

CALIFORNIA  
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*Minding our Coastal Watersheds*

WHO OWNS THE BEACH? • WHALEBOAT RACING • "NO-TAKE" MARINE RESERVES

#### ABOUT THE COASTAL CONSERVANCY

The Coastal Conservancy is a state agency working to preserve, improve, and restore public access and natural resources along the coast and on San Francisco Bay. It builds trails and walkways, purchases threatened coastal land from willing sellers, enhances and restores wetlands and watersheds, protects open space and farmland, supports commercial fishing, helps cities develop and improve waterfronts, and crafts innovative solutions to land use conflicts. The Conservancy undertakes projects in partnership with nonprofit organizations, landowners, local governments, and other public agencies. It is funded primarily by bonds authorized by California voters.



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OAKLAND WOMEN'S ROWING CLUB

**W**ETLANDS. Every Ducks Unlimited member knows of their importance and is committed to their protection and restoration. Every informed conservationist and resource manager in California knows that the state has already lost 90 percent of its historic coastal wetlands. In 1976 the Coastal Act drew a line in the sand, and said “no more!” In the 20 years since then, there has been almost no reduction in the 100,000 acres remaining. Around San Francisco Bay, the acreage of wetlands has actually expanded.

Good news, right? If so, why are so many wetland-dependent birds and fish in so much trouble?

It doesn't take a Ph.D. in biology to realize that coastal wetlands depend on what happens upstream. It's necessary, but not sufficient, to prevent dredging, filling, or draining them. Siltation, water diversion, poor water quality, and invasive plants can destroy wetland values as effectively as development has done. Coastal Act policies have been effective, as far as they reach; but the coastal zone boundary doesn't go far enough upstream in most cases.

As John Muir once said, “When we try to pick out anything by itself, we find it's hitched to everything else in the universe.” Following his advice, wetland advocates have looked upstream. Indeed, watershed planning is the current rage in natural resource management.

This issue of *Coast & Ocean* describes many watershed planning efforts along the California coast. And since the Coastal Conservancy has been involved along virtually every major coastal river—and many coastal streams—the articles share some of the lessons the Conservancy has learned.

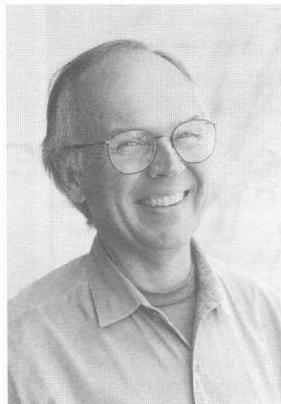
We have funded or

actively led watershed planning projects—but the Coastal Conservancy is not really a planning agency. Our primary job is to undertake tangible, on-the-ground (or in-the-river) projects. But, indeed, a comprehensive watershed reconnaissance is necessary in order to follow Muir's maxim. Thus, articles in this issue describe several approaches to watershed plans.

Watershed plans have value only if they lead to projects which protect or restore resources. Here are three examples of tangible projects the Coastal Conservancy has undertaken to relieve threats to coastal wetlands; they all lie upstream of the coastal zone:

During years of effort to protect and restore the **Tijuana Estuary**, it has been impossible to escape the fact that two-thirds of the watershed lies in Mexico. So, in partnership with El Colegio del Frontera Norte and the Environmental Defense Fund, the Coastal Conservancy pioneered the development of **Ecoparque**, a community-based, low-tech, secondary treatment plant as a pilot project upriver—across the Mexican border—to address the water quality challenge as well as provide water for a community garden and green space.

In the **Walker and Stemple Creek** watersheds, on the Sonoma-Marin border, we have partnered with the local resource conservation districts and farmers to install natural streambank protection, replace culverts, and plug gullies. The purpose was to stem the erosion which was causing sedimentation downstream, threatening important estuarine and riparian habitats.



Similarly, the major threat to the health of **Morro Bay** is an alarming sedimentation rate. Again we are working with the local resource conservation district and landowners. Our **Chorro Flats and Los Osos Creek** projects provide habitat and preserve agriculture, as well as trapping much of the sediment load bound for Morro Bay.

By its very nature, a watershed-based approach to planning and problem-solving brings with it the challenges of crossing boundaries and of creating dependable working partnerships. In practice, those challenges cannot always be met. For diverse communities, each with its own statutory basis, political realities, cultural approach to

property rights, and land use regulation to come together and actually *do something* is not always possible.

As the Santa Ynez watershed effort taught us, the timing has to be right, as well. It wasn't right there, then. Will we leave the watershed? Of course not. But we will

shift to several of the tributary streams and undertake an effort along the Walker-Stemple Creeks model.

As we search for sustainability—living on the land in a way which will assure that the resources we enjoy will remain available for future generations of all species—the watershed gives us our basic building block. Anything less than a watershed-wide vision is unlikely to respect—and protect—the connectedness of our resources.

It's time to add to that old saying, “Think globally, act locally,” a new one: “Know your home watershed, protect your home watershed”—remembering that the water cycle is our planet's watershed. ■

—Michael L. Fischer

**The Coastal Conservancy has been involved along virtually every major coastal river**

## FINDING OUR PLACE IN THE

# Watershed



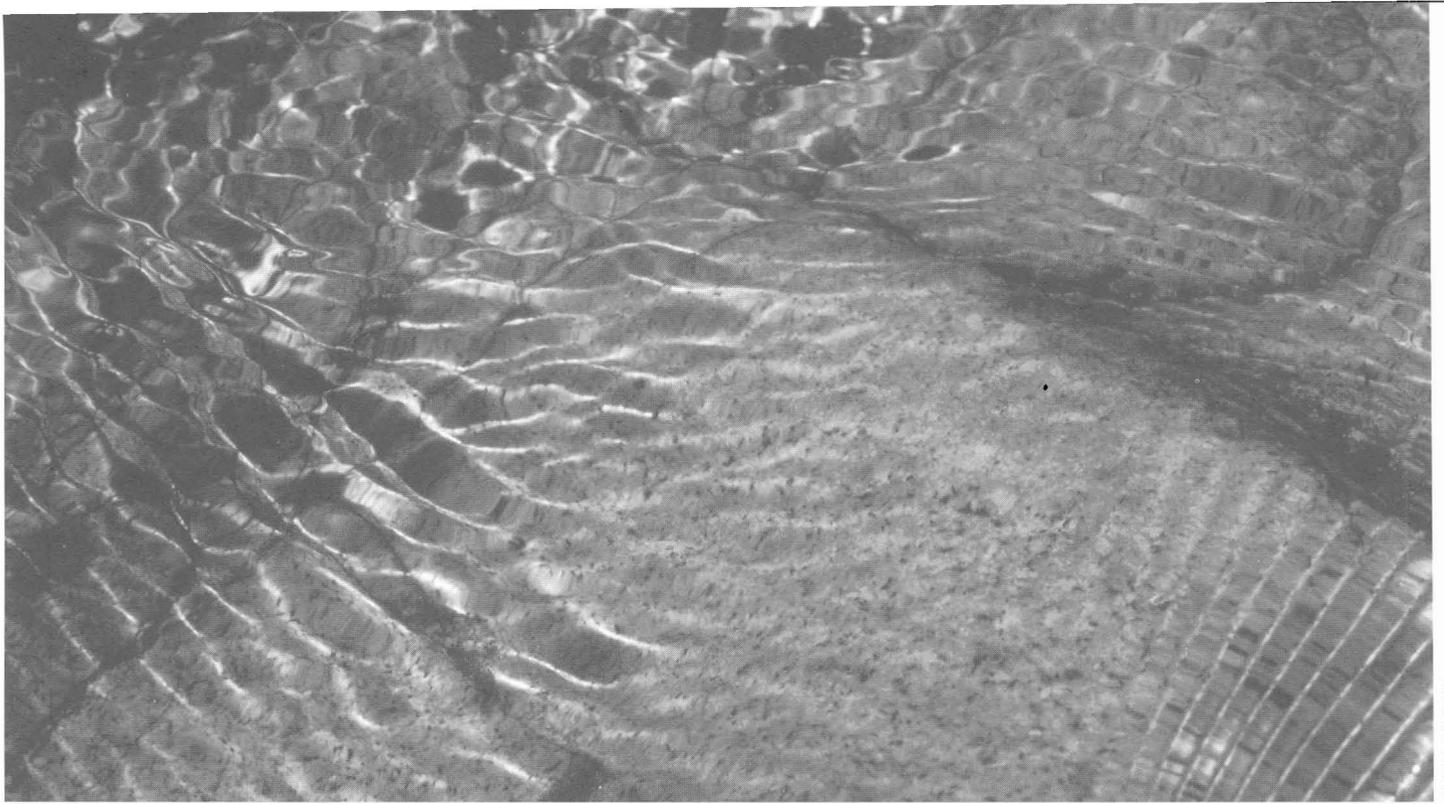
WHAT'S YOUR HOME ADDRESS? You know the city and street, the county and zip code, but what's your watershed? If you live in the country you may know, but if your home is in an urban area, you probably have no idea. Where would you even look for your watershed?

"Look from the bottom up, or go to high ground and look down," suggests Dorothy Green, founding president of Heal the Bay, Santa Monica. "See the big drainage patterns. Try, in your mind's eye, to remove buildings, shopping centers. Try to envision what it was like before they were built. You will begin to notice how the water flows."

"The surface is carved into watersheds—a kind of familial branching, a chart of relationship, and a definition of place. . . . For the watershed, cities and dams are ephemeral and of no more account than a boulder that falls in a river or a landslide that temporarily alters the channel. The water will always be there, and it will always find its way down. As constrained and polluted as the Los Angeles River is at the moment, it can also be said that in the larger picture that river is alive and well under the city streets, running in giant culverts. . . . From the tiniest rivulet at the crest of a ridge to the main trunk of a river approaching the lowlands, the river is all one place and all one land."

—Gary Snyder

By discovering their watersheds, some Californians are finding a new sense of community, of belonging to a place.



CAROL ARNOLD

*...water flows  
and streams  
on the earth....  
the fundamental  
melody that forever  
accompanies life in  
all its variations*

—Theodor Schwenk,  
*Sensitive Chaos*, 1965

The word “watershed,” as commonly used today, is synonymous with “drainage basin,” an area drained by one river system. It is also a synonym for “divide” or “parting,” the ridge or dry ground dividing areas drained by different river systems. That second meaning survives in the metaphorical use of the word to signify a turning point in thought or action. We speak of “watershed events” in the way we speak of “a sea change.”

In both the concrete and the metaphoric sense, the year 1996 may come to be thought of as the year of the watershed. It marks a confluence of two movements. For decades some poets, artists, and eco-radicals have worked toward an ethic of place, of living in accordance with the natural character of the land rather than simply perching on it and using it. They spoke of “reinhabiting” California, in contrast to simply residing here, and identified their communities by watershed and bioregion.

Meanwhile, the U.S. Forest Service and Soil Conservation Service have been mapping watersheds and planning for them since the 1930s, in keeping with their official stewardship duties. More and more, conservation efforts have expanded in

scale, encompassing watersheds, the defining features of bioregions.

This year, “Watershed” was the byword in conservation, replacing last year’s “Wetlands.” Poet Laureate Robert Hass declared April National Poetry Month and called nature writers to Washington to celebrate “Watershed: Writers, Nature and Community.” He joined with the International Rivers Network (IRN), the Orion Society, and *Poetry Flash* to sponsor “The River of Words: A National Environmental Poetry and Poster Contest for Students.” A Watershed Poetry Festival, sponsored by *Poetry Flash*, launched the national initiative in Golden Gate Park. At the same time, other people were holding conferences on watershed planning and management; reports and manuals with “watershed” in the title poured forth. The Save San Francisco Bay Association revamped its newsletter and renamed it “Watershed.”

What will be accomplished with all this fanfare remains to be seen, but it is certain that we are beginning to be interested in ourselves as living *in place*. In these pages, we offer some discussion of watershed activities along the California coast, chapters in a continuing story.

—RG

*Long one, always a flowing, always in*

# Watershed Paradox

REED HOLDERMAN

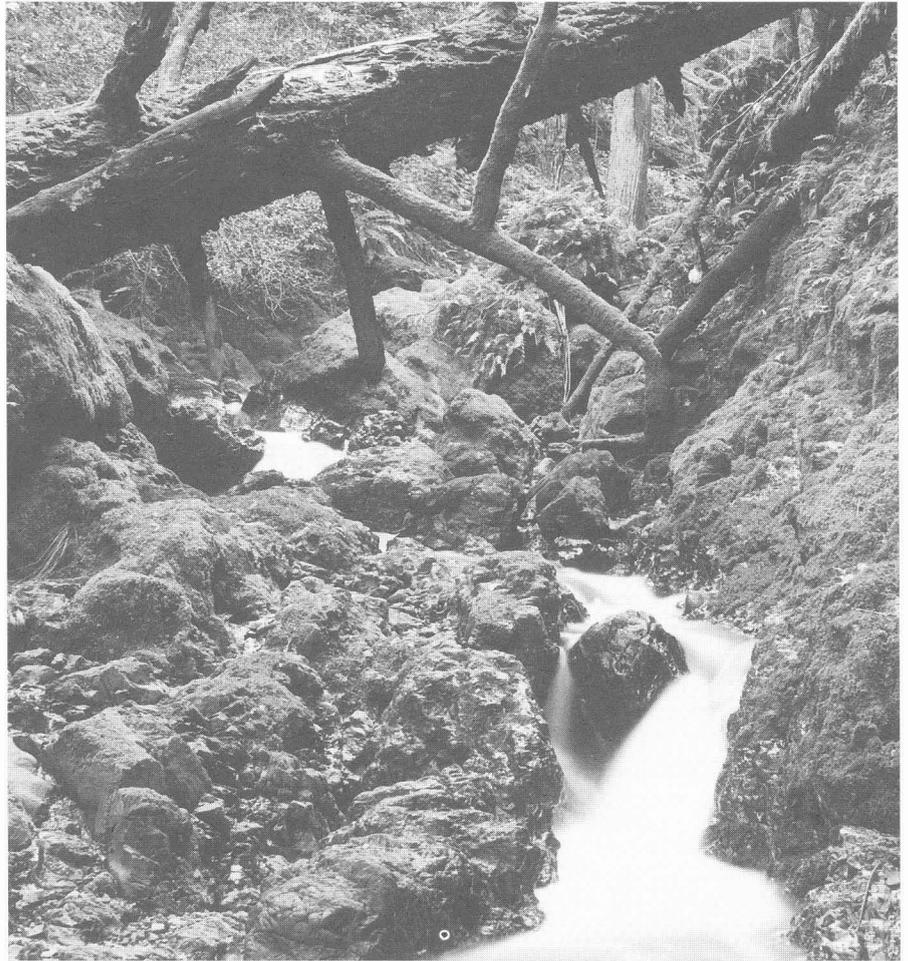
**Y**OU CAN'T GO ANYWHERE these days without hearing about it. It's the environmental paradigm of the '90s. There are policies, programs, and platitudes, all calling for the same thing: to go out and create a watershed council and plan for every river in California. Why? What makes this topic so hot?

One reason is the sorry state of many rivers. Fish migration is at an all time low. Riparian habitat has been replaced by outlet malls, forcing many of our struggling native species to look elsewhere for homes. Dams store and divert natural flows; upstream and in-stream development accelerates erosion and destabilizes river channels; and discharges into our rivers pollute them so badly that public health agencies post signs warning us to avoid water contact altogether. Added to this is our continued allowance of floodplain encroachments, which increase flood hazards and give rise to calls for more and more flood protection. Things are really a mess, and local people are getting fed up waiting for solutions. Watershed planning is a tool and a process that local people can use to fix our damaged rivers and preserve our natural heritage.

There's another reason everyone is talking "watershed." River issues are complex: the old approach of dealing with them on an ad hoc basis no longer works. As river issues interweave with one another, state and federal regulatory agencies and private landowners are realizing that the only way to solve any one problem is by addressing all the related issues. Failure to do so only

compounds the original problem or transfers it to somebody else. The farmer who dumps rock on the riverbank to protect it from erosion may see only short-lived success. The barrier may "kick" the river over to a neighbor's bank, causing damage that might not have occurred under more or less

JAY JONES



*place, teach us silence and surprise — watery mind*



An excellent and delightful *River of Words* teacher's guide is available from the International Rivers Network (IRN) to encourage continuing watershed explorations. It includes "Finding Your Bioregion," by Peter Berg, from *Discovering Your Life Place: A First Bioregional Workbook*, by Berg and Planet Drum Foundation. Write to IRN, 1847 Berkeley Way, Berkeley, CA 94703, or phone: (510) 848-1155; suggested donation: \$5 per copy. The National Environmental Poetry and Poster Contest for Students will be repeated in 1997, and again the theme is "watersheds." For entry form and contest rules, send a stamped self-addressed envelope to IRN.

natural conditions. Eventually, the river will return to its natural meander and attack the original location, with or without the rock. The adjoining landowner will probably sue for damages, and the root cause—instability in the river channel—will remain unaddressed. The processes causing this instability will not be understood any better.

Advocates of watershed planning view it as an opportunity to address all the major issues in a given drainage basin at the same time, and to describe how the entire river system works. The planning process can provide a forum for people to examine the demands and expectations placed on the river system in light of what it can and cannot accommodate. In the context of watershed planning, resource allocation problems and conflicts can be sorted out and resolved before they blow up. Proactive steps can be taken to demonstrate how river restoration and development activities can go hand in hand. Demonstration projects can be undertaken, without waiting for a formal plan to be adopted, to build trust in the process and reduce suspicion among competing interests. Watershed planning can accomplish all this and more—at least in theory.

### *What's Realistic?*

In real life, though, it's not that easy. Preparing a scientifically based watershed plan for a 100-mile river involving seven local governments, five special districts, several environmental agencies, and thousands of private property owners may sound like a great idea, but it is fraught with difficulties. You have to get people who oftentimes don't like each other to work together. You have to develop and fund a work plan, which can cost anywhere from \$100,000 to \$1 million to implement. And you have to agree on goals and out-

comes. All that certainly isn't simple; some even say it's impossible, given the general lack of funding and the incredible amount of time it takes (three to five years) to prepare a creditable plan.

Watershed planning is no panacea. Nevertheless, as an idea, it is here to stay. For all its problems, it is basically a good idea: to start thinking in terms of larger systems and landscapes is logical and reasonable. But it's only one of many good ideas, some of which are potentially better funded, can take less time to implement, involve less pain and suffering, and will show more immediate results. When we talk about watershed planning, let's be honest about what's involved in trying to create a plan for an entire drainage basin. Is this the best approach—trying to manage and improve water quality and wildlife habitat while simultaneously trying to sort out conflicting demands on limited resources? What other approaches might be worth considering?

Before we can answer this question, we must decide what kind of watershed planning is at issue. There is much confusion over terminology. On one occasion, misleading use of the term almost killed a year-long effort by a county flood control district to enlist upstream cities in a comprehensive watershed plan. The cities were reluctant. When they heard that a regional water agency was about to do a "watershed plan," they saw a chance to opt out of the flood control district's project. If the water agency is preparing a plan, they argued, why should we? The director of the flood district was incensed because the water agency's "watershed plan" was only a proposed water quality analysis.

The flood district had to work hard to regain lost ground and eventually succeeded in persuading the cities that it was in their best interest to participate in a much larger, more comprehensive plan involving hydrologic modeling of the river, vegetation surveys, and sediment transport analyses, as well as water flow and quality investigations. In time, the water agency and the flood district joined forces to begin a comprehensive watershed planning process.

When people use a term in widely different ways, confusion and misunderstandings

*It is good sometimes to stand silent by a river*

are inevitable. Add to that the differences in geographic boundaries of diverse plans (river mouth, lower river, main river corridor, 500-year floodplain, 500-year floodplain plus two representative tributaries, and the entire watershed including all tributaries), and you start to see why some people look askance when you tell them that you are preparing a watershed plan.

### *How the Focus Expanded*

The Coastal Conservancy has engaged in watershed planning, in various forms, since 1982, when we funded the first "comprehensive" watershed plan for Buena Vista Lagoon in northern San Diego County. Since then we have seen three major waves of watershed planning, each with differing purposes and boundary types.

The first wave emphasized sediment and erosion control, and habitat enhancement. In these projects we usually worked closely with resource conservation districts. Under the leadership of Laurel Marcus and Carol Arnold we assisted local farmers, ranchers, and cities to control erosion into Buena Vista Lagoon, Mugu Lagoon, Morro Bay, Elkhorn Slough, and Tomales Bay, which were quickly filling up with sediment from uplands and streams. Since our earlier work had been devoted to preserving, restoring, and enhancing these major coastal lagoons and estuaries, it seemed only reasonable that we now turn our attention toward protecting our investment. And we did. All these plans, which were locally approved and implemented to varying degrees, led to significant reductions in sediment-loading into these important areas. Most of these plans did not, however, address barriers to fish migration and impacts of upstream development, nor did they provide a complete assessment of biological and water resources. The main focus was on identifying and arresting the major sources of sediment into bays and estuaries.

The second wave of the Coastal Conservancy's watershed planning concentrated on enhancing the north coast's declining fish populations. As most of the local economies were dependent on either fisheries or timber, asking warring parties to sit

down together for the sake of the fish was relatively painless. All parties in the watershed, including the timber companies, wanted to bring the fish back. They acknowledged that past timber harvesting practices had damaged fish habitat, as had poorly engineered roads, periods of prolonged drought and flooding, and in-stream structures and activities.

During this period we again joined with resource conservation districts and non-profit organizations (Redwood Community Action Agency, Mattole Restoration Council, Carmel River Steelhead Association, Anderson Valley Land Trust, and Northern California Indian Development Council) to prepare watershed plans specifically designed to enhance salmonid habitats (i.e., creating deep pools, lowering water temperatures, providing shade and cover and gravel beds for spawning, removing barriers to migration, and reducing erosion). Some of these plans have been implemented and some are just getting started, but they all emphasize fishery restoration and enhancement. What they do not address are the larger issues that may affect fish habitat in the future, such as aggregate mining, water diversions and discharges, and changes in land use.

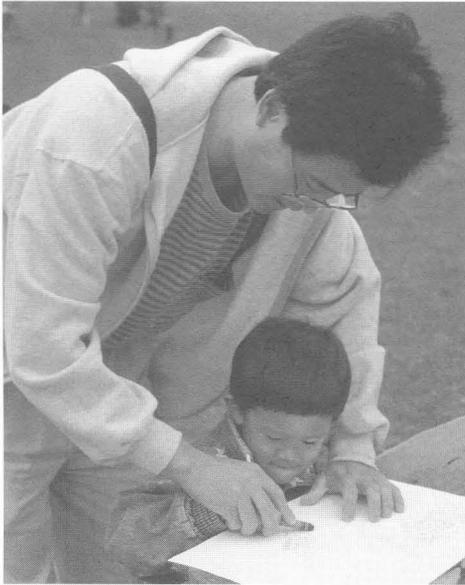
The present wave of watershed planning reflects current federal and state emphasis on landscape ecology, biodiversity, and regional planning. Plans now evolving attempt to deal with all major issues in a

This man-made waterfall, on Strawberry Hill in San Francisco's Golden Gate Park, is part of a complex system which includes underground streams and aquifers, wells, pumps, windmills, lakes, a reservoir, and irrigation lines.



JAY JONES

*Kingfishers flash in the bright shallows*



At Berkeley Earth Day 1996, people took rubbings from Shane Eagleton's river sculpture, carved on a huge redwood log that had washed ashore on the North Coast. The sculpture was inscribed with "24 Bars for a River Mural," by Robert Hass (excerpted below).

given watershed. Typically, this is done by assembling a council or steering committee of local stakeholders to oversee the process; identifying goals, objectives, and project boundaries; gathering scientific data about the river and its resources; identifying problem areas and recommending solutions; and funding and implementing these solutions. These plans are different from those designed during the first two waves of watershed planning in that they are open-ended. Everybody comes to the table with a common purpose but a different agenda. All want to deal with their particular issues. They also realize that they cannot do that unless everybody else's issue is also addressed. The trick, of course, is to reach agreement on a variety of overlapping, conflicting, and often controversial issues, while still protecting and enhancing the river that inspired all this time and effort in the first place.

### *The Time Must Be Ripe*

That is what these comprehensive plans are supposed to do. Will they? Should they? Can they? Who knows. The jury is still out. Of the four started by the Conservancy staff, only three are still alive. The fourth, the Santa Ynez Watershed Enhancement and Management Plan, initially seemed to have everything going for it: supportive landowners who weren't bent on changing rules and regulations; data and maps, summarized and annotated by a public historian; a detailed work plan; start-up funding; and a great neutral third-party facilitator, the Land Trust for Santa Barbara County, to guide plan preparation. This was supposed to be our prototype plan, the model for the way we would do things in the future.

Nothing worked out as anticipated. A year after we launched the plan, we killed it for lack of support. Water purveyors, who divert 35 percent of the Santa Ynez's water

through the mountains to the Santa Barbara coast, thought the whole thing was a setup to prevent, or make more expensive, their 40-year contract renewal for Cachuma Dam. They pointed to all the pre-planning work as proof of the conspiracy. Property owners didn't trust government and questioned the land trust's authority for watershed planning. We further found that our most supportive landowners were primarily the ones downstream, who were in a flood hazard zone. Upstream folks saw no need for a plan. The experience on the Santa Ynez taught us an important lesson: If the time is not ripe, don't push it. (See article on p. 10.) We haven't completely backed away. We may still do some sediment control and habitat enhancement on one of the river's major tributaries, in partnership with the resource conservation district.

As for the three plans that didn't die, two are nearing the draft stage. Both the Russian River and the Santa Clara River Enhancement and Management Plans have completed the team-building, scoping, and fact-finding phase of the project and are now ready to produce, subject to the review and approval of their respective steering committees, a plan that analyzes, synthesizes, and integrates all the things we know about the river into a series of concise statements about river processes, constraints, conflicts, and opportunities. The end product will be a series of specific recommendations for each reach of the river, designed to resolve potential conflicts and enhance resources. Can these plans deliver? Only time will tell. But if they can, they will be worth their weight in gold.

The third plan, the Santa Margarita Watershed plan, is just getting under way. Its purpose is to characterize the hydrologic and sediment dynamics of the watershed and model how urbanization in the upper basins will affect these processes and the resources of the lower river system. It is still uncertain whether this plan, which had a rocky start, will make it as far as the Santa Clara and Russian River Plans or end up like the Santa Ynez. But whatever happens, the data generated from this study will go a long way toward improving our understanding of how existing and future devel-

*Swallows veering in the insect dusk*

opment may affect the lower Santa Margarita River and its estuary.

### *Tips for Success*

As you may have gathered by now, watershed planning is risky business. However, if you have a river that needs help, several strategies can help you to institute a successful plan. You can, for example, minimize uncertainties about the need for a plan by spending time educating people within your watershed. For the Santa Clara River Plan, Ventura County supervisor Maggie Kildee spent a year talking to river users and special interests about the river. Every month at the Santa Paula Airport she convened a two-hour breakfast meeting on one or two topics germane to the river. One month it was aggregate resources and wildlife, the next it was agriculture and flooding. After a year of this, everyone in attendance realized two things: (1) river issues overlap and (2) a river-wide plan was necessary to sort things out. While breakfast meetings may not be the answer for everybody, a long courtship with river stakeholders is essential if you intend to start a process that has a chance of ending in success.

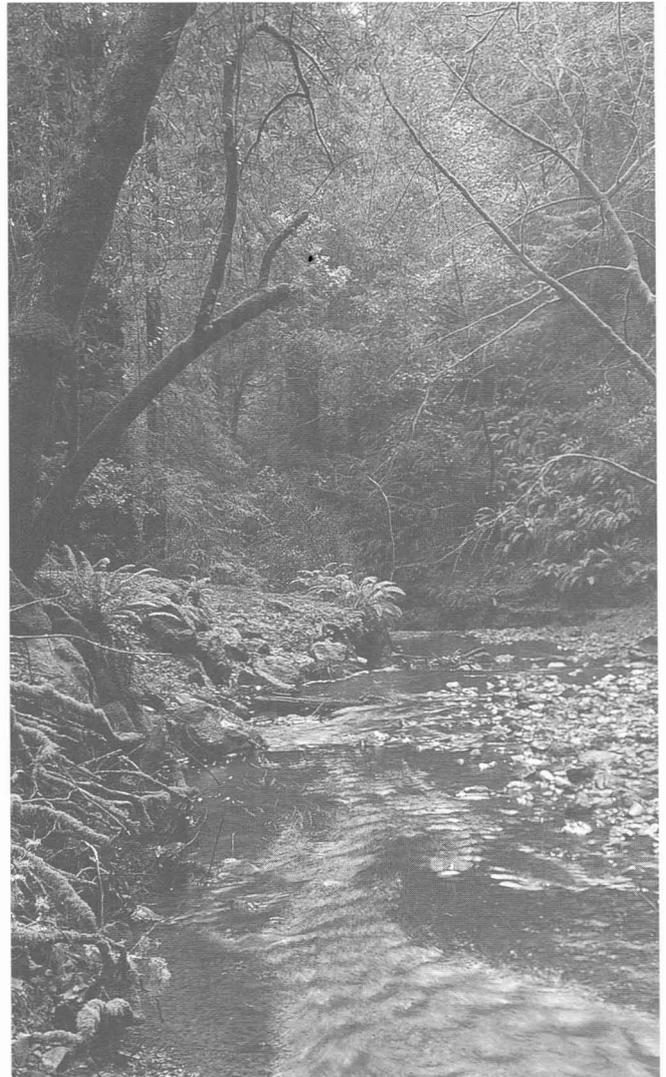
Another tip for success is inclusion. You have to involve everybody, while keeping the process to a manageable size. Trying to keep people out of the process will only sidetrack you, tarnish the credibility of your plan, and engender ill-will. On the other hand, you cannot be expected to pull together fifty diverse stakeholders and have a steering committee meeting run smoothly. A middle ground is necessary. The recent National Oceanic and Atmospheric Administration publication *Watershed Restoration: A Guide for Citizen Involvement in California*, by William Kier and Debra Caldon, has some good ideas on this subject. So do other people who have been involved in watershed planning. The best advice we have is to keep the lines of communication strong and open throughout the process.

Finally, there is the issue of money. To prepare a watershed plan you need volunteers, project staff, in-kind contributors (you would be surprised how much 400 scale-maps cost), and cash. Unfortunately,

marketing and fundraising are a big part of the process, especially in the beginning. Having a group of true believers can make this task easier, but somebody is going to have to pay the hydrology firm its \$100-per-hour fees. River stakeholders are usually willing to help out, especially if their issues are being addressed along with everybody else's. The Kier-Caldon book has a lot of good ideas on where to find funding. The best advice we have is try to arrange your funding before you start; otherwise you spend more time looking for the next infusion of cash than participating in the process and keeping it moving.

Multi-issue watershed plans will remain very expensive and time-consuming. Funding is so scarce that even the most worthy plans might never be implemented. Is it wise to build up expectations, then let them crash? It might be wiser, at times, to focus on specific problems and develop projects that demonstrate, by their success, how diverse interests can be reconciled. Sediment control and fisheries restoration plans have shown real progress while multi-issue watershed plans remain elusive.

*Reed Holderman is a program manager at the Coastal Conservancy and has been involved in the Santa Clara, Santa Ynez, and Garcia River watershed projects.*



CAROL ARNOLD

Coastal stream, Mount Tamalpais, Marin County

*As if each life were a long thought flowing*

LESSONS  
FROM AN  
ABORTED  
PLAN

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*Too Much  
Too Soon  
on the  
Santa  
Ynez*

CAROLYN BARR

*A* LONG THE MEANDERING Santa Ynez River in the Lompoc Valley, in Santa Barbara County, farmers are pitted against public agencies in a conflict known locally as the "willow war." It's an acrimonious struggle, of a kind that has been fought on many California rivers, and no hope for resolution is yet in sight. A recent attempt to find a solution as part of a comprehensive watershed planning process has been abandoned, leaving bitterness in its wake. The lessons we learned could be useful elsewhere.

The farmers who grow vegetables and flowers in the rich soils of the floodplain have been pleading with the county for flood control. They fear for their crops, their livelihoods, and, in some cases, even their lives, because the river could jump its banks: dense willows growing within its banks impede peak stormwater flows. The county says that it cannot help without a significant infusion of funds to mitigate riparian habitat damage that would occur if the willows were removed or cut back. The willows thrive on treated wastewater discharged into the river by the City of Lompoc and harbor numerous species of birds and wildlife, including some that are protected by law. Willow growth has gone unchecked since 1989.

Now at a stalemate, the willow war is only one of many conflicts in the 900-square-mile Santa Ynez River watershed. Fifty years of struggle over water rights and management have left deep emotional and political divisions between people upstream and downstream, north and south. Most attempts to resolve water-related issues have ended in frustration or in the courts.

In 1994, several desperate politicians, planners, and farmers enlisted the Coastal Conservancy's help in resolving the Lompoc flood control issue. The Conservancy agreed, on condition that the problem be considered within a watershed-wide plan. The Santa Ynez River Enhancement and Management Plan was launched, with high hopes for responsible, collaborative, and innovative solutions to resource manage-

ment dilemmas, including the willow war.

The Conservancy invited the well-respected Land Trust for Santa Barbara County to coordinate the planning process. The Land Trust hired a project manager, contracted with a professional facilitator, and established a steering committee, which—we thought—represented all watershed stakeholder groups. The steering committee held its first meeting in April 1995.

Our naive notion was that we could get everyone with a stake in watershed issues to listen to each other, study the issues, and eventually come to understand that all would benefit from their resolution. But as property rights advocates, farmers, environmentalists, and resource agency staff sat down together, it soon became clear that we were rowing upstream in a class-five rapid without a paddle.

The three sponsoring agencies—the Conservancy, the U. S. Environmental Protection Agency, and Santa Barbara County—and the project manager pulled the plug on the project during the ten-minute break at the fourth steering committee meeting, in February 1996—less than a year after the process began. This is the story of an unsuccessful watershed planning effort and the lessons we learned from it.

*Political Undertow*

From the beginning, political currents seemed to be working against us. In the Legislature and in Congress, many environmental regulations were under attack. Farmers and ranchers told us that, in their view, regulatory agencies would soon lose most of their influence and that private property rights would at last be fully restored.

Santa Barbara politics in general are known to be rancorous, and this project seemed to feed that rancor. It was perceived by some landowners as a direct attack on private property or water rights. At steering committee meetings, the Land Trust and the Coastal Conservancy were accused of having ulterior motives. As a county election campaign got under way, the tenuous initial support among elected officials and municipi-

*Now and then now and then now*

palities that had initiated the watershed project began to unravel. "As we attempted to build a watershed plan, an already weak foundation [of local support] was crumbling underneath us," observed Nancy Johnson, president of the Land Trust.

Successful watershed planning has coalesced around acute resource problems that attract widespread concern. On the Garcia River in Mendocino County and Lagunitas Creek in Marin County, the magnet issue was the severe decline of steelhead trout and salmon runs. The Conservancy brought stakeholders together to examine the reasons for this decline within the context of the entire watershed's problems. These diverse interests have continued to work together.

On the Santa Ynez no single problem obviously required watershed-wide attention. The need for some kind of assisted planning was apparent only to farmers on the main river channel in Lompoc, and to a handful of others who are losing acreage to unstable stream banks and gully erosion. "Why are you doing this?" people asked again and again.

We also realized that we had not done enough groundwork and were proceeding on the mistaken assumption that there was broad support for a watershed plan. In responding to the request for help, the Coastal Conservancy talked with most key groups in the willow controversy and was encouraged by their positive response—not realizing that it stemmed from a desire to solve this one specific issue. We did not heed the advice of professional mediators that *all* stakeholder groups be interviewed and that issues be clearly identified before any major planning effort was launched. Instead, we launched our plan and *then* asked what the issues were.

### *By Whose Authority?*

Ironically, the voluntary nature of the process worked against it. The Conservancy had taken pains to demonstrate that big government was not going to shove this one down the participants' throats, that this truly was *their* project. But because no plan was required, we were repeatedly asked, with suspicion, "Who are the Land Trust and the Coastal Conservancy, and why were they

given the authority to plan for the future of our land?"

In a further irony, Congresswoman Andrea Seastrand proposed that the U.S. Army Corps of Engineers develop a river management plan, funded by the Water Resources Development Act. Several landowners who distrusted the concept of a locally developed watershed plan are now supporting a government-controlled process that would allow them little input.

A truly comprehensive approach to resource management must be allowed to evolve at its own pace, especially where most of the resources are on private land.

The fatal flaw on the Santa Ynez was rushing the process and *telling* the landowners, water districts, and special interest groups that they were going to collaboratively develop a watershed plan. We did not take the time to understand their interests and

H. SCOTT CLARK



**The Santa Ynez River in the Santa Clara Valley**

fears, and we tried to impose a process that was not appropriate for the place and time. If a watershed-wide integrated management approach is seen as necessary, then ample time and funding must be devoted to building a strong foundation for it. Watershed planning is the vogue term of the 1990s, but the reality check from the trenches shows that it requires an immense commitment of time, patience, money, and energy. ■

*Carolyn Barr is project director for the Land Trust for Santa Barbara County.*

*What you are feeling is a river*



After the 1994-95 winter, the Garcia River eats at one of its banks.

# News from Coastal Rivers

IT'S A DIFFERENT STORY ON every river, for every river is different, as are the communities in each watershed. Home-grown watershed planning appears to work best, shaped by local people learning from one another, with the help of scientists and others who can provide what needs to be known about the river's character and condition. Here is a brief description of what has been taking place in several coastal watersheds.

*Trout leap, heron fish in the purling eddies*



The mouth of the Garcia River at Point Arena

~~~~~  
 A HOME-GROWN FUTURE  
 FOR THE GARCIA RIVER

In July 1992, contractors for the American Telephone and Telegraph Company (ATT) were drilling through mountains in Mendocino County to put in a trans-Pacific line. When the drill came out on the coastal side in the Garcia River watershed, loads of mud flowed into Moat Creek and the river.

The accident did not go unnoticed. Local people had been working to restore salmon runs to the Garcia. The Mendocino County Resource Conservation District (RCD) was about to publish the Garcia River Watershed Enhancement Plan, which states that "excessive sedimentation" had been a key factor in salmonids' decline, and that the key to improving the fishery lies in addressing this problem.

When it became clear that hassles with regulatory agencies and citizen lawsuits might stall a major ATT project, the company offered \$185,000 toward habitat restoration. This was combined with \$350,000 the RCD had earlier received from the Coastal Conservancy to prepare the plan and undertake enhancement projects in the watershed. Costly legal combat was avoided.

The fact that the watershed plan existed made it possible to arrive at this resolution,

which served the purposes of all concerned. And the way the plan came about was key to this success. It had been shaped by people talking around kitchen tables, arguing at long meetings in community halls; by people who had learned about their watershed and come to realize that it was possible to accommodate the needs of many interests while also improving the conditions for salmon and steelhead.

Two years earlier, the RCD and the Friends of the Garcia River had asked the Coastal Conservancy for assistance. The Conservancy helped to form the Watershed Advisory Group, comprised of representatives from all major groups that had a stake in the river's fish. Technical studies linked the decline of salmonid populations to reckless logging, inappropriate agricultural practices, and careless gravel mining in the 1940s and '50s, combined with recent drought conditions, logging on steep slopes in the upper watershed, point bar mining in the river, and agricultural encroachment on the estuary.

The committee's first meeting brought together people who had never wanted to meet, and some who had not spoken in years. A representative from the Department of Fish and Game, who tried to explain what could be done, was asked to leave. Then the local people, sitting in tiny chairs in the community library, talked and

*Roars down canyon, carves channels*

shouted at each other for hours—enviro-hippies mad at timber companies and gravel miners, farmers mad at everyone who was frustrating them in efforts to protect their cows from having to stand in four feet of flood water.

In time, it became clear that it was in everyone's interest to improve conditions for the fish, even if only because trouble for salmon probably meant more trouble with regulatory agencies. To get to that point, watershed inhabitants had to learn a great deal about their river and its history, and to consider what they valued about the place where they lived. The group had decided to omit, for the time being, two key areas from the initial planning process: upstream timber lands and gravel mining. They did so to avoid a fight that would kill the plan. One of the timber companies, Coastal Forest Lands, Ltd., has since decided to contribute \$24,000 in employee time to river enhancement projects. A total of \$55,000 was contributed by landowners toward planning and implementation.

The work done so far—stabilizing banks, planting willows, and other local improvements—affects only a tiny part of the river basin. But "these projects are leading the way," says Michael Maahs, commercial fisherman, fisheries biologist, and the RCD's project manager for the Garcia River

Enhancement Project. "Hopefully, after a while the kinds of things we are doing will become standard practice."



## LEARNING COMES FIRST ON THE RUSSIAN RIVER

The Russian River and its watershed have been put to many uses during the past 100 years. Through construction of reservoirs, an urban water supply has been developed. Floodplain soils now produce fine wines and other agricultural products. Aggregate mined from the river is used in construction throughout the county. These uses of the river and its watershed have significantly altered the balance and function of the Russian River.

Although in the 1920s it was renowned for its trophy-sized steelhead, the river now supports only a small native steelhead run and is dominated by warm-water fish. Much of this change has come from dams, which release water year-round into the river. Long-time riverside residents recall a different river, one that did not run year-round but had deep cold spring-fed pools even in summer—great swimming holes for children and good places to catch trout. The banks were bordered by trees and oxbow marshes. In many places the river



LAUREL MARCUS

The Russian River meanders through the Senel Valley north of Hopland. What happens far upstream bears on the future of coastal fisheries.

*Boils over rocks in a white foaming*

channel was only a few feet lower than the surrounding valley floodplains—not 20–25 feet lower, as it is today.

To restore the Russian River to its former state is both impossible and impractical. But steps can be taken to enable it to nurture more fish and wildlife while it continues to benefit people. Toward these ends, the Coastal Conservancy, together with the Mendocino County Water Agency and Sonoma County's Circuit Rider Productions, is developing three plans, for three reaches of the river, to enhance the river's natural resources and develop several public access sites. These plans were requested by the boards of supervisors of Mendocino and Sonoma Counties. The Conservancy provided \$450,000 for scientific studies and a planning process.

As part of the project, two advisory committees have been formed, one for each county. They represent primarily local conservation groups, landowners, and other local interests. Of the land in the watershed, 95 percent is privately held. Landowner participation is emphasized and state and federal agency participation is limited.

The resource enhancement plans, now well under way, are documenting long-term changes in the river system. The focus is on changes in the way the river transports water and sediment to the ocean. The many changes in the Russian River system have drastically altered its balance. For example, the large reservoirs on the river not only impound water but also block the movement of all sediment downstream. Water released from the reservoir is clean, clear, and "hungry." It eats at its bed and banks, causing erosion and loss of riparian habitat and agricultural land. Channel incision has reached 25 feet, threatening to undercut bridge piers and sewer lines. The advisory committees are seeking to understand these trends and to look for long-term measures that would assist in restoring balance to the river system. This approach benefits many of the land uses along the river by reducing bank erosion, channel degradation, decreases in groundwater levels, and other problems. It also benefits wildlife.

The advisory committees have met regularly, discussed the resource enhancement

plans, reviewed scientific and landowner information, and voted on alternatives for the enhancement of the Middle Reach, in Sonoma County, and the Mendocino Reach. This is a slow, long process, but each step has advanced local understanding of the river and laid the groundwork for informed action that enjoys wide community support.



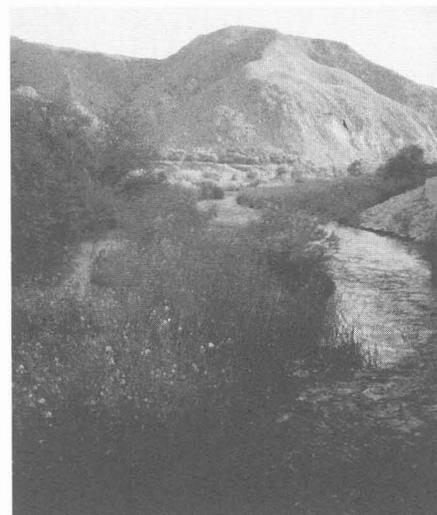
## HIGH STAKES ON THE SANTA CLARA

Southern California's longest and wildest river is the Santa Clara, flowing 100 miles from the San Gabriel Mountains to Oxnard. Along its banks are the region's largest natural riparian woodlands. Sensitive or significant species include 38 plants, animals, and birds.

The Santa Clara is also heavily used. It supports a \$1-billion-a-year agricultural industry, and supplies one-third of the sand and gravel used in Southern California. It flows through some of the fastest-growing urban areas. Because it is dry much of the year, its bed can be privately owned, and most of it is. Flash floods are a menace: it can go from no flow to 200,000 cubic feet per second within hours.

In 1991, Ventura County Supervisor Maggie Kildee began a discussion of river issues by inviting groups representing various interests to monthly "valley breakfasts." After about a year of these informal meetings, the community was ready to consider the idea of cooperative planning. Meanwhile, the U.S. Fish and Wildlife Service had been actively soliciting interest among resource agencies in developing a comprehensive plan for the river.

Encouraged by these initiatives, the Los Angeles and Ventura County Flood Control Districts agreed to lead a comprehensive planning effort for the river and 500-year flood plain, with the Coastal Conservancy playing a coordinating role. In 1992, 25 local, regional, state, and federal organizations came together to work on the plan, and several have contributed funds or



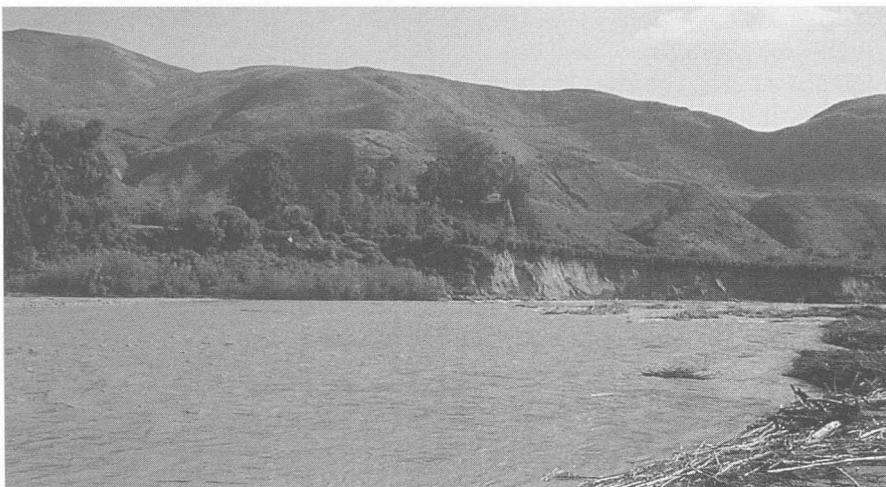
REED HOLDERMAN

Pirou Creek, a tributary of the Santa Clara River

*The grain of wood is a river*



Santa Clara River Valley



Santa Clara River at flood stage, showing bank erosion



Santa Clara River mouth

in-kind services toward the resource studies that will form the plan's technical basis. The long-term goal of the plan is to enhance the river and contribute toward its management in ways that reconcile the needs of agriculture, aggregate extraction, biological resources, cultural resources, development, flood control, public access and recreation, transportation, and water supply.

The studies of physical processes and biological resources have been completed, and writing of the plan has just begun. A hydrogeographic model has been designed by Philip Williams Associates to predict river meander. The Conservancy is using it to select locations for biotechnical bank stabilization to minimize flood damage and enhance habitat. The Conservancy is also pursuing two demonstration projects in the river. One would stabilize banks, with biotechnical techniques rather than hard structures, the other would establish a riparian mitigation bank, a large, ecologically sustainable area that developers pay to acquire to compensate for impacts of development to riparian areas.



YUOK AND TIMBER FIRM MEET ON THE KLAMATH

Timber interests and the Yurok Tribe had been on a collision course in Humboldt County. The Tribe recently regained official sovereignty and, with more than 4,000 members, is the largest tribe in California. But more than 90 percent of the 59,000-acre Yurok reservation is owned by the Simpson Timber Company. The reservation encompasses the lower 43 miles of the Klamath River, where more than 24 tributaries drain thousands of acres of forest lands in this vast watershed. There have been hot disputes about Simpson Timber's use of herbicides.

Both the Yurok and Simpson Timber have come to realize, however, that it is in their mutual interest to be better neighbors. The Klamath is the most important salmonid watershed in California, yet several native strains of salmon are on the verge of extinction. With the threat of regulatory action looming on the horizon, Simpson Timber and the Tribe met and joined

*The thrum of blood in the blue vein is a river*



The Klamath River Estuary

forces toward remedial action. In 1995 the Coastal Conservancy provided the forum and \$200,000 to the Northern California Indian Development Council for developing a plan to restore the lower Klamath River watershed.

Two plans are to be designed: a master plan to provide a strategic framework for addressing issues that affect the lower Klamath River watershed and a phased aquatic restoration program for the 24 tributaries within the lower watershed. The master plan, which is expected to be completed in 1998, will assemble technical information on the system's geomorphology, hydrology, and fisheries and will help to coordinate, focus, and leverage contributions from a diverse array of public and private stakeholders in the region. Habitat surveys are now under way. The aquatic restoration program will include monitoring, public education, and training of unemployed tribal members in restoration work.

Simpson, which was the first timber company to develop a habitat conservation plan for the endangered Northern spotted owl, has already invested significantly in similar aquatic conservation efforts. The company will also incorporate a long-term monitoring program to evaluate effectiveness.



#### YEARS OF WORK PAY OFF ON TOMALES BAY

Tomales Bay lies in a drowned rift valley formed by earth movement along the San

Andreas Fault, in Marin County. It is 13 miles long, 1 mile wide, and supports marine mammals, crustaceans, migratory waterfowl, several species of ocean fish, and the anadromous salmon and steelhead. There are both fresh- and saltwater wetlands along the southern and eastern edges of the bay.

In 1982, a record-breaking rainstorm sent massive amounts of sediment into Tomales Bay and its three main tributaries, calling attention to the damage done to the watershed by many years of grazing, logging, farming, and building. That same year the Conservancy, working with local people and various specialist consultants, undertook a study that evolved into the Tomales Bay Estuarine Enhancement Program. It recommended measures for more than 100 sites throughout the watershed to reduce erosion and sedimentation, improve farmland productivity, and reduce loss of floodplain storage, fish spawning and rearing habitat, and marshes. Ever since, local groups and the Conservancy have carried this program forward. Most of the \$1.3 million in Conservancy funding went toward repair of big gullies and other erosion sites. Two freshwater marshes have been restored; fish habitat has been enhanced; and riparian vegetation has been replanted. In addition, formal public access to a stretch of beachfront has been created and permanently protected. The clean water of the bay has enabled oyster farming to expand and diversify, bringing further economic benefits to the region. ■

Leaders in coastal watershed planning discussed their experiences at a "Watershed Summit" sponsored by the Coastal Conservancy in Oakland in May. A summary of key points is available from *Coast & Ocean*. Write or use e-mail to request a copy.

*Watershed Restoration: A Guide for Citizen Involvement in California*, by William M. Kier and Debra Caldon, is available from NOAA. The book briefly reviews the condition of California's coastal watersheds, the concerns that have sparked successful citizen efforts to protect watersheds, and offers other useful information. Request copies (free of charge) from: NOAA Coastal Ocean Program, 1315 East West Highway Silver Spring, MD 20910. Phone: (301) 713-3338, fax: (301) 713-4044, or e-mail [isheifer@cop.noaa.gov](mailto:isheifer@cop.noaa.gov)

*She fought the current*

# Santa Cruz Children Learn from the San Lorenzo

ANNE CANRIGHT

**T**AKE BOUNDLESS ENERGY, enthusiasm, and curiosity in abundance, add a little water, and what do you get? One answer, says Bruce Van Allen of the San Lorenzo River Restoration Institute (SLRRI), is a new attitude—about rivers, about watersheds, and about the complexity and richness of life.

The energy, enthusiasm, and curiosity in this particular recipe belong to the students and teachers of Branciforte Elementary School in Santa Cruz. The water is the water of the San Lorenzo River. In 1995 a three-year partnership between the school and the institute was hatched, in which the school adopted the river as the “school theme,” to serve as a real-world teaching tool for the state-mandated curriculum.

At the close of the first school year, the wisdom of this decision is evident. “Many more students and families now see some connection with the river and watershed,” Van Allen says. “The project has taught children about their rights regarding the river, and it has also taught them to respect the river,” adds second-grade teacher Barbara Novelli.

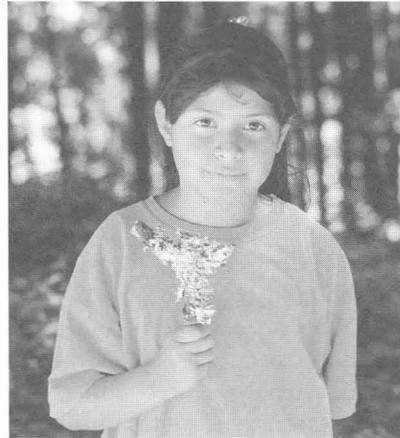
In the course of the year the children have studied aspects of life on the river, written essays and created songs about it, drawn and painted pictures. They have walked down to the river regularly to explore concepts they were studying in the classroom.

Many of the Branciforte students live in two of the city’s lowest-income neighborhoods along the desolate lower stretch of the river, which is confined between levees. Sandbars sometimes form in the river channel, creating small beaches, but the water is polluted. Signs warn that the water is

unsafe for human contact. As part of their river study the children went upstream, where they saw green banks, wildlife, and good swimming holes. They began to share the vision of restoring the river.

This was exactly as Van Allen had hoped. A former mayor of Santa Cruz, he established the SLRRI in 1992 to promote “a more harmonious relationship with the watershed.” Although the San Lorenzo provides tap water for 80,000 people, too few people know much about it.

In the late 1950s, after some serious flooding, the U.S. Army Corps of Engineers confined the last two miles of the San Lorenzo to a narrow channel designed to rush floodwaters out to Monterey Bay instead of allowing them to spread out in the floodplain. The tree-shaded grassy banks were replaced by barren levees. These changes effectively severed the ecological link between Monterey Bay and the watershed, leading to a drastic drop in salmon and steelhead migrations, and ruined the aesthetic potential of the lower river for recreation.



JOHN WELCH

In the Picture Dictionary of the San Lorenzo Watershed, Vanessa Quintero displays lichen.

*He gave himself to the river's will*

Then, in 1982, a near-flood made it clear that the channel would not protect downtown Santa Cruz from a major inundation. The city approached the Corps of Engineers and proposed a flood protection improvement project that would, at the same time, restore habitat and add some amenities. With the help of the Coastal Conservancy and the Corps, the City created the River Task Force, which brought together neighborhood representatives, business people, urban designers, hydrologists, fisheries biologists, and riparian habitat specialists, and in 1987 drew up the *San Lorenzo River Design Concept Plan*. In 1989 the City adopted a specific plan, funded by the Conservancy, for restoring habitat along the channel. Engineering plans have been approved, but the required \$7 million in federal funding awaits Congressional action.

After several years of planning and attempting to overcome bureaucratic hurdles, public outreach was the next logical step. The SLRRI was founded expressly for this purpose. If the official plans were to be realized, Van Allen explains, it was essential that the people in the watershed understand the role it plays in their lives—not only as a source of drinking water but also as an important habitat of biological and aesthetic value. Toward that end, the SLRRI began to sponsor study projects relating to the river at the University of California, Santa Cruz (UCSC), and to work with schools and community groups.

Branciforte School was a perfect choice for Van Allen because of its location up the hill from the channelized river: students could conduct experiments there as well as in the more natural upper reaches of the river and compare the results. Teacher Barbara Novelli, for instance, has been participating in the Salmon and Trout Restoration Project, a local effort, in which her children raise trout (steelhead) fry in the classroom, then attempt to release the fish into local streams. As part of this project, the students measured water temperatures in the river. Trout thrive in water of about 56 degrees. In areas shaded by vegetation the temperature was nice and cool, while along the barren, channelized stretch of the river the average temperature was in the mid-60s. The chil-

dren did not need to be told that planting trees would help create a more suitable habitat. That will be a job for future classes. First the River Task Force plan must be funded. Meanwhile, Novelli's students wrote letters to President Clinton, urging him to support this funding. And in May they held a public forum on their steelhead project, in which they presented their findings and communicated their love for the river to the community at large.

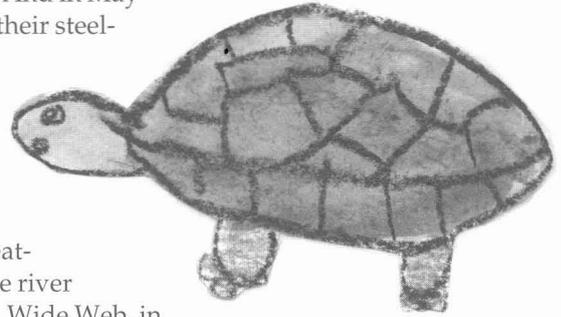
Branciforte also takes part in another SLRRI project: creating a picture dictionary of the river and watershed on the World Wide Web, in English and Spanish. The school is part of a local network of "test-site" schools: its well-equipped media lab is wired into a high-speed network that includes UCSC and the Monterey Bay Aquarium Research Institute.

Not all schools have such up-to-date facilities. Therefore, the Picture Dictionary of the San Lorenzo Watershed is also being compiled into a printed version. Accessibility is key: making sure the kids—perhaps dragging a curious adult along—learn about and explore the diversity and potential of the river.

The Branciforte children also were eager participants in last year's San Lorenzo River Festival, sponsored by the SLRRI, and will take part in the 1996 celebration, October 4-8. Students displayed their artwork, presented songs and poetry, and explained how the river acts as a school theme. This year's festival will feature an art show with material from the Picture Dictionary. (Call 408-429-1688 for information.)

These activities all add up to a powerful learning experience. They allow children to explore their own talents and interests; they provide dynamic tools for people interested in habitat awareness. Most important, they help the children of Santa Cruz to learn that the San Lorenzo is their river, and they'd better do all they can to keep it safe and sound. ■

*Anne Canright is a freelance writer who lives on the Monterey Peninsula.*



Want to know the scientific name of the Pacific Tree Frog or Thistle, or learn about the life cycle of Lichen—in English and Spanish? Consult the Picture Dictionary of the San Lorenzo Watershed on the World Wide Web (<http://gate.cruzio.com/~slriver/pd>). This project is being developed by SLRRI in collaboration with several schools, students at the University of California, Santa Cruz, and Kids and Teens Exploring Nature, a community group that organizes excursions in the Monterey Bay area. A turtle drawn by a first-grader at Branciforte is the current "Go to" icon of the site: click on it and you return to the table of contents.

*Alder leaves, oak, willow, loosed from the muddy banks*



## REPORT FROM THE BINATIONAL WATERSHED

# La Cuenca del Río Tijuana

JIM KING

**P**ONDER THIS, the Tijuana River and its watershed: shared by the United States and Mexico, two outwardly friendly but quietly hostile nations with differing traditions of governance and cultural life. This binational watershed's 1,700 square miles stretch from sparkling, tiny estuarine embayments and long sandy beaches to sage-scented forests capping the rugged mountains north and south of the border. Two-thirds of the area is in Mexico, one-third in the United States. Miles of the Tijuana riverbed are naturally dry most of the time, winding through rugged arid country. There are dams (3) and areas of concrete channel. In the lowermost reach of the watershed, before the river makes its five-mile sweep across the San Diego County coastal plain, the city of Tijuana is rising—one of the hemisphere's great urban powerhouses

and the fastest-growing urban population center on the West Coast.

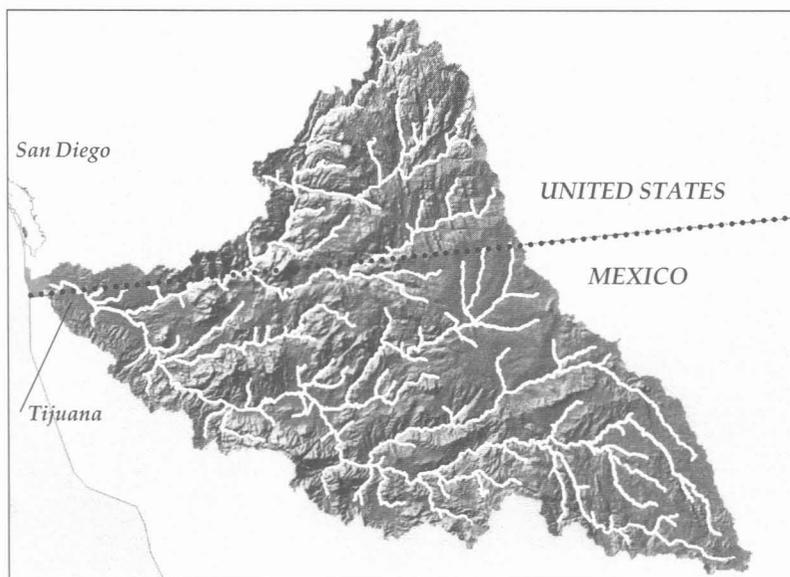
This is a watershed in disrepair and an area of immense jurisdictional complexity. It is also a place of surprising natural bounty—diverse plant and animal life, vibrant human communities, and exotic landforms. The environmental problems are daunting, chief among them being chronic sewage contamination and a pernicious cycle of erosion and sedimentation.

San Diego and Tijuana, despite all the forces that pull them apart, are inseparably linked in a region rapidly filling with humans. Naturally, there's a cry for stewardship of the environment on both sides of the border.

Numerous U.S./Mexico initiatives have been launched in recent years, particularly as side agreements have been reached to address the border environmental problems associated with the North American Free Trade Agreement (NAFTA). Prominent among these is the U.S./Mexico Border XXI Program, which seeks to promote the transition to sustainable development in the region. A foundation for watershed management is being laid by the National Oceanic and Atmospheric Administration (NOAA) Tijuana River Watershed Project; modest projects are being launched by several organizations, including the Coastal Conservancy.

With Mexican and NOAA support, San Diego State University and Colegio de la Frontera Norte, in Tijuana, are producing a geographic information system for data-collection and mapping. With this work nearing completion, it is fair to ask: is a binational project really feasible? To date,

TIJUANA RIVER WATERSHED PROJECT GIS



*Cloud-towers, cloud-mirrors in the reedy channels*



View across Oneanta Slough toward border highlands

no administrative structure exists for such an effort. Progressive thinkers in government, academia, and the private sector are pondering solutions on both sides of the border. In the meantime, small initiatives slowly move forward.

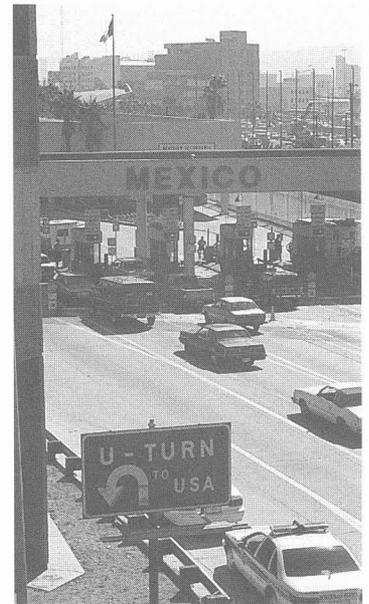
The Coastal Conservancy has been active in the Tijuana River Estuary since 1981, when it was drawn in to help plan ways to protect and restore the estuary's natural resources. A 2,500-acre National Estuarine Research Reserve was created, and careful analyses were forged into restoration plans for intertidal wetlands and estuarine channels.

Meanwhile, with Tijuana's population continuing to grow, raw sewage from Mexico was spilling into the river and into small canyons that reach the estuary's central channels. During especially bad events pollution led to frequent beach closures in San Diego County. By the 1980s the flows had become chronic, and there was a cry for action. International agreements were negotiated and financing provided for a binational project which is now under way and includes a 25 million gallon per day (mgd) secondary water treatment plant in the United States just north of downtown Tijuana and an ocean outfall 3.5 miles offshore. At the same time, with support from

the Conservancy, an alternative treatment system was tested and constructed in an eastern district of Tijuana. (see *Coast & Ocean*, Winter/Spring 1994).

In the estuary, sedimentation accelerated with increasing upstream development. According to a 1987 study by Philip Williams and Associates, intertidal wetlands and estuarine habitats have been reduced by 60 percent in the past century, and the tidal volume of the estuary has been reduced by 80 percent. Because of reduced tidal scour, the rivermouth entrance channel has become susceptible to closure, with catastrophic results for the estuary. In 1984, an eight-month closure resulted in hypersaline conditions, causing the loss of marsh vegetation and many of the species that lived there. In recent years even small wintertime rains bring great piles of sediment down the river channel and the northward flowing canyons of the Border Highlands.

The Coastal Conservancy has advocated a flood and sediment management project for Goat Canyon Creek, the westernmost tributary of the Tijuana River, which enters the estuary at its south end. The project includes a sediment management basin, which will offer a measure of protection to about 500 acres in the estuary's south arm.



Tijuana-San Ysidro crossing

*Uprivering gulls, sand bars, silted islands*



U.S. FISH AND WILDLIFE SERVICE

**Top:** This marina development was proposed for the north arm of the Tijuana River Estuary in the 1960s. **Above:** The view today, with Imperial Beach in the background.

Planned erosion control and slope stabilization work is to be undertaken on a small scale, with requisite attention to education and advocacy. The project is entirely in the United States, and the hope is that it will generate successor projects throughout the watershed.

In the meantime, the first significant wetland restoration effort this decade is in the works for the estuary's north arm, where hydrologists believe sedimentation can be reduced by improved tidal circulation. Working with the U.S. Fish and Wildlife Service, the Southwest Wetlands Interpretive Association, and San Diego State University Foundation, the Conservancy plans to construct the long-planned Connector Channel linking Oneonta Slough with the isolated tidal ponds, thereby invigorating some 200 acres of intertidal wetland, habitat for significant populations of endangered light-footed clapper rail, Belding's savannah sparrow, and numerous other wildlife species. Construction is planned for the coming winter, but timing is critical and many contingencies could delay it a year. (Except for a brief mid-winter window, endangered species have exclusive use of the land in this area of the Tijuana Estuary.)

The goals of restoring the intertidal wetlands and healing the hinterlands of the Tijuana River are intertwined, and such goals require long-term pursuit. Fortunately, slow, incremental stewardship efforts do bring many tangible rewards to people and, one hopes, real benefits to wildlife. Meanwhile, the research associated with restoration in the Tijuana Estuary is exciting and relevant. Vision and stamina are needed to foster the coordinated work required for a healthy Tijuana River watershed. Success likely will require the attention of many diverse interests over a period of decades, if not generations. As with watershed efforts elsewhere, it makes sense to measure our pace and build foundations. The work has begun. ■

*Jim King has been the Conservancy's staff representative at the Tijuana Estuary for eight years. He is a patient man.*

*This is an end, this something else  
Salt grass, salt smell, and the sea*

# Whaleboating into the 20th Century

*The last U.S. whaling station closed in 1971 (at Point San Pablo in San Francisco Bay) but whaleboating continues. It's a challenging sport, enjoyed in the spirit of teamwork. It is also simply a pleasure.*

TRAVIS LEA

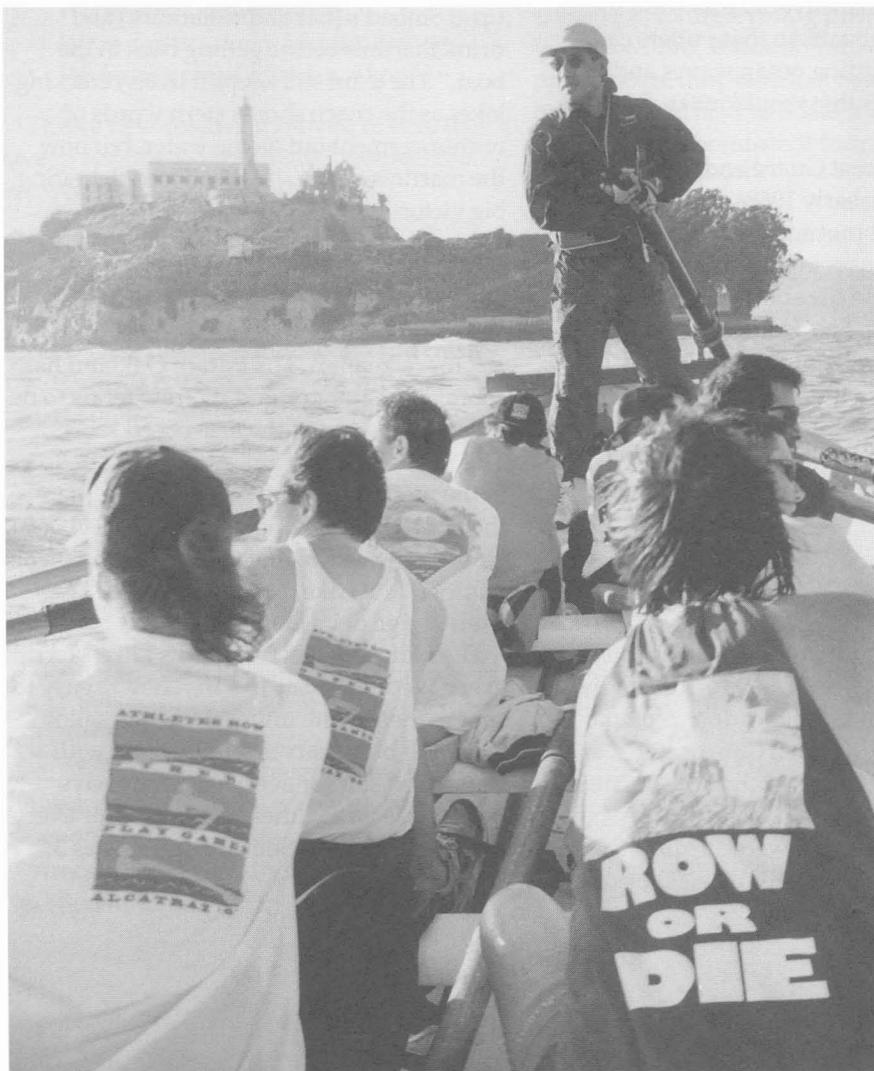
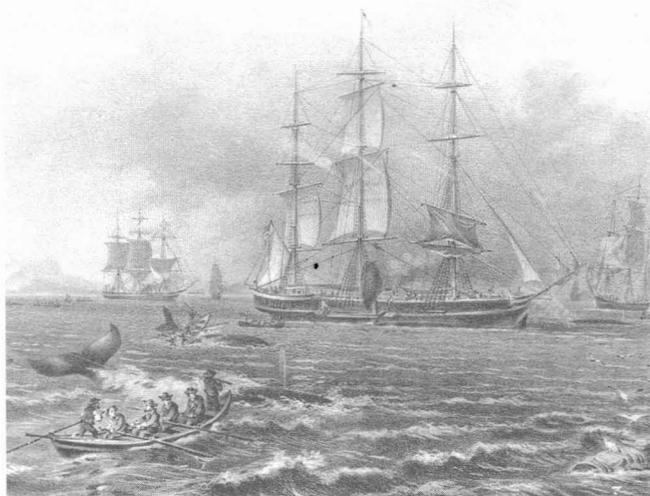
**T**HE WARM COLORS OF DUSK shrouded San Francisco Bay as Corny Foster and her crew—1995 Bay Area Whaleboat Association champions—cautiously jockeyed away from Pier 1, pulled out into open water, and headed for Alcatraz.

Less than an hour earlier, the five men and seven women in the big wooden boat had been at work in downtown law offices, banks, government buildings. They had been at computers, on telephones, talking with

clients, writing briefs. Now they were leaving behind all the tensions of their jobs, along with the city's noises. "Give way together," yelled Foster, the team coach. The crew leaned forward, dropped the 12-foot wooden oars into the water, then leaned way back as they pulled, and leaned forward again for the next stroke. With each gentle splash, with each creak and grunt, the wide, one-ton double-ended pulling boat slid slowly but steadily into the darkening bay.

This whaleboat racing team, sponsored by the International Trade Council, is one of a dozen or so that are out on San Francisco Bay or in the Oakland Estuary several times a week. This mostly local sport has its origins in the 19th century, when Alaska Packers Association sailing vessels overwintered in the Oakland Estuary, waiting for the ice to break in the northern Pacific. It is said that crews raced each other to keep fit, relax, and stave off boredom. Whaling was banned by federal law in 1971, but the historic sport continues here and, to a lesser extent, also in Boston and New York.

There is nothing high-tech or modern about whaleboat racing. "It's the aquatic version of a tractor pull," Foster explained to me before we went out. The seats are stationary, unlike the sliding seats on a modern scull, and each of the eight people at the oars, sitting two abreast, handles one oar; so they are not really rowers, they're pullers. The bowhook guides them—Corny Foster in this case—from the bow, and the coxswain, standing high on a platform in the stern, controls the boat's direction with a 16-foot sweep oar. (When such boats were used to



COURTESY CORNY FOSTER

I TC team; above: a 19th century whaling scene



The Port of Oakland whaleboat team, open to all willing hands, leans into the oars. This team can often be seen on the Oakland Estuary.

pursue whales, pushing off shore or launched from a clipper on high seas, the bowhook was equipped with a harpoon.)

The original, working whaleboats were lighter and shorter than the ones now used for sport, and were designed for four pullers. The ones now on the water are replicas of the larger, sturdier version built in 1935 by the United States Life Saving Service, predecessor of the United States Coast Guard, to serve as lifeboats. These Monomoys, named for the island off the coast of Massachusetts where the design originated, are as highly maneuverable as were the original whaleboats, so that pullers can negotiate pounding ocean waves and strong currents that would make river rowers cringe.

When the Coast Guard ended its rowing program in the early 1960s, it donated all 16 of its old Monomoys to the Sea Scouts who have several bases in the Bay Area and have been engaged in the sport since 1912. The

Sea Scouts, helped to launch other groups. In the spirit of teamwork that is common to this sport, they still lend out their boats and allow others to use their facilities.

**W**HEN WE REACHED the rough waters near Alcatraz, the line of headlights on the Golden Gate Bridge was brighter than the remaining glow of the sun. Most other boats were already tucked safely into their slips. We

turned back toward the fading silhouette of San Francisco, and soon it was my chance to sit in for a set. This was my first whaleboat ride. I hadn't even seen one of these craft—at least not knowingly—before this evening.

I suppose I did all right, only knocking the head of the guy in front of me a couple of times with my oar. The sensation I got from pulling the old boat was unlike any I've felt in a sleek, modern scull. With the salty waves splashing and the team grunting, this felt rustic and natural. An experienced oarswoman spelled me, and, after avoiding a seemingly enormous ferry headed across the bay, we slipped back to Pier 1 and I thanked the tired crew for my pleasant cruise.

Corny Foster, 45, works for the Bank of America and has been involved in whaleboating since 1979, when she was a member of the first mixed-gender crew on a private boat, at a time when men from the old steamship companies and the Sea Scouts still dominated the racing scene. These days her crew is competitive, participating in the tough racing season, May through June, and picking up again in the fall. One of the long-timers on the team, Everett Golden, 41, recalls a time when "Corny used to let us tie up at Sinbad's [bar and restaurant] and drink martinis before getting back in the boat." The team still keeps it lively, cracking jokes as the coach shouts stern words of encouragement out on the water, but now the martinis tend to be saved for celebrating big victories.

**S**EVERAL OTHER TEAMS FOCUS on competition, but some go out mainly for recreation. The Port of Oakland has room for beginners, and its crew tends to be older, than some of the fast-paced racers. The Sea Scout program is for young people in the ninth grade and up. And then there's the unique, fun-loving, highly social Oakland Women's Rowing Club, also known as Ladies of the Lake, founded in 1916. The average age of its members is 65.

The ladies row on Oakland's Lake Merritt every Wednesday at 10 a.m. They're easy to spot in their white uniforms, white sailor caps, and blue scarves emblazoned with stars, a red star for every year they have pulled at least 25 times, a gold star for every five years. Eleanor Smithbauer, 93, has 3 reds and 6 golds.

The Oakland Women's Rowing Club, founded in 1916, is out in force Wednesdays on Oakland's Lake Merritt.





PETER WHITEHEAD

The day I dropped by, three of the club's four boats were about to go out on the water. I was invited to board the *Winifred Von Hagen*, named for the club's founder. As we rode slowly around the placid lake in the whaleboat, the ladies pulled together, spoke of their love of the sport, and praised the fair weather. Then we stopped for a moment and put up the oars; it was time for the ladies to sing their song:

*We're rowers, lady rowers,  
We wear a happy smile,  
We've got a snappy style,  
We're rowers, Lake Merritt rowers,  
We have a word of cheer, Ahoy!*

Then a new coxswain moved to take the sweep oar, the ladies pulled together, and we wound back toward the dock.

The ladies value camaraderie, tradition, and ceremony. "We love Oakland, we love the water, we love to know that we're out there," says Hildegard Schafer, the club historian. They organize luncheons and raise funds with a bake sale at Oakland's annual regatta on the estuary. When one of the ladies passes away, the club gathers in full force at the lake to offer remembrances, recite poems, and toss flowers from their boats into the water.

Despite their wide differences, whaleboat rowing clubs have two things in common: their members enjoy being out on the water and are dedicated to teamwork. Aside from some 300 people who are active in the rowing community there is also an auxiliary fleet of dedicated volunteers, some of them retired team members, who haul boats to races and provide other support.

Among those working to make sure the sport continues is Rocky Trujillo, 48, who

lives in San Lorenzo, building maintenance supervisor for the Pacific Gas and Electric Company. Trujillo is portmaster of the San Francisco Sea Scout base, at Aquatic Park. He got his start in seamanship in the 1960s with the Sea Scouts, and looks back with joyful nostalgia to races in which his team pulled against steamship company boats and beat them all. He recalls pulling all the way up to Sacramento on dead calm water, singing Irish sea chanteys to the steady rhythm of the strokes. Now he dedicates much time to providing the opportunity he enjoyed to today's young people. He teaches willing learners "how to navigate, pull, change the plank in a boat, how to have fun, and how to make friends for a lifetime." The bonds that form in learning to rely on one another as a team, he says, are tight and enduring. Whaleboat racing is simple, hard, and it's fun. ■

*Travis Lea lives in San Francisco and writes for Pacific News Service and Hard Hat Construction magazine.*

**Y**ou can watch a race at Aquatic Park in San Francisco September 14 and 15 during the Festival of the Sea, sponsored by the National Park Service; or in Vallejo the first weekend in October, when up to 100 teams turn out for a community event sponsored by the California Maritime Academy. Teams form for this occasion at beauty parlors, pizza parlors, and you name it. Regular racing teams, like Corny Foster's, also take part.

If you want to try your hand at the oars, contact Peter Whitehead of America President Lines, Ltd., president of the Bay Area Whaleboat Rowing Association, at (510) 272-3974; the San Francisco Bay Area Boy Scout Council, (510) 638-3600; or Kerry Salisbury at the City of Oakland Parks and Recreation Department, (510) 238-2196. The Department keeps four boats on Lake Merritt and sponsors groups, including the Oakland Women's Rowing Club and a program for teenagers. If you get 6 or 8 people together, the Department will provide training and a boat.

**The racing season starts in May with the toughest race: Alcatraz to Aquatic Park. It's only one nautical mile, but is considered the ultimate challenge because of the fierce winds, fast currents, and strong tides that sweep through the Golden Gate.**



# Who Owns the Beach?

KATHERINE E. STONE

**The City of Del Mar wins a court battle that returns some beach to the public.**

The patios shown above were built on a public walkway in Del Mar. Seawalls and riprap extended onto public beach. A court ruling has confirmed the city's right to remove private structures from public land. The Scott and Lynch homes are shown as they were in 1992.

**M**ULTIMILLION-DOLLAR mansions today stand on small beachfront lots that were originally subdivided, many years ago, to accommodate summer beach cabins, especially in southern California. The lot owners sometimes build seawalls, swimming pools, patios, and other structures onto the public beach, either because the line between the public and the private beach is uncertain or because they are tempted to enlarge their properties at public expense.

Such encroachments have caused ire among citizens in coastal communities, but legal recourse has been scant. Private landowners can cite recent cases to support claims on public space (e.g., *Nollan v. California Coastal Commission*, 1987; *Surfside Colony v. California Coastal Commission*, 1991; and *Lucas v. South Carolina Coastal Council*, 1992), but advocates of public rights have lacked comparable recent legal authority. One of the few good precedents they did have was a 1992 Court of Appeal opinion, *Antoine v. California Coastal Commission*,

which made it clear that landowners have no right to maintain structures on public beaches. However, the case was depublished by the California Supreme Court that same year. In "depublishing" it, California's highest court rendered this case useless as a precedent. Although there has been much litigation in this area, most cases were settled out of court. Local governments have therefore been reluctant to enforce the public's right to use public beaches.

In light of this recent history, it is noteworthy that a San Diego trial court ruled in April of this year that the City of Del Mar had exercised its police power properly when it removed private patios and seawalls from the city's beach. In *Scott and Lynch v. City of Del Mar*, Judge Robert May of the San Diego Superior Court upheld a 1988 voter initiative that requires private owners to remove private encroachments and requires the City Council to do so if the owners, after a hearing, do not comply.

"This was a sweet, and important, victory for Del Mar," remarked Tracy R. Rich-

mond, who represented the City. "The Court validated all our legal theories about why, no matter how long a private party encroaches on a public property, the public does not lose its rights." In addition, he said, the Court ruled that private property owners have "the duty of self-protection" and are justified in employing measures available to them. "The case is important to all users of public beach, to other coastal cities, and to the Coastal Commission."

The city's oceanfront, subdivided early in the century, included a paved public walkway between private lots and the public beach. Over the years lot owners built seawalls, patios, and other structures that encroached as much as 30 feet onto the public beach and completely covered the walkway. After complaints by beach users and much discussion, but little action, by the City Council, voters enacted Del Mar's Beach Protection Initiative (BPI), which declares encroaching private structures to be a public nuisance. The measure allows beachfront owners to build protective devices (such as seawalls) on their private property and, where no feasible engineering or environmental alternative exists, allows up to five feet of encroachment onto public property. If any portion of a protective device is on the public beach, the owner must pay rent.

Most lot owners agreed to remove their structures. The City helped them build conforming seawalls where necessary. Jack D. and Angela Adams Scott and Edwin C.

Lynch, however, refused. They claimed that because their walls and patios had been erected about 50 years ago they had acquired the right to maintain them on the public beach. The San Diego Superior Court disagreed, holding that landowners cannot privatize public property by long-term use.

In a landmark case from 1970, *Gion v. City of Santa Cruz*, the California Supreme Court ruled that the public can acquire prescriptive rights to continue to use private beachfront property if the property has historically been used by the general public as if it were a public beach. In the Del Mar case, Judge May found that a private person may not.

### Vague Borders

**T**HE BOUNDARY BETWEEN PUBLIC and private property along the shore is elusive. Generally, it is the mean high tide line in a state of nature (i.e., before it was artificially influenced by coastal protection devices such as groins, breakwaters, seawalls, and/or sand nourishment). The exact location of this boundary may be uncertain, unless adjudicated or settled by a boundary line agreement approved by the State Lands Commission. Where there is evidence of public prescriptive rights (as in *Gion*), the demarcation between public and private beaches is even more uncertain.

In Santa Monica, for example, controversy arose in the 1960s when a private club roped off a portion of the beach for exclusive use by its members. The State Lands

In 1996, after encroachments have been removed, the public is enjoying the recovered stretch of beach.

PHOTO TOP: KATHY WAMPLER; BOTTOM: FELICIA BRECHTEL





This 1939 photo shows the beginning of private encroachment onto public land.

Commission determined that some of the beachfront mansions built in the 1930s by Hollywood luminaries encroached beyond the historical mean high tide line. This line was high up on the beach because in its natural state because the Santa Monica beachfront had been narrow and eroding, but in the 1920s and ensuing decades, structural alterations had extended the beach seaward. Massive amounts of imported sand were placed along the shore, and a breakwater was constructed, capturing sand upcoast while causing some erosion downcoast. Years of litigation, involving the homes of Mae West and others, ended in 1981 with an agreement in which the 1921 mean high tide line was accepted as the boundary, but some encroachments were allowed to remain for ten years at a nominal rent, then for another ten years at fair rental value, if the owners wished. In 1985 the rental option was extended for another five years for property that continued in the same family ownership. In this instance, unlike that of Del Mar, the encroachments had only a minor impact on public beach use.

In a case brought by the City of Long Beach, where the beach had also been artificially widened, a trial judge found in the mid-1970s that the entire beach, including land under homes built in the 1920s, had by implication been dedicated for public recreational use under the *Gion* legal theory. This beach had been popular with the public for years. On appeal, the City and State waived the claim of public rights over the properties with homes built in the 1920s or earlier (*City of Long Beach v. Dougherty*).

In northern California, a beach rights dispute along the Bolinas Lagoon goes back to 1906, when a potential homesteader claimed that the Bolinas sand spit was federal public land because it had been left out of the survey of the original ranchos, Bolinas and

Sausalito. Nevertheless, the William Kent Estate Company subdivided the sand spit in the 1960s, sold the lots, and erected a fence across the beach, thus preventing the public from walking on the beach fronting the new residences. This enraged nearby residents and prompted the Marin County district attorney to bring action against the developer. The State later joined the suit, claiming in *People v. Kent* that public rights extended landward of the historical mean high tide line because the winter beach is much narrower than the summer beach. The court did not resolve the issue, partly because the fence was removed after the passage of the California Coastal Initiative in 1972. The newly established Coastal Commission then began routinely to require public access as a condition of development.

During the winter of the 1982-83 storms, beachfront owners erected a 7,400-foot seawall under an emergency permit. The permit was conditioned on public access along the beach. In 1987, the United States Supreme Court decided *Nollan*, which limited the use of the access requirement as a permit condition by requiring that public agencies demonstrate a nexus between the condition and the burdens (such as encroachment on public lands) imposed by the development. The Marin County Board of Supervisors then deleted the condition that public access be provided along the beach.

The State then resurrected the 1906 Bolinas claim. The dispute continued, with more litigation and many public hearings. In 1994 the public agencies entered into a settlement that provided for some public access along the beach. A local citizens' organization, COAST (Citizens for Open Access to Sand and Tide) has continued to litigate for additional public access under the *Gion* theory.



## Time Does Not Extinguish Public Rights

IN THE DEL MAR CASE, the boundary between public and private land was not an issue because the area between the mean high tide line and a dedicated public sidewalk had been previously determined to be public beach. Lot owners Scott and Lynch claimed the City had abandoned the sidewalk and/or they had acquired title to the area by long use. They therefore sought compensation for the removal of their seawalls and patios. The San Diego trial court's written decision held that the landowners had not acquired the right to encroach on the public beach and that the City's removal of the seawalls and patios was a proper exercise of the police power and not inverse condemnation. The Court further ruled, however, that the oceanfront property owners "have the duty of self-protection." The court stated:

"Plaintiffs have argued that the removal of the seawalls and riprap has left their private property, including their residences, more vulnerable to storms, vandalism and burglary. However, this vulnerability has been caused by the non-action of the plaintiffs. They have had the right to seek permits to build new protective seawalls at locations closer to their homes. Most homeowners within the BPI have followed this procedure. Plaintiffs have not. This Court finds that plaintiffs cannot recover for any damage, [cq] that may occur, because they have the duty of self-protection and they have not taken any action to protect themselves." As Tracy R. Richmond puts it, "The moral to coastal cities is that they ought to protect public beach areas aggressively while still providing property owners a means to protect their property."

The case has been appealed, according to plaintiffs' attorney Marcus Crahan. The historic struggle for ownership of California beaches is sure to continue, up and down

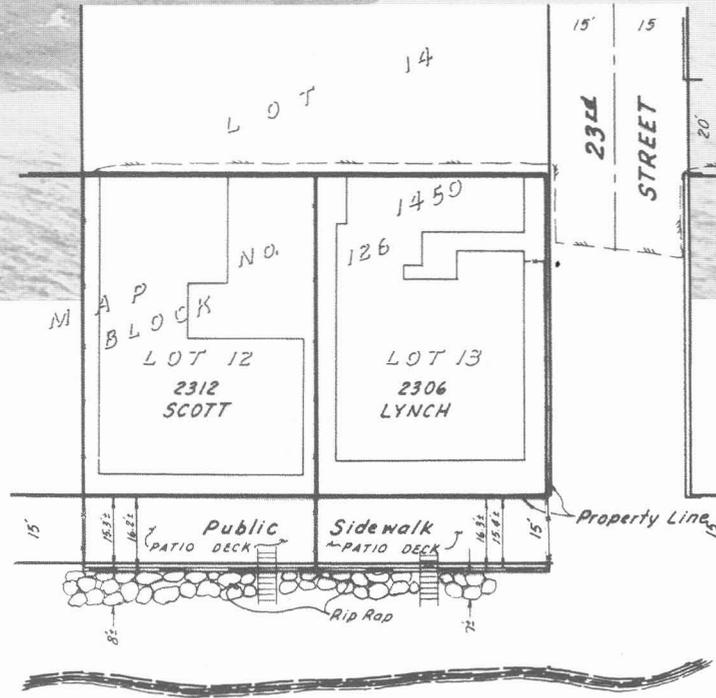


PHOTO: SAN DIEGO HISTORICAL SOCIETY, UNION-TRIBUNE COLLECTION; MAP COURTESY 1990 AERIAL TOPOGRAPHIC SURVEY

the coast. Private landowners have scored substantial gains in recent years. In *Lucas*, the United States Supreme Court held that the State of South Carolina could not prohibit development on an eroding beach without paying for it. In *Dolan*, the high court said the government must show that development permit conditions are roughly proportional to the impacts of development.

The round fought in Del Mar, however, goes to the public. The Del Mar Beach Protection Initiative, and its successful implementation and defense, have returned 86,000 square feet of sandy beach to active public use. Because the beach has narrowed in recent decades, as have many beaches in the area, each square foot is far more precious now than it used to be. The walkway will not be rebuilt. "We'd rather walk on sand," Richmond said.

For Richmond this is also a sweet personal victory. "I grew up in Del Mar and used to walk on that sidewalk," he said. "Over the years it disappeared. I wrote a paper on this subject as a law student. Twenty years later, I got to try this case."

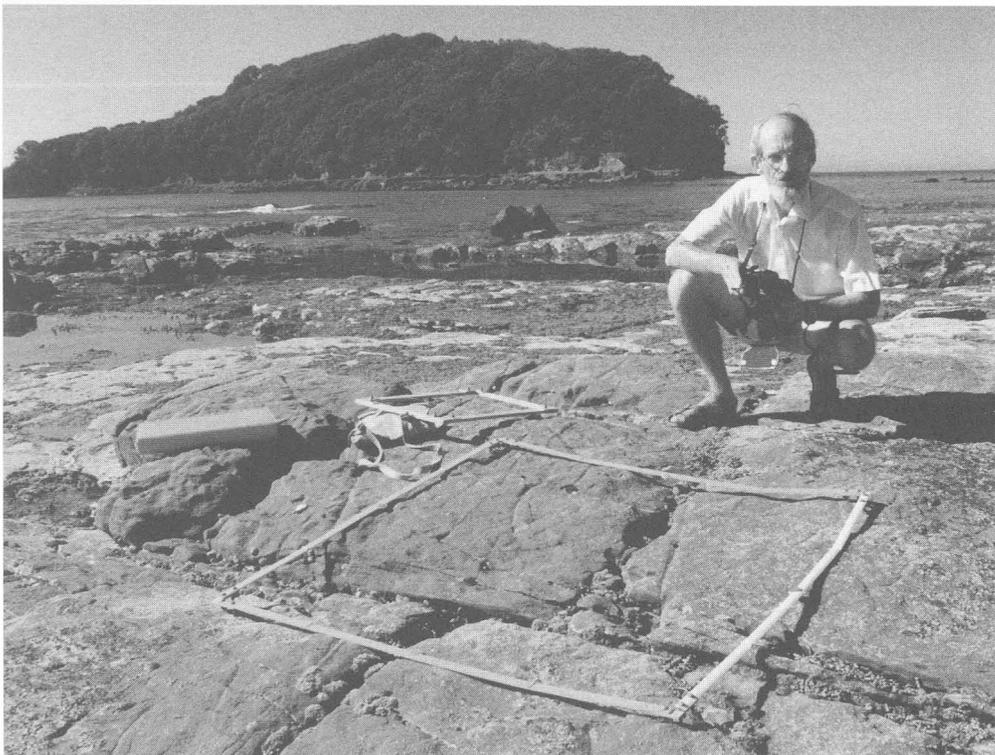
*Katherine E. Stone is an attorney who specializes in land use and environmental law. She lives in Ventura at Faria Beach, the site of the Nollan case. Ms. Stone filed amicus briefs in support of the Coastal Commission in Nollan and South Carolina's Coastal Council in Lucas, and has represented state and local governments in many coastal access cases.*

The above diagram shows the lots as subdivided in 1912, with houses, patios, and seawalls as they were in 1990. Everything outside the original property lines has now been removed.

# The Case for "NO-TAKE" MARINE RESERVES

RASA GUSTAITIS

COURTESY WM. J. BALLANTINE



William J. Ballantine at Goat Island, Leigh, site of New Zealand's first "no take" marine reserve.

**W**ILLIAM J. BALLANTINE extracts a loose-leaf book from his canvas shoulder bag and opens it to a map that shows a tiny brown landmass in a circle of blue. "New Zealand is at the center of the water hemisphere," he says. "Ninety-one percent water; 94 percent if you don't consider Antarctica, which is mostly water anyway."

He turns the page. On the next map we see his island nation in more detail. He turns again, and we're close enough to find the site of the Leigh Marine Laboratory of the University of Auckland, where he has been working for the past 30 years. The shoreline is edged on the ocean side by sev-

eral zones—rock with reefs, black sand, kelp. "And there you see a limpet on its rock," says Ballantine, turning yet another page, pointing to a spot where the limpet might be, and looking up with a smile. "This limpet is the center of the universe."

William Blake found the world in a grain of sand; William J. Ballantine found it in a limpet. He began his postgraduate work in marine ecology with this humble mollusk, selecting it because "it was completely useless." As far as he knew, limpets had no commercial use, and nobody collected them. He therefore expected that he could make

them a focus for studying natural processes, as free as possible of human disturbance. He came to New Zealand to compare local limpets with those on British coasts. What he learned turned him into a warrior on behalf of his adopted country, and of the entire planet.

In New Zealand and elsewhere, Ballantine is known as the pioneering, passionate advocate of "no-take" marine reserves—ocean sanctuaries in which marine life has absolute protection against fishing and other extraction. Largely because of his efforts, New Zealand became one of the first countries to establish such reserves. It now has 13. California has only one large

enough to count. In all other U.S. marine protected areas, some form of fishing or extraction is permitted. Ballantine makes the case that a network of no-take reserves is essential to the future of marine ecology and also to the fishing industry, just as seed banks are essential to land-based ecosystems and agriculture. Such reserves are "a buffer and insurance against our ignorance, greed, or carelessness," he has explained.

Marine life is allowed to grow, breed, and interact unhindered in a no-take reserve; conservation of genetic, species, and community diversity is maximized. Ecosystems can be studied in as natural a state as possible, and we can learn about the ocean world. Fish stocks proliferate, enriching commercial fishing grounds outside the reserve. "Children can put on masks and see lots of fish. In places where fish have never been killed they treat human beings as they treat cloud shadows," Ballantine says. He believes that a network of no-take reserves, planetwide, would benefit fisheries, vastly increase our understanding of the ocean, and could ensure the survival of entire ocean ecosystems.

### Never Mind Government, Talk to People

**"T**HOUGH PEOPLE WOULD NOT necessarily agree, they would surely understand that the most important person in the world is my grandson," Ballantine says. "My grandson's future depends on this."

We are sitting in the ornate lobby of a downtown San Francisco hotel. Ballantine has come here to receive the Goldman Environmental Prize, given each year to six people, each from a different region of the world, in recognition of outstanding grassroots leadership on behalf of conservation. He has not slept for over 30 hours, yet he seems to have boundless energy for our interview. Now and then he pauses to roll a cigarette, and fixes an intent look on his listener as he checks the effect of some metaphor. He is keenly aware that most people do not think of the ocean as part of their personal world and has honed his argument so as to reach everyone.

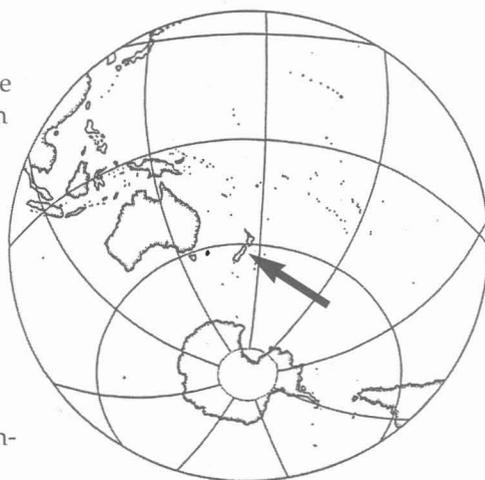
"In the marine world we're like kids who take the back off their television and stir around with a screwdriver," he says. No-take reserves could ensure that if we dam-

age some sets, we will still have some working. They are a form of insurance against the unforeseen, the unknown, the unpredictable. A prudent businessman buys insurance, and also puts aside some liquid assets for contingencies—even when he is confident that he knows his territory and that his management is excellent. The best managers understand the limits of management. Yet in the ocean, where we know so little, we try to manage without any insurance against mistakes and disasters. Protection for marine life is usually accorded only when a species has reached a point of near-extinction. This, says Ballantine, is equivalent to trying to buy fire insurance when the house is burning: "We need to buy insurance now, and call the fire department when there's smoke. It is immoral and stupid to try to get fire insurance when you smell smoke."

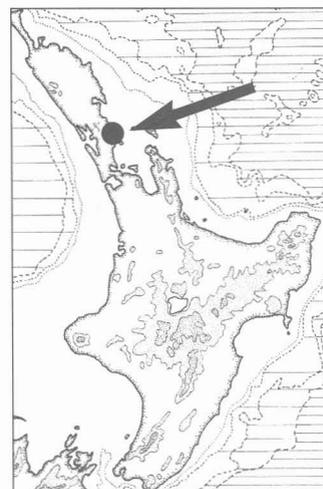
The simple logic of his argument worked as he "went all over New Zealand talking with anyone who would listen," he says. "I don't spend much time talking with politicians or government departments. In a democracy, if you want to change something, you have to change people. They will tell government. Government officials and politicians just do what we tell them, and we would not want any different." He talked at Rotary Clubs, schools, meetings of fishermen and farmers.

First he set out to make more New Zealanders aware that they were surrounded by a huge, diverse, and rich marine environment and that, "consequently, we are custodians of more marine life and habitat than anyone else. We have the best opportunity to lead the world in marine conservation." Then he had to persuade people to accept the no-take principle. "A no-take reserve means just that—no take, no exceptions," says Ballantine.

When someone argued that his proposal interfered with the right to fish, he would respond, "everyone has the right to hunt passenger pigeons—but they're extinct"; or, "When did you hear anyone complain of not being able to ride on the median strip on a highway?" The reserves enhance fish-

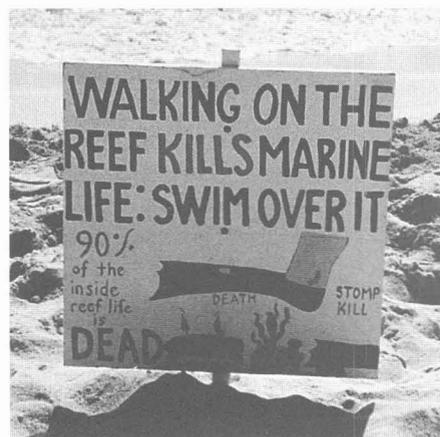


MAPS BY WM. J. BALLANTINE



New Zealand (above), Leigh Marine Laboratory (below)

In Hawaii's popular reserves, careless visitors cause unintended harm.



WESLEY MARX

eries, he said, as can be seen by the intensive fishing along reserve borders. "Local fishermen," he adds, "are the best police for a reserve."

When recreational anglers said they should be permitted to fish off the rocks because they did not catch much, Ballantine pointed out that "if a reserve is successful, the fish become bigger and less scared. If

sport fishing were permitted in reserves, every angling club in the islands would want to have its national championships there and then the reserves would be no better than anywhere else."

In the end, Bill Ballantine won his case. In 1971 the Marine Reserves Act was passed. In 1977 the first no-take reserve was established, extending along five kilometers of

## "No Take" in California

**T**HE KELP-SHADED WATERS off Big Creek look much like waters elsewhere along the Big Sur coast. But anyone who drops a hook, sets a trap, or triggers a spear gun there can be fined. The Big Creek Marine Reserve represents California's first significant attempt to replenish marine fish stocks by means of a no-take zone. A key goal is to permit resident rockfish to grow to a large size.

"Marine reserves are used extensively by some countries. They may be a better management strategy for certain marine stocks than size limits or quotas," says Michelle Paddack, a graduate student in marine sciences at the University of California, Santa Cruz, who is studying rockfish populations. "Since most rockfish live deep and die from pressure differences when you pull them up, you can't set a size limit on them."

Older, larger rockfish spawn far more eggs than younger fish, but they are also especially attractive to fishermen. Because adults generally remain in one reef area, while their larvae are carried by currents, the reserve should help to replenish depleted rockfish stocks in nearby waters.

The concept of a no-take reserve has been slow to take hold in this country. Although the California Department of Fish and Game (CDFG) has established some 40 coastal ecological reserves, all but a few permit fishing. Rock collecting and tampering with wildlife on land is forbidden, but it's still legal to catch and grill marine life. This policy prevails even in national parks and national

marine sanctuaries: living marine resources remain under CDFG jurisdiction, and hence exploitable.

The 1990 California Marine Protection Act, a voter initiative, mandated the creation of four no-take reserves but set such a strict standard that opposition to proposals for specific sites was raised even by divers, surfers, and others who favored the no-take concept. According to the Act, these reserves were to be off-limits to everyone except scientific researchers. Most supporters of no-take reserves—or harvest refuges as they are also called—regard diving, surfing, and other nonconsumptive uses as compatible, if properly controlled. Indeed, such

users help to enforce the reserve protections, for they spot and report illegal fishing.

Four no-take reserves were eventually designated, but three are virtually useless, according to David VenTresca, a CDFG biologist. "They are inaccessible, too small, and do not protect very productive habitat." The exception is the Big Creek Marine Reserve, established in 1994. Running 2.8 miles along the coast and extending one mile offshore to a 50-fathom (300-foot) depth, it is linked to the University of California's Landels-Hill Big Creek

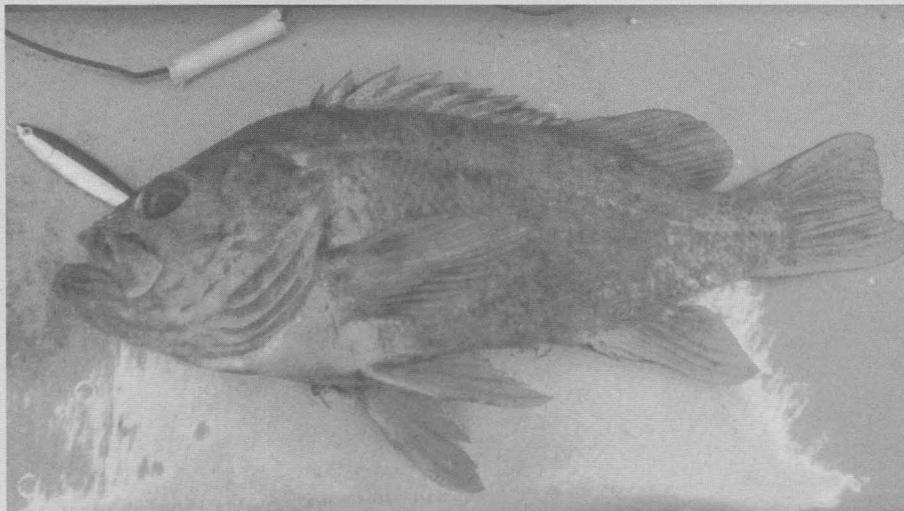


JANA WICKHAM

open coast and extending 800 meters seaward. Officially titled Cape Rodney to Okakari Point Marine Reserve, it is popularly called "Leigh." Other reserves followed, promoted by marine scientists, divers, Maori people, and conservation groups.

Now, says Ballantine, the principle has been established, and the path for others, in other parts of the world, should be easier.

"Once the trials have been made and results seen, the game changes. How many wheels do you have to see working before you can simply believe that wheels must be round? It doesn't matter if the wheels were in Afghanistan or used by people you don't like. How much of that matters? It took 30 years to this point. Now anybody can adopt the idea and make it work in their region." ■



DAVID ALLAN

Reserve. Here VenTresca, with the help of John Smiley, manager of the University reserve, and of local fishermen, has set up a program to test the reserve's effectiveness and help in the design of future harvest refuges.

Smiley enlisted local hook-and-line fishermen, who catch rockfish for the live fish markets in San Francisco, to collect data on local fish in return for permission to launch their skiffs from the University reserve—an attractive arrangement, since launch sites are scarce along the rugged coast. These fishermen were sympathetic to the reserve concept and glad to participate.

Their support and Smiley's presence alleviate the problem of enforcement, which plagues many marine reserves. "I can paddle out in a kayak and warn off intruders," he says. "Most obey once they are made aware of the reserve

status." One who did not was greeted by a marine warden when he returned to harbor. Smiley had made a call.

### Abalone Refuge

**A**NOTHER OLDER AND MUCH smaller no-take reserve, in Channel Islands National Park, is now the site of an attempt to replenish the severely depleted abalone. This marine mollusk has been steadily declining despite area-wide fishing closures and other tradi-



Above: a rockfish. Below: red abalone.

tional controls, according to marine biologist Gary Davis of the National Biological Service. Poaching is blamed and also an unexplained stress syndrome that causes abalone to shrivel in their shells. There are so few adults in some areas that males and females are too far apart for successful broadcast spawning. As an experiment, says Davis, some 600 pink abalone are now being moved to a reef within the Channel Islands National Park that has been designated as a no-take area, where they will be placed in closer proximity to each other. The California Abalone Association is participating in the relocation.

**T**he concept of harvest refuges has also been advanced along the southern Atlantic coast, where reef fish such as snapper and grouper continue to decline despite tighter catch limits. James Bohnsack, a marine biologist with the National Marine Fisheries Service, links the decline to the elimination of large spawning adults. One eight-year-old snapper can produce the same number of eggs as 200 four-year-olds, he said. To protect the big spawners, Bohnsack and other federal researchers recommend that 20 percent of the reef habitat in the region be set aside as no-take zones. This ambitious proposal is already having an impact. The Florida Keys National Marine Sanctuary is developing a management plan that would create three large replenishment reserves and 19 small no-take zones. Hawaii is setting up a similar system for its deep-water grouper and snapper stocks, putting 10-20 percent of their habitat into no-take reserves.

— Wesley Marx

DANIEL W. GOTSHALL

*Recent Coastal Conservancy Actions*

**BUILDING WAYS OUT OF THE DREDGING QUANDARY**

**S**AN FRANCISCO BAY PORTS and regulatory agencies have been struggling for years to find acceptable disposal sites for materials dredged from the bay. Dredging is essential to keep ship lanes navigable, and thousands of jobs are at risk if it is

delayed by controversy. Most dredged materials are still being dumped into the bay, despite concern that this practice may be damaging fisheries and smothering organisms on the bay floor.

If more of the dredged materials could be turned into a resource, as was done in the Sonoma Baylands project (see Autumn 1994 *Coast & Ocean*), widespread benefits would result. In June, therefore, the Coastal Conservancy formed a team to identify and

rized \$200,000 to the City of Novato to study how clean dredged materials might be used to restore wetlands and wildlife habitat at the former Hamilton Air Force Base in Marin County. The City will work with an established team, coordinated by the Conservancy and representing government agencies, environmental organizations, and others interested in wetlands restoration at the decommissioned Hamilton airfield.

Meanwhile, the Sonoma Baylands project is moving ahead, turning a former diked hayfield into a marsh. Later this summer, levees separating the field from the bay will be breached, allowing the tide back in. Clean dredged materials from the Port of Oakland have been used to raise the elevation of the 322-acre marsh site and so accelerate the natural processes that will create wetland habitat for the endangered California clapper rail and salt marsh harvest mouse.

**MONTEREY BAY STATE SEASHORE TO GROW**

**T**HE MONTEREY BAY State Seashore's expansion was advanced in May when the Coastal Conservancy approved \$2.25 million to the Monterey Peninsula Regional Park District to complete the purchase of 614 "paper subdivision" lots in Sand City. The lots, some only 25 feet wide and below the mean high tide line, are in an antiquated 45-acre subdivision that was drawn up before 1920, mostly on dune land. Their purchase for public use and resource protection will be a big step toward linking 990 acres of beach at Fort Ord—soon to become Ford Ord State Beach—with the northernmost portion of Monterey State Beach in the city of Monterey. The Regional Park District, the California Department of Parks and Recreation, and the Big Sur Land Trust have all



PORT OF OAKLAND

The Port of Oakland is barging clean dredged material to Sonoma to speed the restoration of a marsh. A search is under way for more sites where such materials can be used beneficially instead of being dumped into the ocean.

design sites for the beneficial use of dredged sediments, allocating \$770,000 for this undertaking. The site search team represents the Conservancy, the Port of Oakland, the California Environmental Trust, Inc., and the San Francisco Bay Conservation and Development Commission. It will select up to five sites from a list of several dozen previously named and will study them from economic, environmental, and engineering perspectives.

In a related action, the agency autho-

## COASTAL CLIFF CRASH



Homeowners watched helplessly on June 2 as a massive bluff failure took chunks of property down to the shore in Encinitas, San Diego County. Six homes in the 800 block of Neptune Avenue were affected, most severely the house of Leonard Okun, whose den broke off from the rest of the house and slid halfway to the beach.

Above: The bluff yields new sand to the sand-starved beach. Below: Fallen structures and metal rods, which were being pounded into the bluff from above to reinforce it. The crane was there for the job. (See "Neptune Avenue on Edge," Spring 1996 *Coast & Ocean*.)



PHOTOS: VLADIMIR MEDVINSKY

been working to acquire this subdivided land for public enjoyment and resource protection. They have already purchased 271 antiquated lots in this area and are raising funds from varied sources for the remainder. The Park District will repay \$2 million to the Conservancy between 1998 and 2002.

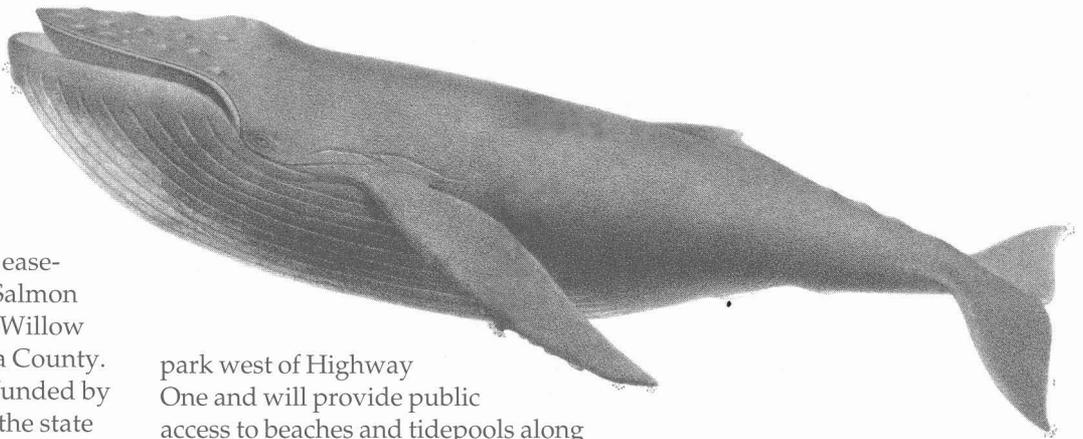
## SAVING MORE SONOMA COAST

**T**O PROTECT FARMLAND, wildlife habitat, and coastal views near Bodega Bay, the Conservancy in May authorized \$518,000 to the Sonoma County Agricultural Preservation and Open Space District and the Sonoma Land Trust. The funds, provided by the 1988 Proposition 70, will help to purchase land and conservation easements in the county. The Conservancy has already spent \$3 million of the Proposition 70 funds available for Sonoma County; this final authorization exhausts the allocation.

With \$150,000, 95 acres will be purchased on the Estero Americano in the Farallones National Marine Sanctuary, along the northern boundary of an area proposed for expansion of the Point Reyes National Seashore. President Clinton recently endorsed the expansion plan, authorizing \$1 million for the purchase of agricultural easements between Olema and Bodega Bay. The Sonoma Land Trust will add \$150,000 toward the cost of this purchase.

Another \$300,000 of the approved funds will be used to acquire conservation easements on 1,570 acres in the Coleman Valley, north of Bodega Bay, protecting agricultural land from development and preserving wildlife habitat and spectacular coastal views along Coleman Valley Road. The Sonoma County Agricultural Preservation and Open Space District has provided \$900,000 toward this same effort.

The remaining \$68,000 will go to the Sonoma Land Trust to study potential



acquisitions of property and easements in the Russian River, Salmon Creek, Coleman Valley, and Willow Creek watersheds of Sonoma County. Future purchases would be funded by the Open Space District and the state Wildlife Conservation Board.

## NEW MENDOCINO PARK LINK

**A** "MISSING PIECE" of Van Damme State Park, south of the town of Mendocino, was secured in March when the Conservancy approved \$2.2 million for purchase of the 162-acre Spring Ranch and improvement of its wildlife habitat. The property will connect two parts of the

park west of Highway One and will provide public access to beaches and tidepools along another half-mile of the coast.

"Anyone who has visited this area of the coast knows how important it is to protect the natural environment and access to the shore for future generations," said Penny Allen, Chair of the Coastal Conservancy. "Purchase of this spectacular property will serve visitors to the Mendocino coast, who are a crucial component of the region's economy."

Acquisition of Spring Ranch has been

a high priority for the California Department of Parks and Recreation for many years. More than 2.5 million people visit state parks along the Mendocino coast each year. The current owners of Spring Ranch graze sheep and grow hay on this land but want to sell. The Coastal Conservancy arranged for an option to purchase the ranch in 1993 from the owners, to ensure its acquisition by the state park system. This option was due to expire in April 1996. The total cost of the property is just below \$2.4 million, of which \$1.5 million will be reimbursed to the Conservancy by the Parks Department during the next four years. The California Transportation Commission will add \$181,000 to meet the purchase cost.

## EVENTS COMING UP THIS AUTUMN

**T**HE NATIONAL WATCHABLE WILDLIFE CONFERENCE will be held November 12-17 in Huntington Beach, CA. Workshops, sessions, and field trips will focus on innovative techniques for developing wildlife viewing programs and facilities. Concurrent sessions will be held on conservation, ecotourism, partnerships, and education. For more, phone 1-800-SAY-OCEAN; FAX (714) 969-5592 for information or registration. Internet: <http://www.gorp.com/wldlife/confnce.htm>

- The California Exotic Pest Plant Council's symposium on invasive non-native plant species and their threat to California's natural ecosystems, October 4-6 in San Diego. Contact Sally Davis, P.O. Box 15575, Sacramento, CA 95852-0575. Phone: (916) 921-5911. E-mail: [sallydavis@aol.com](mailto:sallydavis@aol.com)
- The San Francisco Estuary Project's 3rd Biennial State of the Estuary Conference October 10-12 at the Golden Gate Club in the Presidio of San Francisco. For information, call (510) 286-0460.
- Urban Waterfronts 14, the Annual International Conference on Urban Waterfront Issues, in Boston, Mass., November 13-16. Contact the Waterfront Center, 1536 44th St. NW, Washington, D.C. 20007; Phone (202) 338-6657; FAX (202) 625-1654.
- An Urban Streams Conference will be held November 15-17, 1996, in Arcata, California. This regional event, sponsored by the City of Arcata, will bring together citizens, organizations, planners, government agency staff, engineers, educators, developers, and others working on urban stream issues. For more information, contact the Environmental Services Department, City of Arcata, 736 F St., Arcata, CA 95521, or call (707) 822-8184. E-mail: [creeksconf@aol.com](mailto:creeksconf@aol.com)

## SANTA BARBARA COASTAL PRESERVE

**I**N MARCH, THE CALIFORNIA Resources Agency and Coastal Conservancy joined thousands of Santa Barbara residents who have been chipping in for 20 years toward the purchase of the last coastal nature preserve in the city of Santa Barbara, and have managed to raise over \$2 million.

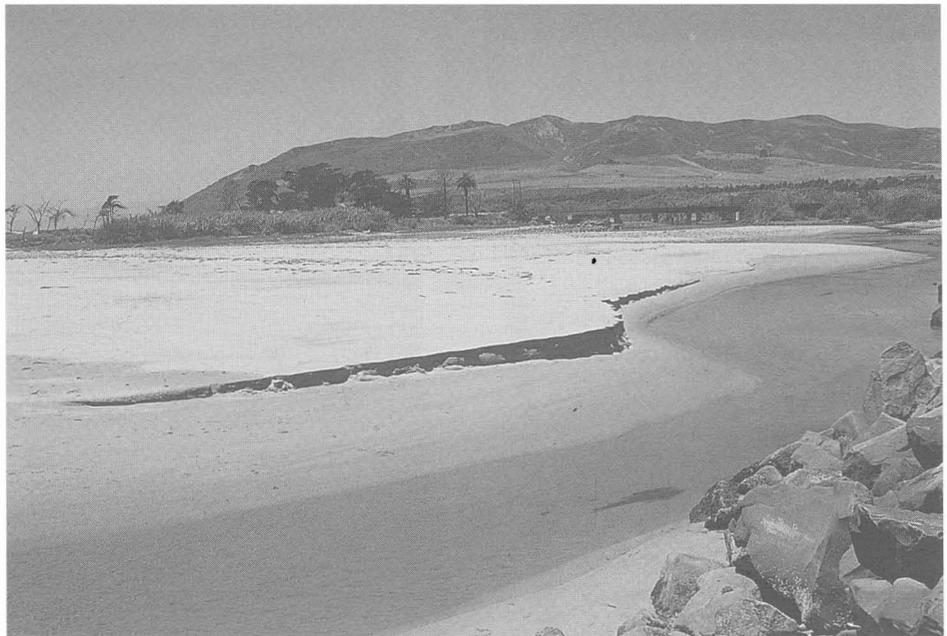


## Grants for Land Trusts

**T**HE TRUST FOR PUBLIC LAND, a national nonprofit land conservation organization, has awarded \$71,000 to 17 land trusts, 15 in California and two in Hawaii, in the first round of a three-round grant program funded by the David and Lucile Packard Foundation. The grants range in size from \$1,400 to \$7,500 and will benefit local nonprofits that work to protect landscapes as diverse as Maui's Hana coast and California's old growth redwood forests. A total of \$200,000 will be disbursed over three grant rounds. October 1, 1996 is the application deadline for the second round. Proposed projects must relate to public education, innovative approaches to land conservation, land stewardship, or building organizational capacity. Revised guidelines and application forms will be available August 1. Call or send a fax to Herb Grench at (415) 321-7995, or leave a message at (415) 495-5660. (Awards in the Coastal Conservancy's grant program will be announced August 22.)

The Coastal Conservancy approved a loan of \$1.5 million to the Trust for Public Land (TPL) to enable it to buy the 69-acre Wilcox Property. The agency also approved \$200,000 for restoring natural resources on the property. A local public agency or nonprofit organization will be designated to carry out this work. TPL will repay the total loan within the next year.

"The Wilcox Property is a spectacular piece of coastal land already enjoyed by the public and important to the natural environment," commented Secretary of Resources Douglas Wheeler. "The peo-



MARK CAPELLI

Two new interpretive trails were built and 1,000 young willows were planted at the mouth of the Ventura River as part of a project by the City of Buenaventura, California State Parks, and the Coastal Conservancy. Exotic plants were replaced by native vegetation. The project's completion was celebrated on June 11.

ple of Santa Barbara have demonstrated their commitment to preserving the property for public use, and I am happy that the state government has found a way to help them out."

Although a few people have donated large sums, most of the \$2.2 million collected in the community has been in small donations.

The property includes part of the canyon and estuary of Arroyo Burro Creek, and 50 acres of blufftop that offers panoramic views of the Santa Barbara Channel, the Channel Islands, and the Santa Ynez Mountains. The purchase will permanently protect the western end of a wildlife corridor that runs inland through the coastal hills.

## MORRO BAY GETS MORE HELP

**A**NOTHER MAJOR STEP in protecting Morro Bay was taken in March when the Coastal Conservancy approved \$500,000 to the Coastal San Luis Resource Conservation District for the restoration of 85 acres of fish and wildlife habitat on Chorro Creek, which flows into the bay. The restored habitat will also trap sediment that would otherwise flow into the bay.

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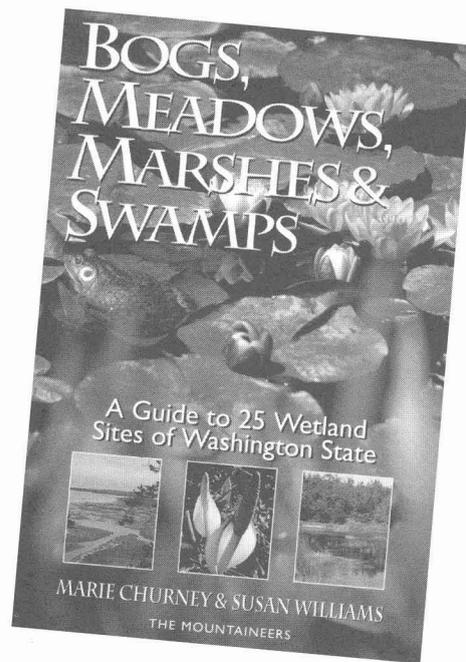
- Each issue contains articles you can use in preparing students to take responsibility for their coast.
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*Bogs, Meadows, Marshes and Swamps: A Guide to 25 Wetland Sites of Washington State*, by Marie Churney and Susan Williams. The Mountaineers Books, Seattle, WA, 1996. 176 pp., \$14.95 (paper).

**W**ETLANDS MAY NOT RANK high on the list of tourist attractions, but there is no less of nature's beauty and life's bounty there than on a spectacular beach or mountain range. In fact, a visit to a marsh or bog may be more rewarding, as the wealth of interaction among plants, animals, and their surroundings may be observed and appreciated with comparatively little distraction by human commerce and clamor. Appropriately, Churney and Williams have provided us with a guide to understanding these often neglected and abused places, with background information and insight into their workings, in addition to the usual practical and descriptive guidebook data. The 25 "walks and paddles" described sound like fascinating fun, and the text as a whole is instructive and of much more than site-



specific interest. More specific seasonal information would be useful, as, for instance, when particular plants will be in bloom. *Bogs, Meadows, Marshes and Swamps* is written in clear and friendly prose, handsomely illustrated with photographs by the authors and drawings by Jim Hays, and can be a tool to deepen our knowledge while exploring these intriguing backwaters.

—Hal Hughes

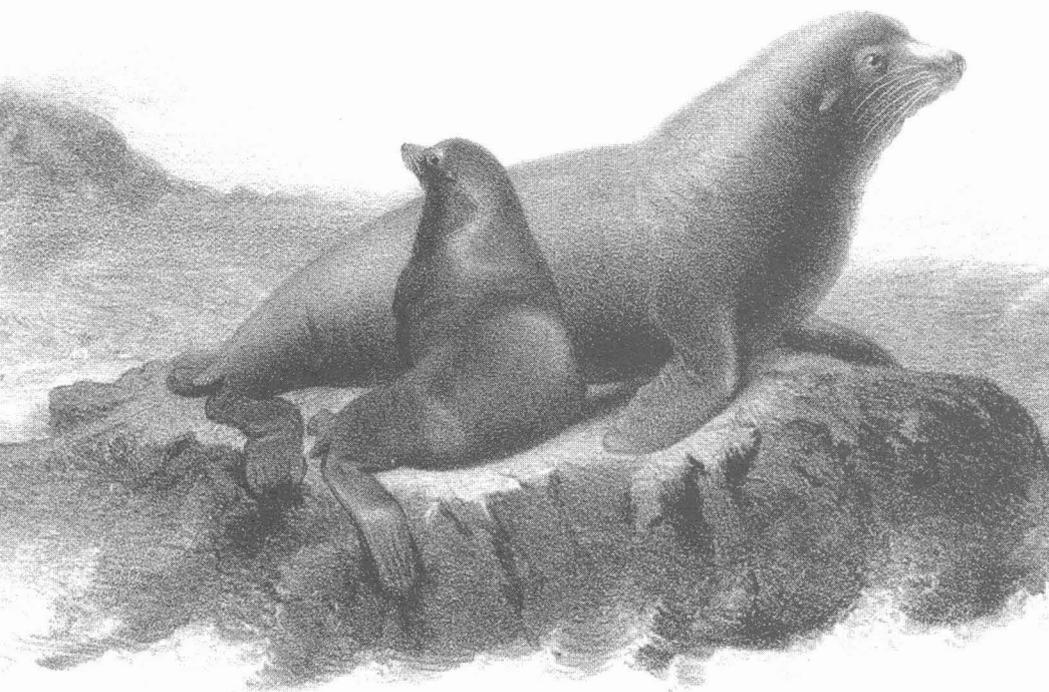
*The 1996 Marine and Coastal Educational Resources Directory for San Francisco and Monterey Bay Areas* is available from the California Coastal Commission. For a copy, call Amy Wiens at (415) 904-5214. A donation of \$3 per copy is requested to help pay for printing costs. The Directory is also on the World Wide Web at <http://bonita/mbnms.nos/noaa/gov>. It is nested in the education section of the Monterey Bay National Marine Sanctuary home page.

*Queen Mary*, by James Steele. Chronicle Books, San Francisco, CA, 1995. 240 pp., \$59.95 (cloth).

"I long to see you leaping to the urge  
Of the great engines, rolling as you  
go,  
Parting the seas in sunder in a surge,  
Shredding a trackway like a mile of  
snow. . . ."  
—John Masefield

**J**OHAN MASEFIELD, THEN POET-laureate of England, wrote these lines about Ship Number 534 when she was about to be launched in Southampton in 1936. By the time she slid off the ways, she was the *Queen Mary*. Almost anyone who sees her moored at Long Beach, where she is now a hotel, feels the same way today. There is something about the *Queen Mary*, especially when seen from a distance, that fires the imagination. Just looking at her sleek lines and elegant proportions takes us off to romantic places and dramatic adventures.

*Queen Mary* by James Steele, a stunning new folio-sized coffee-table book about the Cunard Line's stateliest ship, has the same effect. Like the ship herself, it will awaken nostalgia for the great age of the ocean liners within anyone who loves the sea.



With fine photographs, many in full color, maritime buff Steele, a professor at the University of Southern California, has scrupulously documented the conception, construction, launching, and subsequent history of the ship that was once the world's largest and fastest ocean liner. Tables and fine expository text support the pictures, along with reproductions of posters, menus, baggage tags, and all the ephemera so easily lost by travelers.

For Americans, the *Queen Mary* transcended the utilitarian associations of transatlantic travel. Completed in 1936, she became a symbol of the end of the Great Depression. Her very elegance indicated that "Happy Days Are Here Again." Statesmen, royalty, and celebrities of all nations traveled aboard her. Among them were Winston Churchill, David Windsor and his Duchess Wallace Warfield Simpson, Frank Lloyd Wright, Marlene Dietrich, Noel Coward, David Niven, and Cary Grant. Movie stars not only traveled aboard her, they performed in the many movies made in her elegant salons.

Think of any glamorous motion picture shot of a night club, restaurant, swimming pool, beauty salon, in the art-Deco style of the '30s; it may well have been filmed aboard the *Queen Mary*. One of the dining rooms of this great floating city had a balustrade that changed colors in time with the music played in the room.

Along with many Americans, she went to war, carrying thousands of servicemen to battle on European shores, bringing back the wounded, and later the war brides and their children. Reconditioned after World War II, she continued her life of glamor, reaching a total of 1,002 crossings of the Atlantic.

Although her interior is changed by the vicissitudes of commerce (you can check it against the book), the *Queen Mary's* ambiance is still as evocative as it was when E.B. White wrote in the

*New Yorker*, "I heard the Queen Mary blow one midnight and the sound carried the whole history of departure, longing, and loss. It was a familiar summons to the sea. . . ."

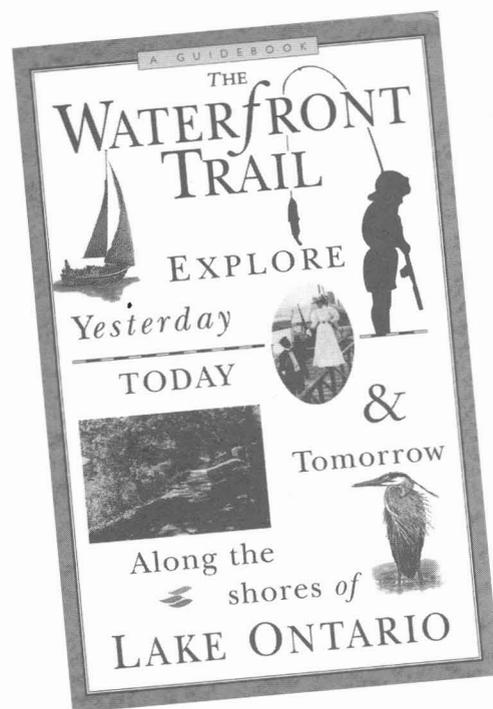
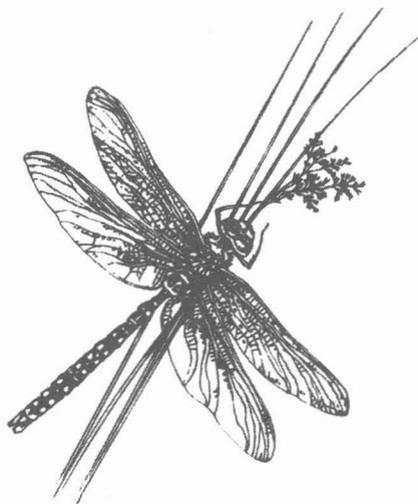
And so is this book.

—Margot Patterson Doss

*The Sea Vegetable Gourmet Cookbook & Wildcrafter's Guide*, by Eleanor and John Lewallen. Mendocino Sea Vegetable Company, Mendocino, CA, 1995. 128 pp., \$19.95.

**T**HIS IS A WONDERFUL, RICH, and comprehensive guide to everything you could possibly want to know about sea vegetables. The book provides a wealth of information on the variety of sea vegetables, how to harvest them, their nutritional and healing properties, and many interesting recipes. The Lewallens' writing about their own life experience as owners of the Mendocino Sea Vegetable Company adds a very personal dimension to this special book. That this is a family that loves this life/work is evidenced by many clearly expressed thoughts, essays, and insights. Although we have used *nori* and *kombu* before, we can't wait to try these new simple and inspiring recipes.

—Gay Reineck



*A Guidebook: The Waterfront Trail*, Sheila Kieran, ed. Waterfront Regeneration Trust, Toronto, Ontario, 1995. 359 pp., \$16.35 U.S., \$19.95 Canadian (paper).

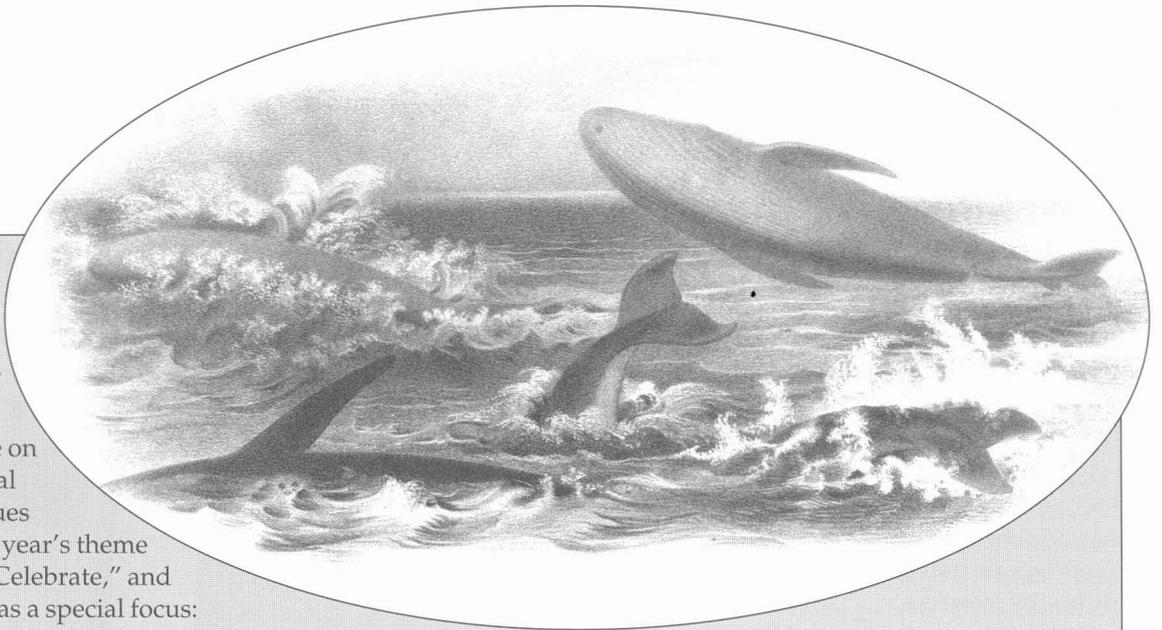
**M**UCH LIKE THE SAN FRANCISCO Bay Trail, the Waterfront Trail on the Canadian shore of Lake Ontario is a powerful symbol of a historic change in attitude toward the waterfront. Some 30 years ago—when many people believed that Lake Erie was dead and Lake Ontario was about to expire (and garbage dumps were burning on the edges of San Francisco Bay)—some citizens refused to accept a fatal diagnosis and began the work of revival. A movement gathered momentum, local and regional governments responded, and in 1988 the federal government established the Royal Commission on the Future of the Toronto Waterfront. The Province of Toronto soon joined in, and the Commission's focus expanded to encompass the entire bioregion.

The Commission both promoted and recorded the new vision. "People told us that they want the Lake Ontario waterfront to be clean, green, accessible, diverse, attractive, connected, open, usable and affordable," writes Commission chairman David Crombie in the introduction to *A Guidebook: The Waterfront Trail*.

## COASTWEEKS

**C**OASTWEEKS, THE annual celebration of shorelines and the ocean, begins nationwide on September 21 with Coastal Cleanup Day and continues through October 14. This year's theme is "Educate-Participate-Celebrate," and each of the three weeks has a special focus: pollution, habitat, and finally, wildlife.

The California Coastal Commission, sponsor of the California Coastweeks in association with the Center for Marine Conservation, invites individuals and organizations to participate by arranging events to take place during this period. These will be listed in a Coastweeks calendar and publicized statewide. Some suggested events: storm drain stenciling, coastal trail hikes, tidepool tours, cleanup and restoration projects, wildlife viewing excursions, and lectures and demonstrations on marine issues. In addition, it is suggested that any regular meetings held during Coastweeks include a coastal component. For information and activity registration forms, contact Amy Wiens at Adopt-A-Beach, 45 Fremont Street, Suite 2000, San Francisco, CA 94105-5400; phone (415) 904-5214; FAX (415) 904-5400.



Accordingly, in 1992 the Commission made a series of recommendations in its beautifully produced final report, *Regeneration*, and the Province established the Waterfront Regeneration Trust to coordinate regeneration efforts and to help build the Waterfront Trail. When complete, the 325-kilometer trail will follow the entire Canadian shoreline of the lake. (On the United States shore, the Seaway Trail is under way.)

The guidebook was published to advance the trail vision, much as was the case with the Coastal Conservancy's *San Francisco Bay Shoreline Guide*. "Understanding that we humans are part of waterfront ecology, not something separate, is fundamental to its regeneration," Crombie points out. Much of the Waterfront Trail runs through urban areas,



but these are interspersed with parkland, nature preserves, and wetlands. The book explores the ongoing relations between the indigenous wildlife of the region and the many strands of human history.

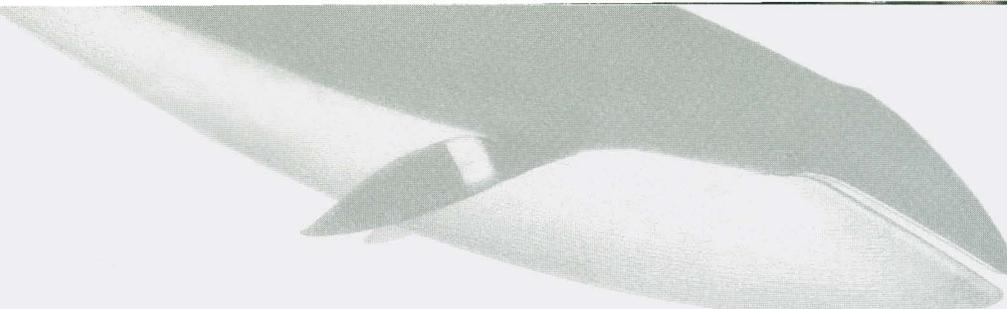
Following the trail from west to east, the text describes features of each area in abundant detail, township by township. It includes recreational facilities, bird migration patterns, scenic vistas, tidbits of local family history, background information for dedicatory plaques, and the meaning of place-names derived from Ojibwa. In the center of the book are 245 pages of color photographs. Trail maps start each chapter. Icons indicate amenities and uses. The people on Lake Ontario are no doubt finding the book to be a rich resource for learning about the places they inhabit. For someone looking in from outside, it's an enticement to visit and explore.

*The Waterfront Regeneration Trust is at 207 Queen's Quay West, Suite 580, Toronto, Ont. M5J 1A2. Phone: (416) 314-8572*

—Hal Hughes

**M**arine Watch, a highly readable, beautifully illustrated new quarterly, focuses on events in, on, and under the ocean. As publisher, editor, and main writer, John Grissim reports on marine activities such as waterspouts, salvaging shipwrecks, iceberg calving, and shark attacks with a hearty mix of scientific research, wit, and the "salt and passion of the ocean." He promises to avoid such "lubberly disputes" as "policy issues, management plans, and resource conservation," while maintaining a "deep concern for the environmental emergency . . . in Earth's oceans." Grissim is a diver, surfer, fisherman, and writer. The first two issues of *Marine Watch* are gripping. Contact Grissim at P.O. Box 810, Point Reyes Station, CA 94956; phone: (415) 663-8700; Fax: (415) 663-8784; or e-mail: [marwatch@nbn.com](mailto:marwatch@nbn.com). There is also a *Marine Watch* website at <http://www.marinewatch.com>.





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