eye out for a truly bizarre tidepool denizen, the gumboot chiton (pro-

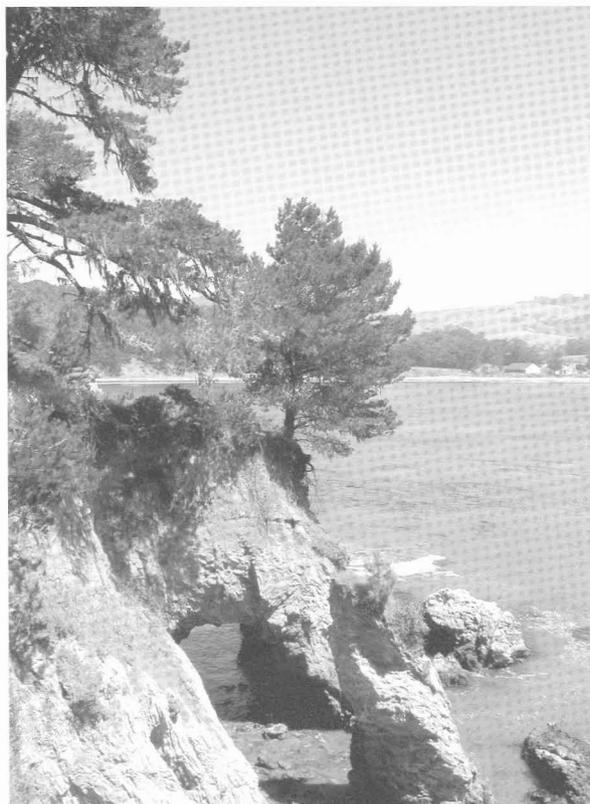
nounced kite-on), a type of mollusk. Unlike most chitons, which are small—the size of your thumb—gumboots can be a foot long. They tend to nestle in the sand next to rocks, looking like chunks of weathered bricks. They do not cling as tightly to rocks as other chitons do, and are easily dislodged.

This stretch of coastline is also popular with fishermen. Most seek surfperch, but occasionally you may run into polepokers, who fish with broomsticks or bamboo poles, to which they attach a short length of fishing line or wire and a hook baited with squid. The hook is thrust into wave-washed channels between the rocks in hopes that a small rockfish, monkeyface eel, or other shallow-water fish will take the bait.

Tamoria knows that most fishermen want to bring home dinner, but to him the most important reason to visit the coastline here is to enjoy nature.

Top: San Simeon Point Cove

Bottom: Julia Morgan-style home in Old San Simeon Village



South of Piedras Blancas: Where Elephant Seals and Humans Meet

*Arroyo Laguna to Point Piedras Blancas
(4 miles)*

This four-mile stretch of coastline is a spectacular addition to San Simeon State Park and offers some of the best wildlife-viewing opportunities in the state. Some 15,000 northern elephant seals gather during mating and breeding season at the Piedras Blancas rookery, seven miles north of San Simeon. Last year, 4,000 pups were born. The best way to see them is to pull over at the main seal-viewing area, where Friends of the Elephant Seal station knowledgeable, blue-jacketed docents (see p. 34).

From a little-used paved parking lot just north of the Piedras Blancas elephant seal viewing area, a network of primitive trails meanders across coastal bluffs with a historic lighthouse as a backdrop. The trails lead past a rocky surf-washed coastline interspersed with beaches that are often packed with elephant seals. All but one of the beaches along this four-mile stretch are off-limits to hikers to protect both seals and people. In most places, including the parking lot, visitors must climb over gates to get access to this part of the park. An exception is the new pedestrian entrance a quarter-mile north of the lighthouse on Point Piedras Blancas.

About a half-mile north of the paved lot's gate, an elephant seal beach lies close to Highway

1. Avoid the temptation to wander among these giant marine mammals. They may look placid but they are dangerous. North of this beach, the park broadens as it approaches Point Piedras Blancas. Another enticing beach lies along the southern flank of the point, but rangers say this, too, is closed to humans.

The 131-year-old light station at the tip of the point is primarily used for scientific research and is not part of the park. It is owned by the federal Bureau of Land Management. A cattle guard in the access road to the light station marks the beginning of the BLM property; park visitors should stay out. Call Hearst Castle to find out about monthly public tours: (805) 927-6811.

Another popular access spot is Arroyo Laguna, about two miles south of the main elephant seal viewing area. It is the one beach along this stretch of park that remains open to people. Strong onshore breezes and easy access have made Arroyo Laguna a magnet for wind surfers, whose colorful, billowing sails are readily visible from the highway. The beach is also popular with fishermen, tidepool enthusiasts, and bird watchers.

Visitors park in a small dirt lot and climb over a metal gate. A well-worn trail leads to a beautiful beach—perfect for strolling barefoot in the surf—which arcs three-quarters of a mile south, with a few rock outcroppings scattered along the way. This beach normally teems with shorebirds—willetts, sanderlings, marbled godwits, and long-billed curlews, to name a few. Behind the beach are low, grassy bluffs intersected by several driftwood-clogged arroyos.

North of Arroyo Laguna, the next public access spot is a Caltrans vista point marked by a cluster of cypress trees. Blufftop hiking north and south from this point is poor. This part of the park consists mostly of a narrow strip of land between the ocean and the highway, degraded by road-building and overrun with non-native plants. Visitors should be prepared to scramble over drainage culverts and through eroded creek beds.

Another mile up the coast from the vista point is the main elephant seal viewing area with its large dirt parking lot. Plans call for a boardwalk to connect this parking lot to the paved one a short distance to the north.

On most days the main elephant seal viewing area is a hive of human and seal activity. Docents answer tourists' familiar questions: "Why are the seals here?" "Why do they flip sand on themselves?" "Why are some of them fighting?" Last

William Randolph Hearst State Beach



year, the docents reported, they talked to an estimated 85,000 visitors.

November through February is the best time to watch the seals because they are mating and giving birth. During July and August, the beaches are less populated with seals, but the viewing is still fun because this is the time of year the huge bull elephant seals—some weighing two tons—come to the beach for their annual molt.

Squishy Ice Plant, Eroding Bluffs, a Beach

Point Piedras Blancas to Arroyo de la Cruz (3 miles)

A visit to a three-mile stretch of San Simeon State Park north of Point Piedras Blancas yields several unusual experiences. You traverse a solid blanket of ice plant, a creeping invasive species that forms a squishy mat of emerald green. You go past a funky motel and a section of Highway 1 that is in danger of falling into the ocean, and you pass a scenic stretch that was used for decades as a homeless camp.

When State Parks acquired 13 miles of coastline as part of the historic \$95 million Hearst Ranch conservation deal in 2005, it also inherited a host of problems that had plagued previous owners and other public agencies, including invasive plants, rapid coastal erosion, and unauthorized camping.

There are two main public access points to the park between Point Piedras Blancas and Arroyo de la Cruz, one of the Hearst Ranch's largest creeks: at the defunct Piedras Blancas Motel, and at the creek.

You can park at the motel parking lot, where there are portable restrooms; there are none on any of the other newly acquired parklands. A hiking trail leads to a nearby beach.

After a short walk on the beach you can climb up to the bluffs and head south to Point Piedras Blancas, about a mile away. There is no trail, however. Hikers must step over several fences and walk over an almost unbroken blanket of ice plant. Ice plant was introduced during a less environmentally enlightened time to stabilize eroding coastal bluffs, and has taken over an estimated 80 acres of the 959-acre parklands acquisition. "It's the most widespread plant out here," said park environmental scientist Brian Barandon. Park managers are planning an ice plant eradication campaign to allow native plants to re-sprout.



Top: The boardwalk at the Piedras Blancas elephant seal rookery

Above: This stretch of Highway 1 is to be rerouted inland because of erosion. The new route may run through at least one of the homes now being built (at left). The old Piedras Blancas Motel is at lower right.

Access to the many pocket beaches below the steep bluffs is spotty. The bluffs are generally too high to climb down safely. "That stretch between the lighthouse and Arroyo de la Cruz is the fastest eroding area—a little over three feet a year based on photos over the past 30 years," said Paul Martinez, Caltrans project manager for the area.

Just north of the motel the coast has eroded so fast that a section of Highway 1 is threatened. This problem is so severe that Caltrans will re-route the highway about 350 feet farther inland, Martinez said. The agency has begun the extensive environmental analysis that such projects require. That should be complete by 2010.

"We wouldn't get to construction until 2015 or so," Martinez said. "It's a long-term project just because of the sensitivity of the area, which includes wetlands, cultural areas, and endangered species. That area is really rich in everything."



Leander Tamoria, supervising state park ranger (left) and Brian Barandon, environmental scientist, open a locked cattle gate to get to the northern part of the Hearst Coast.

When the realignment is complete, all the land west of the highway will become part of the park, causing it to grow by an estimated 100 acres.

In the meantime, park visitors must contend with a dangerous stretch of road. Caltrans has fortified the coast with riprap and has installed concrete barriers along the highway, but that is not enough to keep waves from slopping onto the road during heavy surf.

“Where else can you go surfing in your car?” Barandon quipped.

Farther north of the motel, the park consists of a narrow strip of land sandwiched between the highway and the ocean. This strip is about a mile long and can be reached from several pullouts along the highway. But hiking with cars whizzing by several feet away is not that enjoyable. As the highway approaches Arroyo de la Cruz, it begins to swing inland and the park widens. Look for the remnants of a driveway and metal gate before the highway slopes down to the bridge over Arroyo de la Cruz. A pedestrian entrance was recently installed next to the gate. This is the second access point along this stretch of coastline.

Here the park opens up into a highly scenic triangle bordered by Highway 1, the ocean, and Arroyo de la Cruz creek to the north. An old dirt road leads hikers north across the bluffs, which mostly drop directly to the ocean, and overgrown trails meander near the bluff edge. After about a quarter of a mile, the old road leads hikers to a small sand spit between the ocean and Arroyo de la Cruz lagoon. In winter this beach is popular with catch-and-release anglers pursuing steelhead trout.

“On a calm, sunny day, this is a particularly idyllic spot,” Barandon said.

The area’s easy access and scenic nature made Arroyo de la Cruz an attractive spot for vagrants and the homeless who set up camp there. Rangers have been evicting them, and removing the trash left behind, since the property became part of the state park system. To their knowledge, there are none left.

“Our main concern is safety,” Tamoria said. “We want this to be a nice area for families.”

The Northernmost Stretch: Ocean Vistas, Grassy Bluffs, and Thriving Tidepools

Arroyo de la Cruz to Breaker Point (2 miles)

Park managers familiar with the 13 miles of coastal land recently added to San Simeon State Park consider the northernmost two miles to be the most ecologically rich and least disturbed by human activities. Here the visitor will find magnificent ocean vistas with Big Sur as a backdrop, rolling grasslands, tall coastal bluffs, acres of tidepools, and the park’s northernmost sandy beach.

“This really feels like the gateway to Big Sur,” said Barandon.

This part of the park stretches north from Arroyo de la Cruz; a small ranch house on the inland side of Highway 1 marks the northern boundary. This stretch has had so little use by the public that many of its features are unnamed. There are no established entry points, and getting into this part of the park can be difficult. Park managers say they need to complete their resource inventory and take public input before deciding where access points and trailheads will be located. In the meantime, they recommend that visitors find a place to park safely off the highway and walk along the barbed-wire fence to find a place to climb over or under. In several places, strands of the barbed wire have been cut; look for well-trodden paths in the grass that lead to them. During dry season, when the creek does not flow into the ocean, another option is to walk north from Arroyo de la Cruz, where a pedestrian entrance has recently been installed.

Just north of Arroyo de la Cruz is Point Sierra Nevada, a rocky cape named after a steamship that ran aground near there in heavy fog on Oct. 17, 1869. All the passengers were saved, but the ship was a complete loss. For detailed period newspaper accounts of the shipwreck, go to www.pt5dome.com/snwreck.htm.

Running along the upper flank of Point Sierra Nevada is the northernmost beach in

the park. With the exception of a driftwood shelter or crude bench here and there, it is so free of human imprints that it's easy to imagine you are the first person to walk these sands.

Undulating sand dunes behind this beach are remarkably free of ice plant and other invasive plants, Barandon said. He plans to use them as a model for dune restoration projects in other parts of the park.

North of the beach, all but the most determined waders and rock hoppers will want to walk up onto the bluffs to continue the hike. There are no trails, only a few overgrown cow paths.

Park managers say that for safety reasons, the Coastal Trail will traverse this part of the park well back of the bluffs, with a few spur trails to scenic overlooks. The bluffs here are the tallest and steepest in the park.

The landscape north of the beach is mostly grassland, and the walking is generally smooth going. The only obstacles are occasional clumps of coastal scrub and chest-high fields of wild mustard. Some of the park's rarest plants can be seen in these grasslands, including the Hearst manzanita and Hearst ceanothus, evergreen shrubs that grow on the Hearst Ranch and nowhere else.

An extremely lucky hiker might even glimpse Roosevelt elk, one of several exotic animals introduced to the ranch by William Randolph Hearst. Elk hoofprints have been found in this part of the park, Barandon said.

About a mile north of Arroyo de la Cruz, hikers will encounter Arroyo de los Chinos Creek. Park archaeologists have found geraniums blooming near its mouth, indicating that a homestead once stood there; perhaps that of a Chinese kelp harvester or ranch hand.

Arroyo de los Chinos flows year-round and is overgrown with willows and other plants. Hikers should look for remnants of an old roadbed that cuts into the creek banks, and follow an old cow trail across the creek.

A large promontory is visible to the north of Arroyo de los Chinos. The view from its crest toward Big Sur is among the most spectacular in California.

In the foreground, gently sloping hills covered with maritime grasses and chaparral lead to a wide bay studded with surf-battered rocks and sea stacks. In the background, the Santa Lucia Range rises abruptly from the ocean. After pausing to soak in this majestic scene, hikers can continue north and find another obscure remnant of the ranch's history. Perched on the edge of the

bluffs are rusty bundles of heavy-duty cables and cross plates. Park managers say they do not know why the cables are there or what they might have been used for.

At the foot of the bluffs beneath the cables, a broad rocky bench jutting into the ocean is festooned with bright yellow squares bolted into the rock. The squares are part of a research station, one of many scattered along the West Coast, where university biologists study how tidepools change over time and how they are affected by human activity.

Researchers will be watching these tidepools closely to see how they change as a result of increased human visitation, said Pete Raimondi, a biology professor at UC Santa Cruz who heads the study along the Central Coast.

"Those are some of the most pristine areas we have," he said. "We are concerned about increased usage now that the ranch has been opened to the public."

Past the tidepool monitoring area, the park narrows to several hundred feet, then broadens again. Hikers will come to several small seasonal creeks that are best crossed near the highway, where they are shallowest. This area offers more tall coastal bluffs and multiple offshore pinnacles. Soon hikers will reach a larger creek at the northern boundary of the park, marked by a fence. The area to the north, Ragged Point, remains part of the Hearst Ranch. A mile and half to the north, at the mouth of San Carpoforo Creek, is a sliver of parkland, but there is little to distinguish it from adjacent Los Padres National Forest. ■

Adapted by permission of the San Luis Obispo Tribune.

A driftwood bench on the northernmost beach of the Hearst coast



AN INTERVIEW WITH KEN AND GABRIELLE ADELMAN

Saving the Coast with Pictures

MARK MASSARA

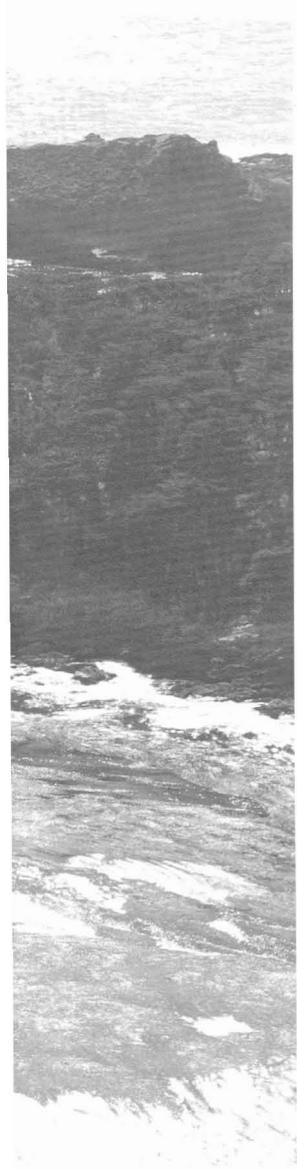
PHOTOGRAPHS BY THE CALIFORNIA COASTAL RECORDS PROJECT



Top: Gabrielle and Ken Adelman with their Robinson R44 Clipper II helicopter

Above: Whaler's Cove, on the north shore of Point Lobos, Monterey County

As of November, 2007, more than six million visits to www.californiacoastline.org had been recorded. This photographic project may be the single most significant volunteer contribution to coastal protection in decades.



IN JULY 2007, AT THE SUGGESTION of the editor of this magazine, I sat down with my friends Ken and Gabrielle Adelman to reflect upon the success of the California Coastal Records Project's aerial photography website at www.californiacoastline.org. We met at the Adelmans' comfortable, sun-filled solar-powered home in Pajaro Valley, in the foothills of the Santa Cruz Mountains, and talked about their love of flying and photography and how they came together in an ongoing and uniquely valuable project.

Q: What prompted you to take on the California Coastal Records Project?

Gabrielle Adelman: We acquired our first helicopter in 1996. Ken had long been interested in photography and had significant experience with color negative slide film. We quickly realized that oblique photos from the helicopter had significant advantages over the standard overhead pictures commonly taken from an airplane, and also complimentary uses. We then contacted many environmental groups offering to take photographs, including the Sierra Club.

Soon you called us, asking for pictures of the Hearst Ranch in San Simeon, 18 miles of coastline and 80,000 acres proposed for golf and resort development in 1998. Due to Hearst Ranch being private,

most people had never really seen how beautiful this part of the California coast was. We flew the helicopter over the entire ranch and Gary Lynch shot color negative slide film. Sierra Club then used the pictures at public meetings in Patagonia, Inc. stores and at locations throughout California, showing the ranch to thousands of people for the first time. The Hearst project was subsequently denied by the California Coastal Commission.

It was you, Mark, who first suggested we shoot the entire coast.

At the time, Ken and I were still working full-time and digital photography had not yet evolved sufficiently to make such a project possible. Ken had estimated that it would require over 12,000 slides to photograph the entire coast. Thus the organizing and scanning to get them on the web was a significant hurdle.

Q: What happened next?

Ken Adelman: As we flew the coast we became convinced of the value of the project. Flying raised many questions for us—we saw bulldozers on the beach, riprap rock seawalls being constructed in the surf, and seemingly inappropriate, incoherent oceanfront construction projects. We thought that if people could only see this stuff from the sky, they would be motivated to move back and appreciate the need to protect these vanishing resources.

In 2001 I started using digital photography equipment, just at the time it was becoming feasible to do so. I acquired a Nikon D1x and used that camera for the first coastal flyover in 2002 and much of the second.

In October 2005 I upgraded to a Nikon D2x, and the improvements were dramatic. You can see the difference at the “About the Project” page of the website, along with pictures of the helicopter and “crew.” For a detailed description of the effort over the five years of the project’s life, check out the “Project Diary” page.

Our vision was to take a baseline set of pictures for use by the Sierra Club and Coastal Commission enforcement staff. In the beginning, we had no “website” vision. We really didn’t appreciate the level of interest amongst the general public for pictures like these. We initially shot pictures of seawalls in Santa Cruz, oceanfront areas proposed for development, the

unpermitted seawall at the Ritz Carlton Hotel in Half Moon Bay, and the Del Monte Monterey pine forests at the Pebble Beach Club.

We just started doing more and more. Data organization was a challenge. I began to conceive of a private website for the Sierra Club just to organize and store the pictures.

We completed the first leg of shooting the entire coastline in 2002, and that effort is described on the website in the “Project Diary” page. You’ll see we had all kinds of problems and hurdles, from fog in Big Sur to onboard computer problems. I had designed the project to shoot pictures directly into an Apple computer, which would be powered by the helicopter. The inverter in the helicopter failed and so then did the computer.

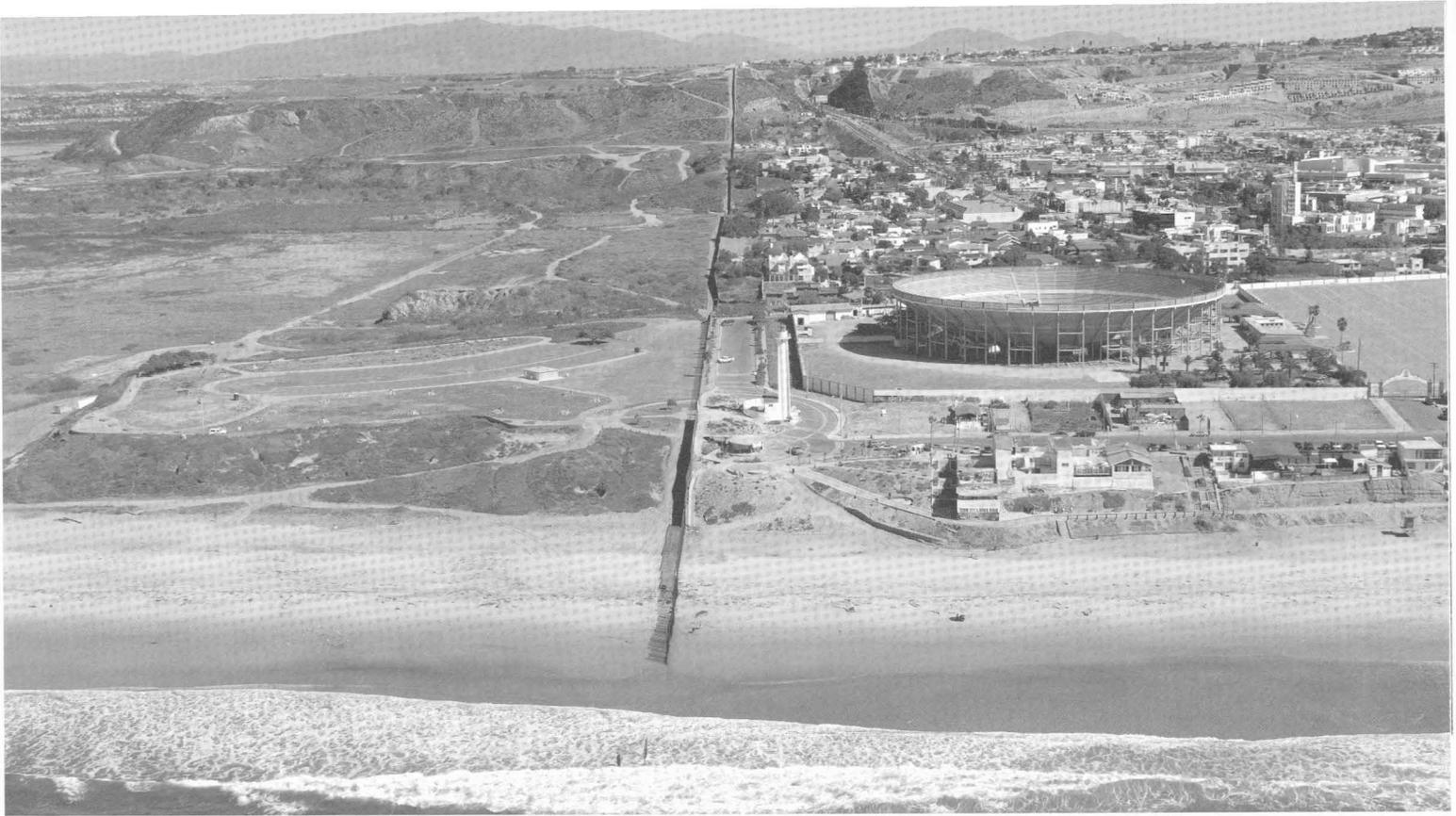
Q: What is the process? How do you photograph the coast?

KA: Gabrielle flies while I shoot pictures. We have become very experienced at looking for the very best weather conditions. We do it in sections. It initially took four or five trips to shoot the North Coast. There were gaps due to fog and darkness. That first trip we shot all the way up to Crescent City, and stumbled into a great fish restaurant down by the harbor.

We had to make some arbitrary decisions about what you consider the “coast” for purposes of the project. We have not shot the entire

Point Arena Lighthouse, Mendocino County





San Francisco Bay, and we have not gone far up rivers, watersheds, or deep into some of the larger salt flats, etc.

We've discovered that there are two places you must shoot in the morning because of the sun—the east side of Año Nuevo State Park and the west side of Tomales Bay.

To date I would estimate we've flown over 4,000 miles of coast, with over 120 hours of flying time. Our first trip took over 50 hours, 25 hours taking pictures and 25 hours getting back home.

After shooting the entire coast in 2002, we did it again in 2005, and have shot parts a third time in 2006.

In general, we aim for pictures consisting of 90 percent coast and 10 percent water. People are now asking for pictures of kelp cover, inland watershed areas, and mountaintop photos.

We've also taken on a number of special location-specific projects, including conversion of redwood forests to vineyards in the Gualala River watershed in Sonoma and photographing the efforts of property owners at Broad Beach in Malibu to prevent public beach access.

All requests for special projects and any questions regarding the website are handled through Susan Jordan at the California Coastal Protection Network (CPN) organization. The intent has always been to use the website to further coastal protection efforts of nonprofit organizations in California.

Q: What is the most amazing thing you've seen?

GA: The Mexican border is the most incredible photo, with that awful rusting fence constructed by the INS running right through the middle of Friendship Plaza and out into the ocean.

Q: What has been the biggest challenge?

KA: We have repeatedly tried to work with Vandenberg Air Force Base, north of Lompoc, without success. They are the only military property on the entire coast that has refused to allow us to photograph their coastal property. Vandenberg remains the only section of the coast that we have not photographed. Ironically, photographs of that part of the coastline are already available through older pictures provided to us by the State of California, that are posted on the website as part of the 1979 coastal survey.

Q: What is your greatest satisfaction from the project?

GA: Providing public access to all these beautiful yet inaccessible public coastal places. Parts of Malibu, Point Conception, much of the Lost Coast—these are places that most people had never seen and won't ever have the chance to visit. Now they visit anytime.

The U.S.–Mexico border, with the fence slicing across Friendship Plaza, 2006

They Do More Than Fly

THEY MET AS STUDENTS at the California Institute of Technology, where Gabrielle majored in astronomy and Ken in engineering and applied science. A week after Gabrielle graduated, in 1987, they married. Ken took a job as a software programmer at the Lawrence Berkeley National Laboratory, then soon after moved on to SRI International, where he helped to develop MultiNet, an internet software system that enabled different computers to communicate. He and a colleague licensed the software and started TGV Inc.,

which Cisco Systems bought in 1996. The following year Ken cofounded Network Alchemy, which sold to Nokia three years later for \$335 million.

No longer needing to work for a living, the Adelmans were free to dedicate their energies and sense of adventure to what they enjoy most. Look at their family website, www.adelman.com. It's a glimpse of things that interest them, and there's much more to come. A note advises: "This website is always under construction."



The Adelmans' photovoltaic system, with its 2,880-square-foot array, powers their home, including air conditioning, pool, and hot tub, as well as computers, server, and three electric



cars. "We 'bank' our excess energy into the grid ... and receive a credit for it. At night, we draw this energy back and use it to charge our cars." See www.solarwarrior.com/about.html

Q: What is your greatest regret?

KA: Not having done the project earlier. Not yet having been able to photograph Vandenberg Air Force Base, one of the most beautiful stretches of the California Coast.

Q: Do you do the whole project yourselves or do you have a team of assistants?

GA: Like any impossible task, you look back and think it was easy. But Ken had to actually write the software for the website, and do it in a way that would sort photos geographically along the coast, and make them possible for users to find.

KA: I built the website at home, on PC hardware, running FreeBSD. We use four public Internet servers that are located offsite around the country. We usually have around 100,000 visitors per month. We're linked extensively now to other private and public websites across the world.

We've had over 50,000 hits a month from users of the California State Parks website. [That website has a photo link from each coastal park page to the corresponding Coastal Records Project photos.] People use it from Craigslist and numerous other sites.

Q: What was the impact of the lawsuit that Barbra Streisand filed against you? [She claimed her privacy had been invaded because her blufftop home in Malibu was in a photograph.]

KA: What was she thinking? We were just blown away. When her lawyers first demanded we take the website off the Internet, we specifically told them this was a public beach survey and educational project protected by the First Amendment of the Constitution. We told them no one ever used our website to view her home in Malibu. We reminded them of all the other websites showing photos of the house. We even provided them a copy of the press release we would send out if they filed a lawsuit, saying "Streisand Sues Environmental Education Project."

We were dumbfounded when they went ahead and filed the lawsuit. It led to hundreds of news stories and pictures of her house being shown worldwide. She really shot herself in the foot on that one.

We hired Richard Kendall, a great Constitutional lawyer out of Los Angeles. He eventually won the case and had Streisand declared a "vexacious" and "malicious" litigant for initiating a SLAPP (Strategic Lawsuit Against Public Participation) suit against us.

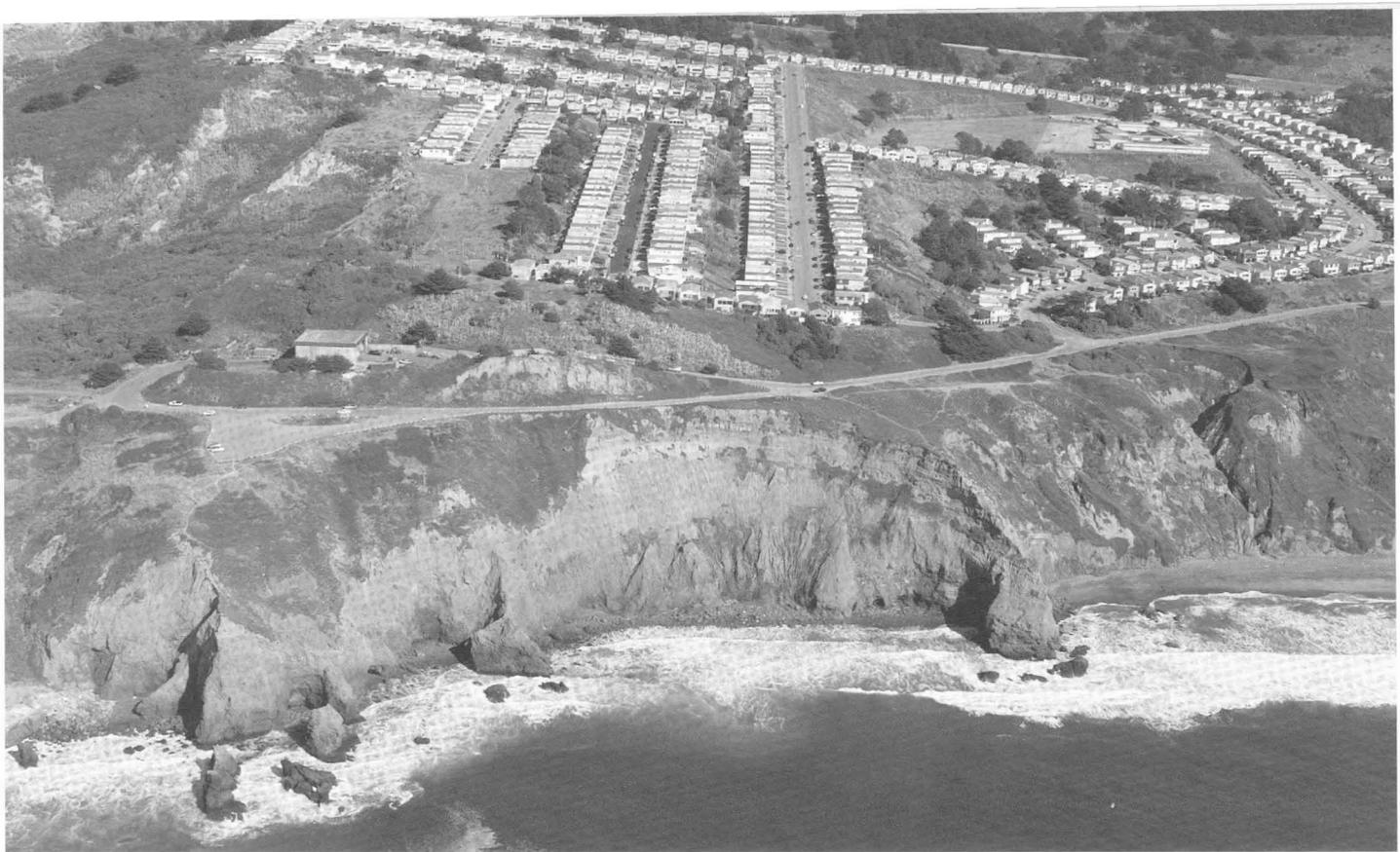
The court found that Streisand had no right to privacy for what in effect was the arrangement of her deck chairs, and required her to pay us hundreds of thousands of dollars in costs and attorney fees.

It was important that we prevailed, not just because of Streisand, but for all the private property owners along the coast opposed to the project and for other people wanting to do public interest photographic work.

The legal papers are posted on our website, and any activist ever threatened with a SLAPP suit is welcome to visit and read those documents.

Q: What is the story behind the older photos of the coast on the website, from 1972, 1979, 1987, and 1989?

KA: That is an interesting story. The California Department of Boating and Waterways had been doing periodic photo surveys of the coast



using overhead slide film from airplanes. Gary Griggs, director of the Institute of Marine Sciences at U.C. Santa Cruz, had been caretaking the photos, but many were deteriorating, as slide film does over the years. Gary had been using the pictures for his research projects and with his students but contacted us to see if they could be scanned and put on the website for the public to view.

The whole story is on the website, but suffice it to say the photos had gotten somewhat mixed up over the years, many were degraded, and they were not indexed or sorted by longitude and latitude. We literally had to go picture by picture, mile by mile. I bought a slide scanner and scanned them 25 at a time.

To be able to compare the older slides with the more recent pictures is amazing. We didn't even know they existed. They were sitting in cardboard boxes in Gary's office.

Q: What have you learned from the project?

GA: We've learned that the coast is eroding very quickly, and that despite the erosion and sea rise, people continue to want to build along the very edge of the coast. You can really see it from the air. Some places you think are protected, like Santa Cruz, are almost entirely fortified with seawalls.

Q: Do you plan to continue with the project?

KA: Forever. We can't stop now, it is our life's work. I didn't plan on this, it found us.

Q: What's next?

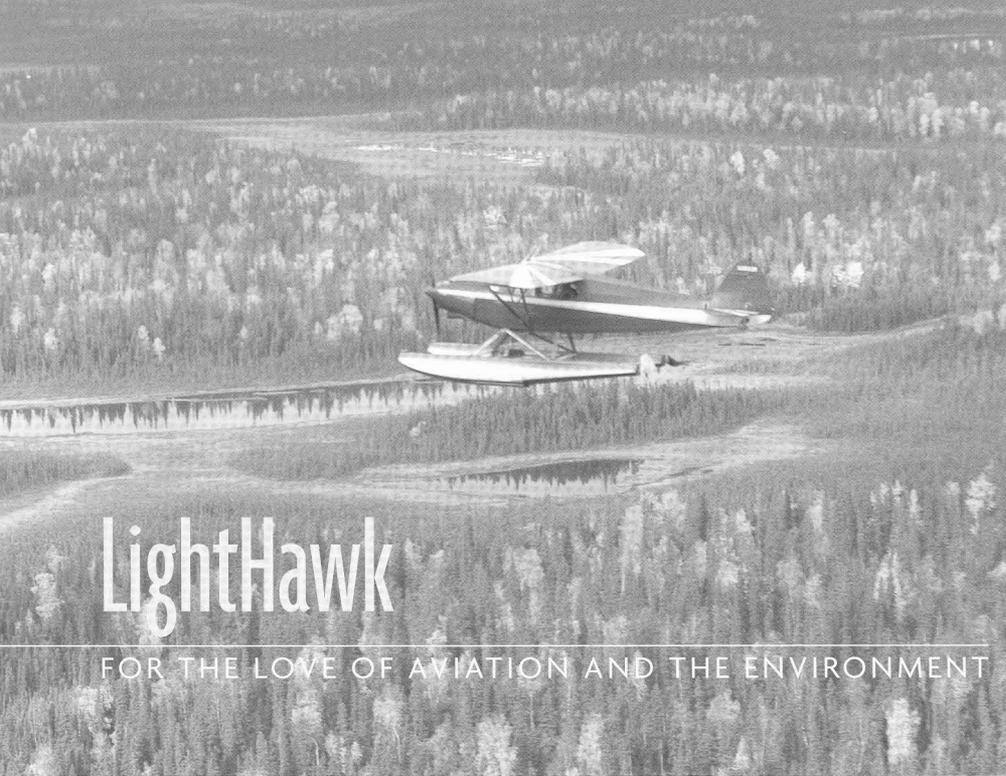
GA: I've written a short children's story about the project. We look forward to seeing all the ways in which the website can be used in the future, ways we haven't even thought of yet. It exists for everyone, and everyone is encouraged to participate.

KA: It has been an interesting journey because of all the great people we've met along the way. We have really enjoyed assisting small environmental organizations improve their ability to do their work and be successful. ■

The Adelmans have agreed to donate all revenues from the project to the California Coastal Protection Network (www.coastaladvocates.com).

Mark Massara is a public interest environmental attorney specializing in California coastal zone land use, development, beach access, and resource protection legal issues, and has been director of Sierra Club's coastal programs for 15 years.

Coastside dump station and residential development, Daly City, San Mateo County



LightHawk

FOR THE LOVE OF AVIATION AND THE ENVIRONMENT

A LightHawk flight over Kenai National Wildlife Refuge, Alaska

ON FRIDAY NOVEMBER 8, the day after the *Cosco Busan* freighter struck the Bay Bridge and dumped 58,000 gallons of toxic fuel oil into San Francisco Bay, Judd Klement, Pacific Coast program manager for LightHawk, put out a call for a volunteer pilot. The mission, requested by Save the Bay, was to fly with a photographer over the water to provide an aerial perspective on the disaster and document its course.

“We wanted these images to help direct immediate recovery efforts, point cleaning and skimming crews to places where the oil was, and also to help NOAA and state agencies with damage assessment,” explained David Lewis, executive director of Save the Bay.

A quick response came from David McConnell, one of ten or so LightHawk pilots in the Bay Area: he could be at the airport in Novato, Marin County, within a half-hour, ready with his four-seater high-wing Cessna.

Before long, McConnell and photographer Rob Badger, who had likewise volunteered, were looking down at spreading streaks of oil and watching some of the belated efforts to contain it with booms. On shore, people in white hazmat suits were shoveling sand drenched in black goo into huge white plastic bags. “On the south end of Angel Island it was on the beach, the rocks, in the water,” Badger reported. To McConnell, “to clean it up seemed an impossible task.”

Some of the photographs from the flight were promptly posted on Save the Bay’s website. They will be valuable when it comes to decisions

about cleanup and recovery efforts, and who should pay. “LightHawk is a huge resource,” Lewis said. “It offers a quick and flexible way to document visually, in real time, what is happening and what has happened.”

Ready to Respond

LightHawk is a nonprofit organization with headquarters in Lander, Wyoming, that has brought together a network of pilots who own or have access to small aircraft to volunteer for campaigns and projects that benefit the natural environment. Since 1979, these pilots—about 140 nationwide right now, 23 in California—have been flying environmental missions, mostly in this country and in Mesoamerica. “LightHawk does not lead campaigns. It provides aerial support to campaigns led by others,” said Mike Sutton, director of the Center for the Future of the Oceans at the Monterey Bay Aquarium and a LightHawk board member and volunteer pilot. The organization’s earlier name was Environmental Air Force, and that name still describes it, Sutton said.

Besides being ready to respond quickly during environmental emergencies, LightHawk has extended a wide variety of aerial assistance to environmental groups and sometimes to government agencies, enabling their representatives to see things that are difficult or impossible to detect from the ground; illegal logging in roadless wilderness, for instance, or dumping of drums filled with toxic waste in remote rural areas. It has assisted in many campaigns to protect precious natural resources.

“A potential partner will contact us and, if the request fits LightHawk’s purpose and would provide a clear benefit to the partner, I send a request to pilots in the area,” said Klement. “Once a pilot is located, I work out all the logistics between pilot and partner.” A person knowledgeable on the subject at issue is enlisted as guide. There’s a briefing at the airport before take-off, and a meeting and discussion after landing. In New Mexico, where the State opposed the federal government’s attempt to open 101,000 acres in the Valle Vidal to oil and gas drilling, the guide on at least one flight in 2004 was Governor Bill Richardson’s secretary of energy, minerals, and natural resources. Congressional leaders of both parties joined to pass a bill protecting the valley in perpetuity.

The planes are usually light four- to six-seat aircraft. The pilots are a diverse lot, including emergency room physicians, airline pilots, and a goodly number of conservative businessmen

with strong environmental concerns, said Sutton. They tend to be “fans of the landscape, united by their love of aviation and love of the environment.”

The principal goal of most flights is to give everyone aboard a clear view, from the same perspective, of what’s at stake. The effect of a flight has often been huge. Sutton calls it “the conversion experience.” After seeing the interconnectiveness of the landscape, people begin to think differently.

As is stated on the LightHawk website, www.lighthawk.org: “From the air you can see the way landslides from a logging road carry mud downslope to the once-shaded river, choking it with silt so that it warms and slows and cannot support the wild salmon that used to swim up it to spawn. The view from a small plane reveals misuse of protected land, like off-road vehicle damage in a designated wilderness area or illegal mining operations in a Mesoamerican forest. From above, in fact, there’s not much you can’t see . . . the view from above speaks for itself, providing breathtaking clarity of understanding.”

The Aerial Perspective

In California, LightHawk played a unique role in helping to win federal legislation that has protected more wilderness areas and—a matter of special pride for Sutton—in helping to establish the first network of Marine Protected Areas (MPAs) along the Central Coast. The MPA proposal was being hotly debated and more public support was needed. So in 2006, at the request of the Ocean Conservancy, the Monterey Bay Aquarium, and the Otter Project, LightHawk staged what Sutton called a “blitzkrieg.” Pilots from around the country gathered in Monterey for the organization’s annual fly-in, an event held at a location where they can be especially useful. A series of two-hour flights was arranged over the 200-mile coastal stretch between Point Conception and Half Moon Bay, within which the network of MPAs was proposed. Aboard were media representatives, government officials, and leaders of organizations engaged in the MPA discussions. The guide was Meg Caldwell, former chair of the Coastal Commission and director of the Environmental Law and Policy Program at Stanford University Law School.

“We looked at how land-use practices affect MPAs,” said Sutton, “land-based sources of ocean pollution, forest practices, suburban sprawl, encroachment of development on agricultural lands. And we saw the beauty of the

coast, the kelp forests, rocky reefs, gray whales breaching, all kinds of wildlife. The aerial perspective makes things real for people.” Sutton took up a reporter and photographer from the Associated Press. The resulting story ran in over a hundred newspapers.

From the air it is obvious that ecosystems extend across national boundaries—a fact often ignored on the ground. “Currently, about half the flying missions are in Mesoamerica—Belize, Nicaragua, Honduras, Guatemala, Mexico,” Sutton said. “We have looked at the enormous destruction of mangroves in favor of shrimp farms, at illegal logging on the border of Guatemala and Belize. We’ve supported the fight to protect monarch butterfly roosting sites in northern Sonora [Mexico] from illegal logging. You can see the monarchs from the air—so many millions they stain the green canopy orange. Without these flights, scientists would not have been able to locate areas where the butterflies concentrate and try to protect them.”

First-Hand Views

When the Mexican government announced protections for monarch habitat late this year, LightHawk did not step up for applause. Neither did it do so when the California Fish and Game Commission established the MPA network in April 2007 (see p. 39). “LightHawk never takes credit for winning a campaign,” said Sutton. “Most of the effort is ground troops slogging it out, day by day.” This reticence, however, doesn’t help when the organization needs financial support. Much of its funding comes from individual donors. The pilots usually pay fuel costs and other expenses, and donate both time and the use of their aircraft.

Sometimes Sutton is asked: Are these flights really necessary today, when remote sensing systems are bringing back fantastic images for all to see? “Looking at things through glass is not the same as being out with them,” is his response. “It’s the difference between going to an aquarium and scuba diving.”

For Sutton, LightHawk is a good fit with his goals as director of the Monterey Bay Aquarium’s newest program, the Center for the Future of the Oceans, which aims to inspire action for the ocean on the part of individuals, corporate leaders, and policy makers. LightHawk pilots volunteer because they love to fly, and what they see while in the air distresses them. They have found a unique way to do something personally for the blue planet. ■



LightHawk flies over Picacho Gold Mine, Imperial County

Mapping Past and Present Creeks of San Francisco



STORY AND PHOTOS
BY EILEEN ECKLUND

I'M STANDING AT THE CORNER of Blackstone Court and Franklin Street in San Francisco's Cow Hollow district. There's not much to see, just an alley that runs for a half-block or so between the back of a motel and a dentist's office, with some old houses partially hidden behind a tall metal gate at the end. Curiously, though, the alley is off-kilter from the surrounding streets, running at an angle of about 20 degrees from the street grid. Few passersby are likely to notice the misalignment, but it's a clue to a vanished landscape: Blackstone Court follows an old trail that in the 1850s and 1860s ran from town out to the Presidio, skirting the north end of Washerwoman's Lagoon, an important freshwater source for early San Francisco. In 1882 the lagoon was filled in, and as the city expanded a new street grid was laid overtop, erasing most evidence that the lake ever existed—except for Blackstone Court.

Lobos Creek flows along the southwest edge of the Presidio to meet the ocean at Baker Beach.

Here in the sea of concrete that is modern-day San Francisco, with the sound of cars and trucks on nearby Lombard Street roaring in my ears, it's pretty much impossible to imagine that earlier, far more bucolic landscape. Certainly it would never have occurred to me that an oddly angled alley could point the way to an old lake where shirts were scrubbed and cows came to drink. But such details leap out at Christopher Richard and Janet Sowers, who since the early 1990s have been piecing together the contours of the Bay Area's past and present watersheds and waterways for the San Francisco Bay creek-mapping project of the Oakland Museum of California (www.museumca.org/creeks). Blackstone Court is just one of the clues they found as they researched the San Francisco map, published in June.

Richard and Sowers's first map, published in 1993, was of the Oakland and Berkeley water-

sheds (see *Coast & Ocean*, Vol. 13, no. 1). Ten more have followed, covering most of the east, south, and west shores of the Bay. One for San Mateo is due out in December, and if funds permit, the series may be continued through the North Bay.

Sowers, a senior geologist with William Lettis & Associates, a consulting firm, and Richard, curator of aquatic biology for the Oakland Museum of California's natural sciences department, have guided the development of most of the maps, collaborating with others from the Museum, Lettis & Associates, the San Francisco Estuary Institute, and the Bay Institute.

Of all the maps in the series, Richard said, "San Francisco has been the biggest challenge, because urbanization began before accurate mapping" was undertaken. When the U.S. Coast Survey showed up to map the area in the early 1850s, many of the city's wetlands had already been drained or filled. There may be more historical references available for San Francisco than for other Bay Area locales, Sowers said, but "because there's a longer history, there's also a longer history of alterations."

Secrets beneath the Sand

The city's geology also made the job more challenging for Richard and Sowers. Before it was paved over and built up, more than half of San Francisco was covered by sand dunes. Bedrock poked through on the hilltops, the higher peaks sheltered a few areas from the blowing sand, and along the Bay shore there were marshes, estuaries, and tidal sloughs. Everything else was sand, sand, sand. "In other parts of the Bay Area, the topography gives you a very good idea of where the creeks ought to be," Sowers said. "But in much of San Francisco, the topography is not due to stream erosion, but to sand dunes." Sand still underlies much of the city.

Dunes don't typically support significant surface streams. Instead, water percolates down and moves underground, popping up here and there in low-lying areas as a pond or wetland. Mobile sand dunes block off creeks, creating more ponds. So San Francisco circa 1850 didn't have many major creeks, but it did have a surprising number of freshwater ponds, lakes, and wetlands among the dunes. (Some of these ponds still exist in Golden Gate Park, though they have been modified.)

Also complicating the mapping of waterways was the city's combined sewage and stormwater

system. Every other city in California (except for portions of old Sacramento) collects its sewage in one set of pipes and sends it to a treatment plant, while stormwater runs through separate drains, typically directly into lakes, creeks, or the ocean. (Many cities are now studying ways to upgrade these systems, due to stricter water-quality regulations mandating that runoff be treated.) Because most of San Francisco's sewers were built before sewage treatment existed, the city still collects both sewage and runoff in the same pipes, but today the effluent is pumped into massive tunnels, known as transport/storage structures, that were installed between the 1970s and 1990s and run along the city's entire shoreline like a moat.

The system essentially divides San Francisco into two "sewersheds"—drainage basins defined by high points from north to south. From these points, all sewage and runoff flows either east or west to the transport structures, which then carry it to treatment plants. "In dry conditions, everything east of Twin Peaks goes to the Southeast Treatment Plant [near Third Street and Evans Avenue], and everything on the west side of Twin Peaks goes to the Oceanside Treatment Plant [near the San Francisco Zoo]," Sowers said. (The exceptions are the Presidio, which drains to the bay, and Golden Gate Park, Lake Merced, and Stern Grove, which drain directly into the ground.) Another plant, the North Point Facility on Bay Street, provides additional treatment capacity during wet weather.

"Conceptually, the watershed model breaks down when you're pumping water between

Lobos Creek emerges from the water treatment plant at Baker Beach.





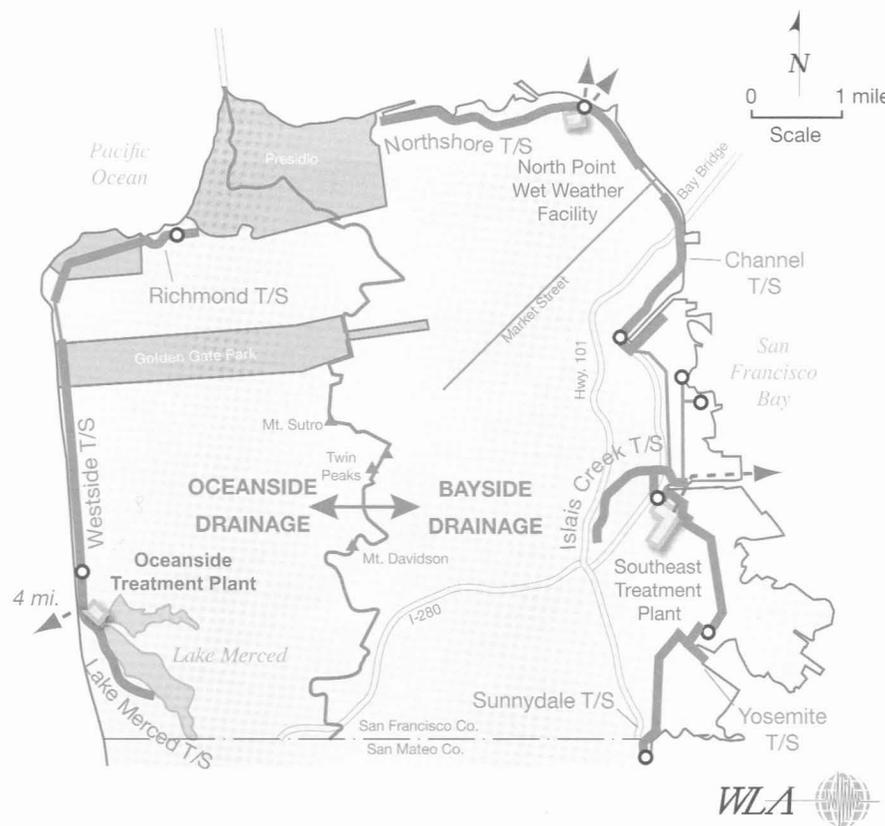
watersheds,” Richard said. “Defining exactly what a watershed means becomes a lot more difficult. The combination of sanitary sewers and stormwater drains made the [mapping] project more interesting and challenging.”

During major storms, the combined system can overflow, in which case the runoff will follow something resembling the historical creek watersheds, flowing to the Bay or the ocean. The “watersheds” indicated by different colors on the Oakland Museum map are areas that drain to a particular channel (such as Mission Creek Channel) or stretch of shoreline during these events. Unfortunately, when that happens, sewage that is only partially treated is released into the Bay or ocean, though this occurs less frequently now than it did before the transport/storage structures were built.

The reverse side of the map contains text, photos, and maps explaining the original dunescape and historical ecology of the city, prepared by Robin Grossinger of the Estuary Institute, and additional information about the combined stormwater/sewage system, created with the help of the California Public Utilities Commission (PUC).

Seeing the Lay of the Land

Sorting out the historical and built watercourses was often a daunting task. For example, many anecdotal sources referred to Hayes Creek, which is said to have flowed through Hayes Valley and what is now the Civic Center down to the marshes around Mission Bay. But when Richard and Sowers set out to chart its course, they could not find it on any historical map. The only evidence for a creek lay in the contour lines on topographic maps, whose V shape indicated a valley—eroded, presumably, by a creek—that sloped toward the Bay. The fact that much of Hayes Valley was originally covered by sand dunes led Richard and Sowers to conclude that the creek was probably ephemeral—flowing underground through the porous sand for most of the year, and on the surface only after heavy rainstorms. Early map-makers may have seen no creek in Hayes Valley.



Top: Lovers' Lane Bridge in Tennessee Hollow, the Presidio's largest watershed, where stretches of creek are being restored

Bottom: San Francisco's combined sewer system funnels almost all the city's sewage and runoff into two drainage basins or "sewersheds."

Islais Creek Caretakers

On a Saturday morning, a small crew of volunteers is on creek-cleaning duty at San Francisco's Glen Canyon Park, in the Glen Park neighborhood. Fog still clings to the canyon walls above when I join them and wade into the middle of the north fork of Islais Creek. My boots sink in muck as I pull sticks, leaves, and other debris out by the handful. Just upstream, a volunteer named Bob fishes out an old T-shirt and tosses it up on the bank. We're helping to clear the channel so the creek flows more freely, and downstream, others are pulling invasive Cape ivy and poison hemlock from its banks.

The north fork of Islais Creek originates on the southern slopes of Twin Peaks and flows aboveground in Glen Canyon Park for about a half-mile until it enters a culvert near the park's recreation center. This is the longest and most accessible stretch of free-running creek remaining in San Francisco, with a boardwalk and trails following both sides of the creek

partway up the canyon. The steep canyon walls, rock outcrops, and lush streamside vegetation make this a natural refuge, where people can enjoy blooming wildflowers and great horned owls as well as walk their dogs and let their children run.

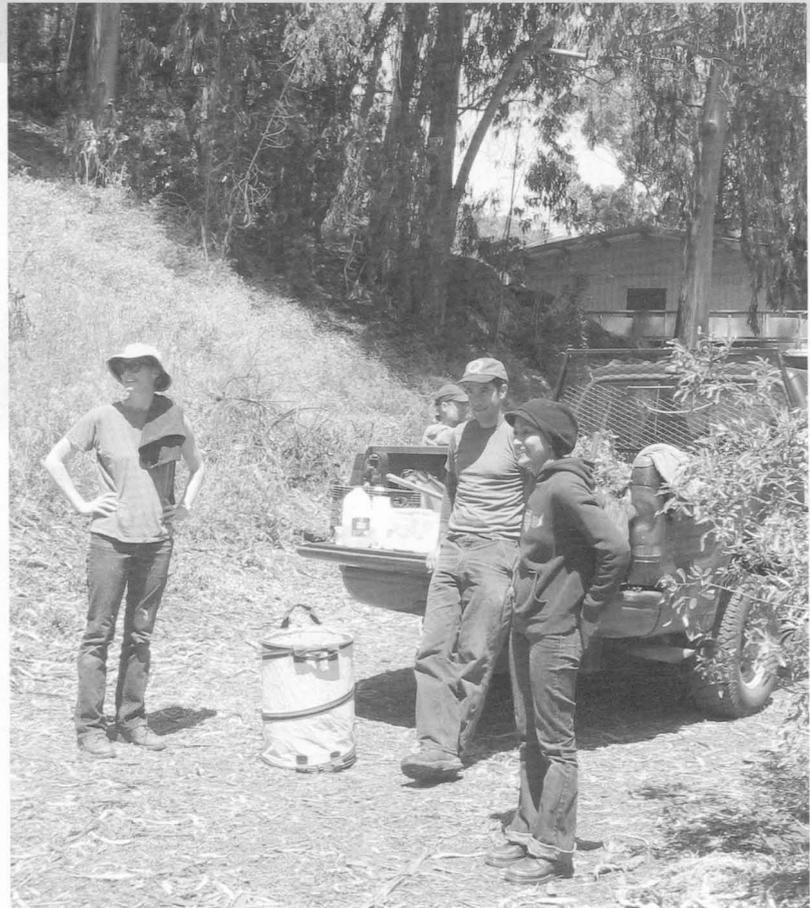
Members of the Friends of Glen Canyon have been cleaning up the creek and canyon on a regular basis since the group was established in 1987. Before that, the city's Recreation and Park Department had maintained only the sports fields and recreation center at the canyon's mouth, leaving the upstream "back-country" to grow nearly wild. (RPD's Natural Areas Program now assists the Friends' restoration efforts.) It became a dumping ground for trash, including wrecked and stolen cars. According to Richard Craib, the group's president, kids liked to roll tires—and manhole covers—down the canyon walls. Much of the junk, naturally, ended up in the creek. "Our first job was to clean the trash out of the

creek," said Jean Conner, the Friends' vice president. "We figure we took out about five cars' worth of parts."

It's not just Glen Park residents who come out here to work, though. Rikke Cox, for example, a self-described "native-plant nerd" from Noe Valley, and her partner, Lisa, have long enjoyed walking their dogs in the canyon, and come here often to help out. "It's kind of like having a big garden we can all share," she said. "You can come out and look at the work that's been done and think, 'I did that.'" The two like seeing how the creek changes at different times of the year, too. Right after the first rains, they said, the water is slick and shiny from the streets' oily runoff, but by the end of the season it runs fairly clear. After heavy rains in 2006, Cox said, "We just watched [the creek] rise and rise. It was kind of sad to see it go down again, it was so beautiful."



Richard Craib, president of Friends of Glen Canyon, gets his boots muddy in Islais Creek.

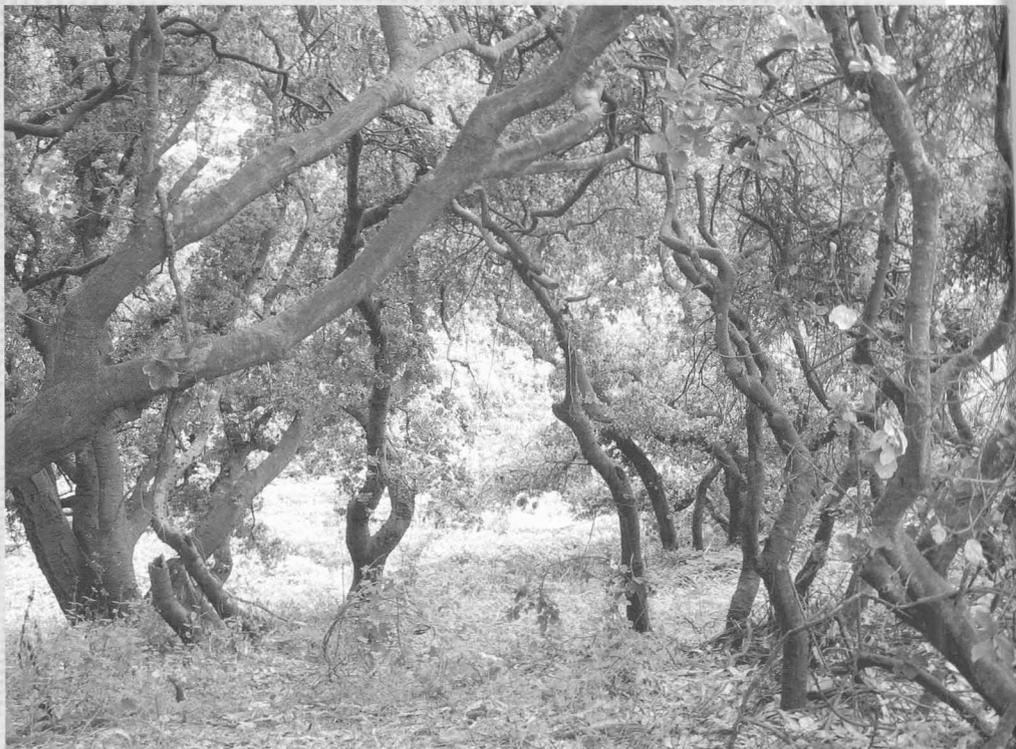


A restoration work party takes a break.

A Walk along Lobos Creek

Lobos Creek flows aboveground for much of its mile-long journey through the Presidio, from its source at a spring near the 15th Avenue gate to Baker Beach, where it meets the Pacific. It is mostly fenced off and inaccessible, however, because it is the main source of water for the Presidio. East of Lincoln Boulevard the creek flows through stands of coast live oak (top right) and other thick vegetation in Lobos Creek Valley, just south of an area that has been restored to coastal dune scrub. Visitors to the restored site—which is particularly lovely in spring, when the wildflowers are blooming—can often hear the creek as they follow the boardwalks through the dunes, but they cannot approach it.

West of Lincoln Boulevard, a dirt road leads toward the beach; at its end is a wooden stairway down to a fenced-off area (bottom left) where Lobos Creek flows from the culvert that carries it under Lincoln. From here the creek winds through a jungle of exotic trees and vines before disappearing into the Presidio's water treatment plant at the edge of Baker Beach. After its journey through the plant, the water pours from a culvert onto the beach, where it winds sinuously across the sand to meet the ocean (bottom right).





Today the area is largely paved, and most runoff goes down the storm drains and into the combined system.

Yet plenty of water still percolates underground in the area. For years, Richard has heard stories about water pouring into nearby basements in the rainy season, and when the San Francisco Conservatory of Music was renovating its building at 50 Oak Street, he said, you could look down into the hole and see the water. “They had to pump water 24 hours a day to keep [the hole] from flooding.”

With most of San Francisco’s natural landscape so resolutely buried, it takes special skills—and a special kind of awareness—to discover where the water once flowed and pooled, where it seeped inland into marshes and sloughs or bubbled up from underground aquifers into ponds nestled amid the sand dunes. It’s clear that both Richard and Sowers enjoy the hunt. When you ask them about finds like Blackstone Court, their eyes light up and they start pulling out maps. “It’s fun to piece together the history of a place, what it was like and how it has changed,” said Sowers.

To ferret out details about an area’s historical watersheds and water bodies, the team relies on

old maps and records; the San Francisco Estuary Institute’s 1998 EcoAtlas, which maps both the historical (circa 1800) and present Bay Area shorelines, has been another key resource. For information about San Francisco’s contemporary waterscape, Richard and Sowers studied maps kept by the city’s Department of Public Works and the PUC and talked to employees familiar with the system’s intricacies. They also studied aerial photographs and Google Earth, which has become an important tool, helping them home in on natural landscape features that are still traceable through the built environment.

The final step in making the maps is to go out on foot to check spots that are confusing. “Sometimes it’s not clear what’s draining what,” Sowers said. The team also field-checks locations marked as “points of interest” on the map—typically, spots where you can see how the original hydrological landscape has changed.

When checking points in the field, there are many clues to what’s below. “You’re listening at storm drains, especially in summer, to see which ones have perennial flow,” said Richard. “You’re following the different patterns of development; you look at patches and seams in the pavement.”

Unofficially dubbed “Lucas Creek,” the artificial stream that flows through George Lucas’s Letterman Digital Arts Center in the Presidio is equipped with an emergency shutoff button. Most of San Francisco’s present-day waterbodies are either artificial or significantly altered.



Top: This 1857 map shows Mission Creek flowing east into San Francisco Bay.

Bottom: Cars on Franklin Street rush past Blackstone Court, one of the few remaining traces of long-vanished Washerwoman's Lagoon.

Both say that working on the maps has not only helped them get a better sense of the region they inhabit, but has also changed the way they look at the landscape. “I’m totally obsessed, everywhere I go,” said Richard. “When I’m driving along, I’m seeing the lay of the land more than individual buildings.” “When I cross a creek now, I pay attention,” agreed Sowers.

Links to the Past

A wide variety of people find the maps useful, enjoyable, or both—hydrologists, engineers, consultants, county permitting agencies, creek restoration activists, teachers, students, curious residents. “The enthusiasm with which people receive the maps is very satisfying,” Sowers said. “We put a lot of energy and enthusiasm into them, and it’s great to get it back.”

The project has also inspired other efforts at the Museum. Its website presents many of the maps, and the Waterstriders program teaches schoolchildren from urban elementary schools about their watersheds and then has them act as docents at the museum, explaining the aquatic exhibits to fellow students. “One of the things that gives me the most satisfaction is to have developed a tool that’s useful to both fifth graders and university professors,” Richard said.

But one senses that some of the pair’s most satisfying moments come from uncovering little tidbits about past lives and landscapes—like discovering that in 1870, the builders of Albion Brewery in Hunter’s Point hit the aquifer when they were boring tunnels and had to channel off all the water that came pouring through the walls. (When Prohibition came along, they switched from brewing beer to bottling spring water. Today the underground channels still flow beneath the old building, known as Albion Castle, which was sold in 2005 and may be resurrected as a brewery and restaurant.) Or driving up Twin Peaks in wet weather and discovering a little stream running across the road, and knowing that it must be from the spring that fed a tributary of the long-vanished Dolores Creek, which in turn fed Dolores Lagoon, the vanished lake by which the original Mission Dolores was located. Or standing at the end of a crooked little alley and knowing that it once was a footpath along a quiet lake. ■

STORY AND
PHOTOS BY
JOANNE CUNHA

LA CONCHITA TWO YEARS AFTER THE LANDSLIDE

Living with the Spectre of Catastrophe

On January 10, 2005, a bluff gave way behind the village of La Conchita, just south of Santa Barbara, and a huge slide of ancient marine sediment buried 10 people alive and destroyed 36 houses. Geologists have warned that more slides can be expected. There is no realistic hope that the bluff can be made safe. Yet despite all that, about 300 residents remain and some new residents have moved in.

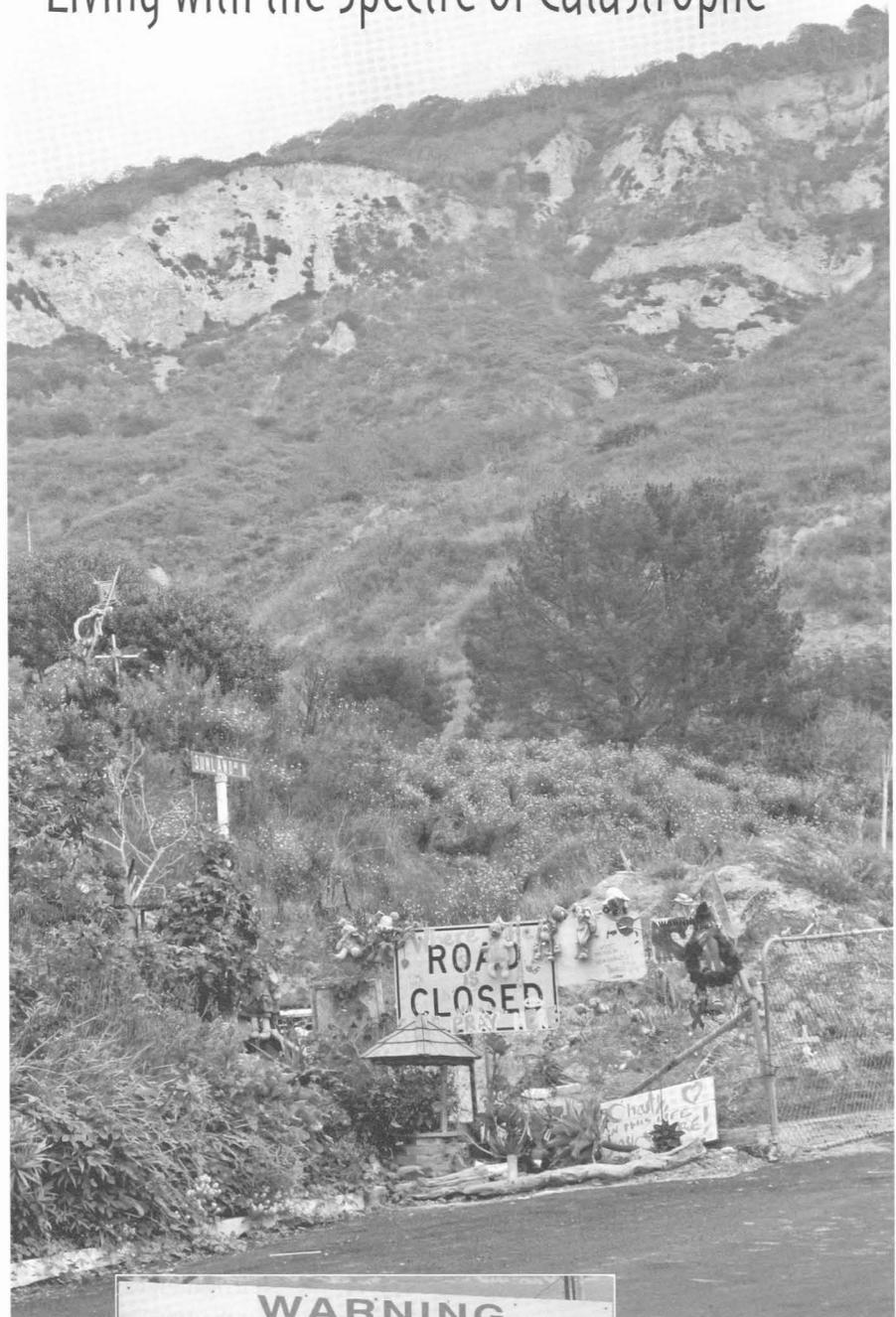
The disaster two years ago was by no means the first, nor is it likely to be the last. In 1995, 14 houses were destroyed when an unstable portion of the bluff failed. After that, "because of gravity it became somewhat more stable, but not very stable, so in 2005 part of it moved again," explained Coastal Commission geologist Mark Johnson. "There's still a lot of material that could be remobilized. The same type of thing could happen. Or there could be a fresh landslide."

Mass and gravity aren't all that's at work, according to Johnson. "An active fault runs through that slope. Many of the hills nearby are being uplifted at the highest rate anywhere, even in the Himalayas. The Ventura anticline [upfold of stratified rock], which is parallel to La Conchita, is moving upward half an inch a year, and one reason we don't have mountains like the Himalayas here is that events like the slide at La Conchita keep bringing them down."

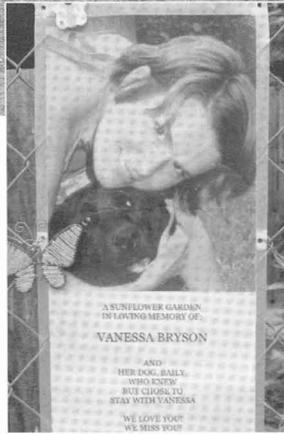
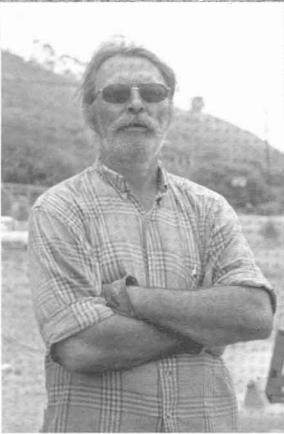
"No part of the community can be considered safe from landslides," states a 2005 report by the U.S. Geological Survey (USGS). "Historical accounts dating back to 1865 have reported landslides in the area around La Conchita as being a regular occurrence. The Southern Pacific rail line that extends along the coastal strip was inundated by landslide debris in 1889 and again in 1909, when a train was buried. Since that time, landslides frequently have inundated roads, railroads, cultivated land, and more recently the La Conchita community."

Not surprisingly, therefore, the County has declared the community a geological hazard area and a sign advising against entry has been posted.

So what are people thinking who continue to live there? I had wondered about that each time I passed La Conchita while driving along the coast. One day I turned in and talked with some of the residents.



Above: Hillside with
memorials



Top: The Stranded Market.

Above, left to right: Andy Fridwall, Harry Richardson, Vanessa Bryson Memorial

Ray Gann, owner of the Stranded Market produce truck, had only one thing to say to me: “They’ve got to fix that mountain!” Behind him, against the raw slope, crosses on mounds of earth memorialized people who had perished. Empty houses stood pushed against each other, just as the slide had left them. I felt the presence of the humongous piece of mountain shadowing us. To me it felt like a volcano.

Gann is not alone in discounting geologists’ reports. Longtime resident Harry Richardson, 82, a retired oil worker, blames irrigation at a farm above La Conchita. “They created all our troubles. They over-irrigated and water came running down the hill,” he said. “It’s just saturation of water that causes it. I’ve played in those hills. I know those hills. That hill’s not coming down, now that they’ve quit that irrigation.” The USGS report, however, noted that the 1995 landslide occurred as a result of an “extraordinarily wet year” with about twice as much rain as normal, while “the 2005 landslide occurred at the end of a 15-day period that produced record amounts of rainfall in many parts of Southern California.”

Richardson said he has lived in the community since 1928 and loves it. “It’s been wonderful.

My kids were raised here,” he said. “They are in their fifties and sixties now. They are swimmers and they all have a really good time at the beach.” From the home he shares with his wife, Yann, and their pit bull, Babycakes, Richardson has a view of the Pacific Ocean and the oil derricks he helped build.

The numerous “For Sale” signs I saw made me wonder what the options might be for some of the old-timers. They sure wouldn’t be benefiting from the hot coastal real estate market. Maybe it was understandable that they chose to stay put and take their chances. Warren Mingus, whose house is at the foot of the dangerous slope, told me: “My folks came out here in 1948 and built this place when there was no water here. My brother and I still live here. I like La Conchita. It’s still kind of a quiet place.”

A friendly place, too. “After the 2005 slide we became more like family than just a community. Everyone’s willing to help everyone out,” said resident David Fair. “I figure I’m going to be seven feet or 30 feet under. It doesn’t matter to me. Our time comes when our time comes. I’m not too worried about it.”

For more recent arrivals, cheap rent helps to overcome other considerations. Andy Fridwall moved here two years ago because La Conchita is one place his family could afford to live near a beach. “Where our house is located, we are fine,” he assured me. He and his wife both work 60 miles away, in the San Fernando Valley and the Santa Clarita Valley.

Like some people who are buying homes below sea level in the Sacramento–San Joaquin River Delta (see *Coast & Ocean*, Vol. 23, no. 2), people in La Conchita tend to talk with a hint of bravado, to shrug off the dark shadow over the future, and focus instead on what they enjoy today.

“It’s a matter of each person weighing the risk versus the perceived benefits,” commented geologist Johnson. “Only it’s not just that person who’s affected. There may be children, visitors, delivery people. And when there’s another event, there will be rescue workers putting their lives at risk.”

Meanwhile, as is the pattern after most disasters, some La Conchita residents have turned to legal action in hopes of mitigating their plight. They blame the County for building roads and other public improvements that made building here possible. When I asked Ventura County Supervisor Steve Bennett about the La Conchita situation, he said he could not discuss it because \$200 million in lawsuits have been filed against the County. ■



Views from Above

I love to fly. This may seem like an odd sentiment in the age of cramped seats, cattle-call boarding processes, no food, and irksome delays. Yet there is something about the surge of acceleration that pushes you back in your seat as the jet hurtles down the runway that I just love every time. And of course, I usually try to get a window seat, the better to watch the landscape unfold below.

From the air, all kinds of patterns emerge, patterns you are barely aware of when you're on the ground. On a flight from the Bay Area to Chicago, for instance, the entire Sacramento–San Joaquin Delta is often visible, and the contrast between the meandering natural channels and the straight lines of the engineered canals and levees is striking. Climbing over the Sierra, you get an instant picture of the quality of the snowpack (bad this year). By looking closely, I've often been able to recognize places that I've hiked in.

Aerial views have played a key role in conservation for quite some time. As detailed in this issue of *Coast & Ocean*, LightHawk has been taking decision-makers aloft for 28 years to show them what is at stake. More recently, our work at the Coastal Conservancy—and pretty much any organization involved in coastal protection—has been enhanced by the periodic photographic flights taken by Ken and Gabrielle Adelman (see www.californiacoastline.org). Our coast is not only under constant economic pressure, it is one of the most geologically active coastlines in the world, so a routine photographic record is invaluable.

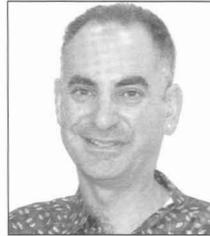
Most of the time we don't get to fly over our work, so we have to make do with maps. A map is a proxy for an aerial view, but it can also show you things you don't see from the air, such as property lines or pipelines, for instance. Having a good map is the dif-

ference between the known and the unknown, the seen and the still hidden. The first step toward lunar exploration was a good map, and it is no surprise that some of the oldest parts of the federal government are those concerned historically—and to this day—with map-making (see John Cloud's article in our previous issue at www.coastandocean.org).

Most maps stop at the water's edge, leaving to the user's imagination the task of filling in the blue spaces that cover most of our planet. The Pacific Basin is usually cut in half, which is unfortunate at a time when we are more and more connected economically with Asia, and our ecological interdependence is ever more obvious.

The new generation of mapping and display technologies, however, especially those applied under water, is literally opening up whole new vistas for science and exploration. Ocean-floor mappers have found long-lost shipwrecks, earthquake faults, vast systems of sand dunes, and all kinds of other previously unrecognized sea-floor features. We can't conserve what we don't know we have, so maps are essential for designing marine reserves and for making other informed management decisions.

These maps are also a lot of fun. Once the numbers are crunched and appropriate software is loaded, we can simulate "flying" over the ocean bottom, in and out of canyons and over rocky reefs, on our computer screens. The Scripps Institute of Oceanography has a Visualization Laboratory where map data can



be displayed on screens that wrap around almost 180 degrees. Viewing underwater maps there felt to me like flying around San Diego Bay in a submersible.

Here, thanks to the Ocean Protection Council, we have embarked on a historic effort to map in high resolution the entire ocean floor within three miles of our coastline. This has already led to some astonishing discoveries. We now understand why Maverick's is such a perfect wave machine, and have a better idea of locations where underwater landslides could create tsunami hazards.

Looking down on the planet's surface from my seat in an airliner, I have often wished that some of the new mapping technology would be applied to enable passengers to learn more about geography. Wouldn't it be marvelous if we could push a button and see on the little screen at the back of each seat a map that identifies what we are flying over? As with LightHawk, the conservation payoff could be well worth the investment.

Peanuts, anyone?

Sam Schuchat is the executive officer of the Coastal Conservancy.



Gabrielle Adelman ready to fly for LightHawk

COASTAL CONSERVANCY NEWS

NEW STRATEGIC PLAN SHOWS PHENOMENAL GROWTH

The Coastal Conservancy approved its 2007 strategic plan at a public hearing in Eureka on September 20, charting a course for the next five years. The document describes current and historical resource allocation by the Conservancy, public needs served, policies and principles guiding the Conservancy and its staff, and the intended and recommended future course.

The Coastal Conservancy strategic plan is a “living” document, intended for reference in the course of conducting the daily activities of the Conservancy. It will be subject to an annual formal evaluation and will be updated within five years.

Since it was created by the Legislature in 1976, the Conservancy has experienced phenomenal growth in capital outlay funding for projects. In its first 20 years, the agency spent approximately \$200 million on restoration, acquisition, and access projects. During the next five years it spent twice that. Between 2001 and 2006, the agency’s capacity and responsibilities continued to grow as voter-approved Propositions 40 and 50 allocated \$380 million directly to the Conservancy, the Legislature allocated an additional \$46.4 million from Proposition 40 for watershed management projects, and the California Wildlife Conservation Board granted the Conservancy \$40 million for San Francisco Bay Area wetland projects.

It is anticipated that the next five years’ funding will be at levels similar to or greater than the past five years. The passage of Proposition 84 in November 2006 allocated \$360 million to the Conservancy. Another \$90 million is available to the Conservancy for purposes of ocean protection through the Ocean Protection Trust Fund.

Funds available for expenditure on projects over the next five years total approximately \$500 million, including balances from recent bonds and Proposition 84. For

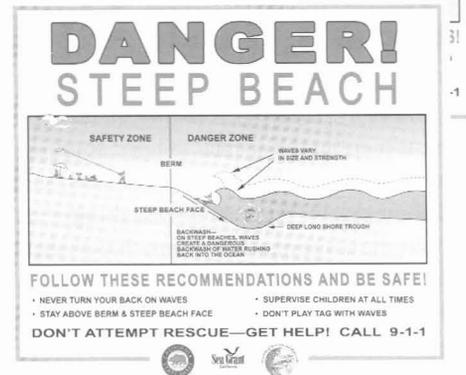
purposes of planning and prioritizing expenditures, the Conservancy assumes that \$100–150 million of additional funds will become available, derived from legislative appropriations of unallocated sections of Proposition 84, one additional state resource bond, and some newly developed or allocated non-bond sources, such as a Bay Area license plate. The strategic plan assumes that with these additional resources, the Conservancy will have a total of \$600 to \$650 million to spend—\$100 to \$130 million per year over the next five years. The plan also assumes that the Conservancy will continue to leverage its funds by at least two to one, on average.

The Conservancy’s recently completed Five-Year Capital Infrastructure Plan (FY08/09–12/13) identified a need for approximately two times the dollar amount assumed to be available to the Conservancy. Like the strategic plan, the infrastructure plan also assumes the Conservancy’s funds will be matched by at least two to one.

The Coastal Conservancy’s 2007 strategic plan is available at www.scc.ca.gov and also in print by contacting the Coastal Conservancy, 1330 Broadway, 13th Floor, Oakland, CA 94612; (510) 286-1015.

MORE FUNDING FOR THE BAY TRAIL

Many more miles of the proposed 500-mile San Francisco Bay Trail network will be completed during the next few years with the help of \$3 million approved by the Conservancy in September. Since 1990, 290 miles have been completed, enabling hikers, bicyclists, skaters, and wheelchair riders to visit more than 130 parks and wildlife preserves along or near the shores of San Francisco and San Pablo Bays, as well as city waterfronts, beaches, marinas, piers, and boat launches. The Conservancy has contributed nearly \$17 million to the Bay Trail Project since its inception, and each dollar has leveraged four dollars from other sources.



OCEAN HAZARD WARNINGS

By May 2008, 1,325 signs in English and Spanish will be posted on beaches statewide, warning visitors of potentially dangerous steep beaches and rip currents. The nonprofit Stewards of the Coast and Redwoods and a local designer created a steep beach warning sign in English and Spanish versions out of concern for drownings in the Spanish-speaking community in Sonoma County (see *Coast & Ocean*, Vol. 22, no. 3). The Stewards and California Sea Grant Extension will produce and distribute both steep beach and rip current signs, 600 of which have already been posted in San Diego, Orange, and Los Angeles Counties. In September, the Conservancy approved \$21,925 to the Stewards to complete the final 725 signs.

FRIENDS OF ELEPHANT SEALS GET A BOOST

In 1992, the first pup was born to a small colony of elephant seals that had recently established itself at Piedras Blancas, seven miles north of San Simeon in San Luis Obispo County. During the 2006–2007 birthing season, 4,100 pups were born to the colony, which has now grown to 15,000 seals. This population boom is part of the remarkable recovery of these giant marine mammals, a species that was hunted to near-extinction in the 1800s—but as the

colony expanded in the mid-1990s to beaches strung along busy Highway 1, it also created a dangerous situation for both animals and humans. As the crowds of gawkers grew, people began to get too close to the seals and sometimes harassed them, putting themselves in danger of being attacked. (See *Coast & Ocean*, Vol. 14, no. 1.)

In 1997, a group of coastal residents formed Friends of the Elephant Seal (www.elephantseal.org) to provide docents to answer questions and help ensure the safety of both visitors and seals. Today, volunteer docents are on duty nearly every day of the year, six hours a day. In September the Conservancy granted \$40,000 to this all-volunteer organization to help it to continue its program over the next two years and recruit and train new volunteers. The number of visitors has increased beyond the group's ability to manage solely on its own resources. The group's volunteers interact with about 85,000 visitors a year.

SOS WILL TRY TOP-TO-BOTTOM CLEANUP IN THREE WATERSHEDS

To help citizen volunteers reduce the volume of trash flowing to beaches and into the ocean, the Coastal Conservancy approved \$100,000 to the nonprofit Save Our Shores (SOS) in September. The funds will go toward launching a stewardship effort that will extend along three watersheds into nearshore waters of the Monterey Bay National Marine Sanctuary. If this comprehensive effort is successful on the Pajaro River, the San Lorenzo River, and Arana Gulch, it could become a model for other coastal watersheds in the state.

The SOS effort will rely on community participation, encouraging people to change their personal behavior, and working with local governments and businesses toward changing practices that now generate some of the trash flowing downstream.

Work groups of trained volunteers will gather for monthly cleanups at storm drains, along creeks and rivers, along the shore, and in nearshore waters. Scuba divers will gather trash they find in kelp beds and other marine habitats. The volunteers will catalog what they find and try to determine its sources.



The group will identify "hot spots" where trash tends to accumulate, then work with local governments, businesses, and the public to assess why it collects there and how it can be reduced. SOS might, for example, help a carry-out food shop to adopt biodegradable containers, or recommend that a park provide more trash cans. The organization will also assess how local communities collect trash and recycle, review

Northern elephant seals at Piedras Blancas: (top) mother and pup, (above) males fight in the surf.

local litter laws and their enforcement, and perhaps suggest changes that might be helpful.

SOS began in 1978 as a grassroots response to the threat of offshore oil drilling, and has been a leader in stewardship activities on Monterey Bay ever since.

NEW PUBLIC BOAT LAUNCH FOR SAN FRANCISCO

The only public boat launch in the City and County of San Francisco is falling apart. Built in the 1960s at Pier 52 in Mission Bay, the launch is not suitable for modern boats. Its ramp is so steep that it looks like “a skateboarder’s dream,” according to Conservancy project manager Joan Cardellino. Now, with the help of \$200,000 from the Conservancy, the Port of San Francisco will build a modern ramp that has two lanes instead of one and can be used by both motorized and non-

motorized boats. The new launch will also have a floating dock that is designed specifically for kayakers and is accessible to boaters with physical disabilities. The site will be a key link in the new San Francisco Bay Water Trail (see *Coast & Ocean*, Vol. 22, no. 2).

Pier 52 is a half-mile south of the Giants’ baseball stadium; to the west is the new Mission Bay commercial and housing development. The Port has been working with the boating community for 10 years to develop a new launch in Mission Bay, but the project was delayed in part by construction of the stadium and Mission Bay and the rerouting of China Basin Street/Terry Francois Boulevard. Because of the delay, the funding allocated for the project by the Port and the State Department of Boating and Waterways was no longer sufficient to pay for its construction. The Conservancy funds will make up the shortfall. The Port

will maintain the launch and add public facilities such as a cafe or equipment rental kiosk as funding allows.

SONOMA COUNTY RANCH NOW PARKLAND

The largest piece of privately owned land on the Sonoma coast between Bodega Bay and the Russian River has been protected as parkland and will become part of Sonoma Coast State Beach. In September, the Sonoma County Agricultural Preservation and Open Space District bought the Poff Ranch, 1,236 acres of scenic rolling grasslands and coastal forest, for \$5.6 million, with the help of a \$750,000 grant from the Conservancy.

The ranch, which has been used for grazing cattle for many years and has been in the Poff family since 1963, is three miles north of Bodega Bay and one mile east of Highway 1. It is bordered on three sides by



PHOTOS: STUART MARTIN/SCAFOSD



Opposite and left: Poff Ranch, Sonoma County

protected land—the Red Hill addition to Sonoma Coast State Beach to the west, and properties with conservation easements to the north and south—and has great potential for both wildlife and regional trail connections, as well as camping, horseback riding, and other recreational activities. The property includes a small redwood grove, and its ridges and the 1,190-foot Wright Hill provide panoramic views of the ocean and coastal headlands, including Point Reyes. A 1900-era homestead and barn, never electrified or modernized, remain on the land and may be used for cultural and historical programs.

Regional plans for this portion of the Sonoma Coast have identified the Poff Ranch as a priority area for conservation since 1999. When the property was listed for sale in April 2007, the Open Space District consulted with State Parks, Sonoma Land Trust, LandPaths, the Conservancy, and other conservation partners before entering into a purchase agreement with the owners in June. The purchase was finalized September 28.

STORAGE PONDS TO PROTECT MARIN CREEK

What good is it to restore fish habitat if there's no water in the stream?" a Conservancy board member asked project manager Michael Bowen. It's a highly rele-

vant question on Pine Gulch Creek, the largest tributary to Bolinas Lagoon, where coho salmon reappeared in 2001 after a 30-year absence. In an attempt to make sure property owners with riparian rights to the creek's water do not drain it during the dry season, the Conservancy is contributing to a unique project that will permit three farms to build offstream water storage ponds, to be filled during the rainy season, in exchange for dedicating their riparian rights during dry season to instream use by fish. The project will give the farms appropriate water rights, which they now do not have. The three participating farms, Fresh Run, Paradise Valley, and Star Route, grow organic vegetables, greens, herbs, and berries.

Five storage ponds are planned for the three farms, with a total storage capacity of 61 acre-feet. In winter, when stream flows are high, the farmers will divert larger amounts of water from the creek to store in the ponds. The stored water will enable them to limit their diversions between April and July 1, and take no creek water between July 1 and December 15 of each year.

In September, the Conservancy approved \$275,000 to the Marin Resource Conservation District to prepare the final design and permits for the ponds. The Fish and Wildlife Service has agreed that the farms can continue to draw water from the ponds

even if they attract endangered red-legged frogs. The project has the approval of both the Marin County Farm Bureau and Trout Unlimited—organizations that seldom see eye-to-eye.

Among the groups that have supported and helped develop the project are Point Reyes National Seashore, Department of Fish and Game, the National Marine Fisheries Service, and of course the farmers themselves, without whom there would be no project. The State Water Resources Control Board's Division of Water Rights will soon consider the application for the appropriate permit. In 2005, the Conservancy provided \$50,000 to help plan and design the ponds, negotiate the transfer of water rights, and conduct an environmental analysis.

TALL SHIP REPLICA WILL SAIL AND TEACH HISTORY

The historic sailing ship *San Salvador*, flagship of Juan Cabrillo's 1542 voyage of exploration from Mexico to California, will sail again—or rather, a historically accurate replica of it will. In its reincarnation, the ship will take California schoolchildren aboard to learn firsthand about the state's early maritime history. The *San Salvador* was the first European ship to explore and survey the California coastline. The replica, which will be built by the Maritime Museum Association of San Diego with the help of a \$2 million grant from the Conservancy toward the estimated \$5 million project cost, will serve as a floating classroom, particularly for fourth- and fifth-graders, who study the early voyages as part of their curriculum, and as a cultural attraction for San Diego's revitalized port and waterfront. The Association will reimburse \$750,000 to the Conservancy, with interest, within two years after the ship's construction.

The ship will be capable of sailing thousands of miles, but will also be equipped with an auxiliary engine and modern facilities, and will be certified by the U.S. Coast Guard to carry passengers. Blueprints have already



Caves on the Chao property, a new addition to Laguna Coast Wilderness Park

been completed, and the association hopes to start construction in spring 2008 and finish in early 2010. When it is completed, the 200-ton vessel will reenact a portion of Cabrillo's 1542 voyage, stopping at maritime museums and public waterfronts along the California coast before returning to its permanent home at the Maritime Museum on San Diego's northern waterfront.

The museum offers more than 300 daytime and overnight educational programs annually, with more than 15,000 students participating. It also conducts "tall ship" festivals in which fleets of reconstructed and replica vessels sail to various California ports, where the public can board and explore them. The *San Salvador* will add to the museum's collection of 10 historic ships, which is already one of the most important in the nation and includes the 1863-vintage *Star of India*, the world's oldest active vessel.

LAGUNA COAST WILDERNESS EXPANDED

The City of Laguna Beach has bought the last two pieces of land needed to complete a protected greenbelt along the south ridgeline above Laguna Canyon Road in Orange County's Laguna Coast Wilderness Park. With \$2,458,000 approved by the Conservancy, the City has purchased the 58.4-acre Chao property (\$1.5 million) and the 50.37-acre Stonefield property (\$950,000). Conservancy funding included \$8,000 for closing costs.

Together, the two acquisitions, completed in July and November, will enhance

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the public trail network within the park, as well as connections to the broader regional trail network along the coastline from Newport Beach to Dana Point. Hikers and bicyclists on the Canyon Acres Trail, which runs through the center of the Chao property, will have expansive views of the coast and wilderness. This property also contains a complex of large granite caves.

The purchased properties will become part of the South Coast Wilderness, a 20,000-acre string of parks and reserves that includes Aliso and Wood Canyons Wilderness Park, Crystal Cove State Park, Irvine Ranch Land Reserve, City of Irvine Open Space, and City of Laguna Beach Open Space, as well as the 6,500-acre Laguna Coast Wilderness Park.

Local citizens have been working for 40 years to create a greenbelt of parks in this region, much of which was once the Irvine Ranch. The scenic landscape was a favorite subject of California Impressionists in the early 1900s and has continued to attract plein-air painters.

UPDATES

CENTRAL COAST MARINE PROTECTED AREAS HAVE BEEN ESTABLISHED

California's first Marine Protected Areas (MPAs), 29 offshore reserves between Point Conception and Half Moon Bay, became official as of September 21. They are the first set in a planned network, required by the Marine Protection Act of 1999, that will eventually protect sensitive areas along the state's entire 1,100-mile coastline. The purpose of the reserves is to help declining fish populations to recover and to protect ocean health, especially in the biologically rich three-mile zone off the coast. California is the first state to enact such a comprehensive plan to protect its marine resources.

A total of 204 square miles (18 percent) of state waters off the Central Coast has now been placed under some level of protection. The Central Coast MPAs, approved unanimously by the California Fish and Game Commission last April, were developed over several years by a coalition of fishermen, divers, local businesses, and conservationists guided by a team of scientists. They constitute a network of 15 State Marine Conservation Areas, where recreational and commercial fishing are limited; 13 State Marine Reserves, totaling 85 square miles, where no fishing or harvesting of other marine resources is permitted; and one State Marine Recreational Managed Area, at Morro Bay, where commercial fishing is only allowed under special permit, and recreational fishing is limited. (See www.dfg.ca.gov/mlpa/ccmpas_list.asp and www.caloceans.org for details.)

Planning is now under way for a second network of MPAs between Half Moon Bay

and Point Arena. The California Fish and Game Commission is currently gathering public views and information on this proposed North Central Coast MPA network. To take part, go to www.dfg.ca.gov/mlpa.

AWAY WITH LEAD AND NURDLES

California condors and marine organisms will benefit from two bills signed into law by Gov. Arnold Schwarzenegger in October. A.B. 821, the Ridley-Tree Condor Preservation Act, bans hunters from using lead rifle and pistol ammunition to shoot big game and coyotes in areas of southern and central California that have been identified as being within the condors' range. This legislation takes effect July 1, 2008.

Since 1987, when the last seven wild California condors were captured for captive breeding, their numbers have grown, birds have been gradually released into the wild, and about 70 now survive free in California

(Arizona and Baja California also have small populations of wild condors). Lead poisoning is a major cause of death, however, because condors often eat carrion left behind by hunters.

The second bill signed by the governor, A.B. 258, is meant to mitigate the problem of plastics in the ocean. It requires that state water boards develop a program by January 2009 to significantly reduce the load of pellets ("nurdles"), powders, and other miniscule plastic production materials that are lost during transport, packaging, and processing. Plastic manufacturers will be required to adopt best management practices for handling and cleaning up these materials, which are too small to be caught in standard stormwater catchbasins and escape into waterways and the ocean, where animals often mistake them for food. (See *Coast & Ocean*, Vol. 21, no. 4.)





MEASURING BRIDGES

Editor:

Enjoyed story about Noyo River Bridge except that the often repeated statement (I am guilty too) that this bridge is wider than Golden Gate is incorrect I think. The Noyo Bridge is 87 vs Golden Gate at 90.

Tom Freund

Vince Taylor replies:

You are correct that the stated width of the GGB is 90 feet, which is greater than the 87 foot width of the Noyo Bridge. I went back over my notes to see how I came to state that the Noyo Bridge is wider. I couldn't locate the exact notes, though I know I did check data before making the statement. I believe my conclusion was based on the following: The Golden Gate Bridge District states that the width of the roadway between the curbs is 62 feet and the sidewalks are each 10 feet, giving a total for the sidewalks plus the roadway of 82 feet. If the barrier between the roadway and sidewalks is 1 foot, the total from sidewalk edge to sidewalk edge is 84 feet. (The additional width to 90 feet must represent the extensions of the bridge beyond the roadway/sidewalk combination.) I surmise that I was comparing the widths of the roadway plus sidewalks when I concluded, appropriately I believe, that the Noyo Bridge is wider than the Golden Gate Bridge.

—Vince

However you slice it, 90 feet is wider than 87 feet.

—Ed.

DELTA STRANGENESS

Editor:

Thank you for your coverage of a disaster waiting to happen. What I cannot fathom is why all development hasn't been moratoriumed until truly well-engineered dikes replace those in existence. Cheap land? Not after we have to save those who are under water! Our leaders need to make the hard

calls now: stop development and re-engineer existing dikes immediately.

Kristin Thigpen, Santa Rosa

GEOCACHERS CHECK IN

Editor:

Bravo!!

We (my wife and I) have been cachers for a few years, and have found something less than 500 caches, but have enjoyed each for its own merits. We live in the high desert of southern California, (a cache-rich area). This is, without a doubt, the best article we have ever read concerning geocaching.

Anyone who isn't intrigued into trying our sport/game, after reading your article, will probably stay with their nerdy, sedentary, uninteresting lives until they finally die of boredom.

We have many other obligations, but every chance we get, we go out caching. That chance day always, ALWAYS, turns out to be the brightest spot in our week (or month). We always have a wonderful time together and never want the day to end.

We are older folks and cannot always pursue the 4- or 5-star terrain caches, but the others we usually find. There are always exceptions, of course, but these exceptions challenge us to try again another day. We almost always prevail, and when the subsequent attempt succeeds, the victory is even sweeter.

Team Hatco, Bill & Andie, Palmdale

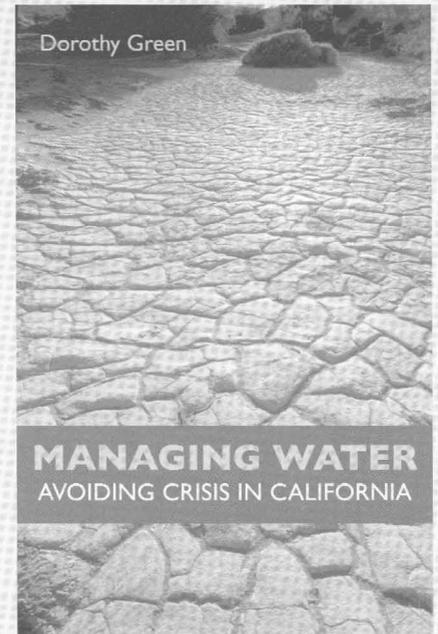
Editor:

I found this story [Treasure Hunting along Monterey Bay] very interesting. I have been geocaching since 15.03.2007, my brother introduced me to it. I come from England but have been living in Germany for the past 27 years. Here geocaching is very popular, although reports in newspapers are very seldom.

Mit freundlichen Grüßen,
David Harley, Hameln, Germany

NEW WATER BOOK

Managing Water: Avoiding Crisis in California, Dorothy Green's detailed analysis of watershed and water policy issues, excerpted in *Coast & Ocean*, Vol. 22, no. 4, is now available from University of California Press. Water has always been at the center of California politics and history, and Green's work, though focused on the Los Angeles area, provides a basis for understanding the complexities of current water systems, and guidelines for avoiding water crises and developing sustainable policies for the future.





Our thanks to beloved cartoonist Phil Frank (1943–2007), who was generous with his talent and contributed both art and writing to *Coast & Ocean* numerous times. Above is his cover drawing for the “Nature Tourism Comes Home” issue, Summer, 1997.

Phil is best known for his “Farley” cartoon strip, which ran in the *San Francisco Chronicle* for more than 30 years. Both he and his characters are now legend.



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In this issue:

**Views from the Sky
Saving the Coast through Pictures**