

CALIFORNIA  
**Waterfront Age**

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Winter/Spring 1990

Volume 6, Number 1

## Guidelines for Contributors

*California Waterfront Age* is glad to consider contributions of articles and shorter items related to the California coast, and especially to its waterfronts. We aim to provide a forum for the description and discussion of public programs and private initiatives relating to waterfront restoration and development, coastal resource management, and economic development.

We will consider articles of up to 3,000 words on the following subjects:

1. Economic development, project finance, waterfront restoration, the impact of changing uses.
2. Land-use conflict resolution.
3. Water quality, resource restoration, enhancement.
4. Maritime industries.
5. Tourism, waterfront parks, public access.
6. Environmental education and occupations.
7. Cultural and historical issues.

We will also consider the following shorter features:

**Conferences:** We publish announcements and summaries of waterfront-related conferences.

**Book reviews:** We seek relevant reviews, about 500 words long, of current books and other publications of interest to our readers.

**Essays:** Reflections on themes related to waterfronts are welcome. They can be verbal, photographic, graphic, or in cartoon form.

Interested contributors should call or write the editor. Send self-addressed stamped envelopes with submissions.

## Are you on our mailing list?

To receive *California Waterfront Age*, or for information on the programs or projects of the State Coastal Conservancy, please send a note with your name, organization, address, and affiliation (civic group, government agency, consultant, development/financial, maritime industry, other) to:

California Waterfront Age  
State Coastal Conservancy  
1330 Broadway, Suite 1100  
Oakland, CA 94612

## Survey Results

**Thanks for the strong response to our recent reader survey; it reassured us that what we provide is useful. Thanks for your ideas and suggestions for improvement. We intend to follow up.**

**Some readers tore off the section of the double card with their mailing label. If you asked to be dropped as a subscriber and received this issue, please let us know. One of those anonymous cards might be yours.**

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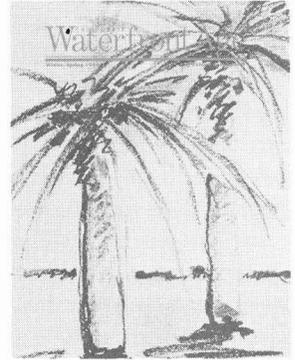
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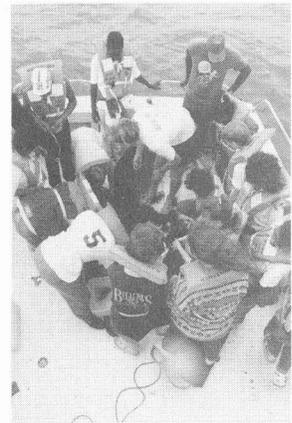


Cover: Palm trees. Painting by Margo Goodwill.



KRISTI FARNHAM

**Weed It and Weep**  
**Controlling California's Flora**  
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COURTESY CHESAPEAKE BAY FOUNDATION

**J**ust as the prospect of defense spending reductions has generated fear as well as excitement and hope of a peace dividend, so the plan to close the San Francisco Presidio has been greeted with both joy and alarm. By Public Law 92-589, which created the Golden Gate National Recreation Area, the Presidio is an integral part of this grand urban park. As the Sixth Army ends its two-century tenure, the National Park Service takes over. What then?

**This is an opportunity to create something new and globally significant on this unique 1,440-acre property. Shall we dare to envision a dream worthy of this priceless inheritance on the Golden Gate? And if we do, how can we make the dream a reality? On Pages 25-32 we focus on the soon-to-begin planning process that will determine the Presidio's future.**



## From the Executive Office

by Peter Grenell

The recent spate of oil spills has once again dramatized our environmental predicament as no speech or study could do, reminding how recklessly we keep courting catastrophe. While each calamity forces attention into the crisis mode, it also invites us to look beyond the specific event to a broader framework for action. Currently on the table are numerous legislative and electoral initiatives focused mostly on controlling or preventing further mishaps, such as accidental releases of economically useful but environmentally toxic liquids and gases. The most notable recent international achievement of this kind is the agreement to phase out chlorofluorocarbons, which have been found to be the main cause of the hole in the ozone layer. Numerous other regulatory remedies have been proposed by environmental champions who have concentrated their efforts on stopping the seemingly inexorable drift toward terminal degradation of the natural environment. Such action may be vitally important but it is not enough.

Environmental protection requires two other kinds of attention: besides seeking regulatory measures, we need to clean up the mess that already exists (this is frequently called restoration); and, we must make new and better technological choices and adopt less consumption-oriented patterns of living. In all three respects, much activity is already under way, as can be seen in Petaluma where schoolchildren are cleaning up a polluted and abused stream, in Irvine and Berkeley where local governments have passed ordinances requiring the recycling of CFCs in car air conditioners, and throughout the state in the several bond act initiatives that propose to spend hundreds of millions of dollars to save wildlife habitat, ancient redwood forests,

and other natural lands. While some individuals and groups work directly to heal the ravages of past rapacity and neglect, thousands of public and private efforts are in the works, seeking to preserve vanishing wilderness and accessible open space. Advocates of public recreation, farming interests, and wildlife habitat protection compete with each other as well as with development pressures for increasingly scarce open lands. Each interest pursues its own agenda, vocal in its advocacy.

All this, however, to a greater or lesser degree, is tantamount to a crisis response. None of this worthwhile activity changes the parameters of our system. No amount of regulation will totally succeed in stopping environmental degradation. There is no way we can undo all the harm done in ignorance to our biospheric life support system. There will never be enough money to buy all the land that "should be saved." Beyond all three kinds of current environmental actions, we need to seek systemic change that will provide incentives for ecologically sensible rather than ecologically destructive behavior. Measures like the proposed gasoline tax can be a step toward such change, providing incentives to people to choose public transit while at the same time raising funds to create and improve public transit. The international phaseout of CFC production, combined with local ordinances, provides an economic incentive for recycling the ever-scarcer and therefore costlier Freon.

Right now, most existing tax incen-

tives and subsidies, as well as other indirect means of leverage, support the kinds of actions that have led to the present environmental dilemma. There is no better example of this than the recent leveraged buyout of an environmentally sensitive logging company (one that successfully practiced the concept of sustained yield) that then requires the clear-cutting of old growth forest—leading to serious injury to a community's natural assets and eventual job dislocation—to generate funds to pay off the debt acquired to accomplish the company's purchase.

If we seek to change course toward a healthy form of progress for our society, humankind, and other life on Earth, we

need to examine the structures that we have created, unwittingly, to encourage us to rush toward species suicide. We have a choice.

The structural change cannot occur overnight. Yet we need to develop a strong commitment to the effort and to

*Gov. George Deukmejian has proclaimed 1990 as the Year of Coastal Appreciation. The Coastal Commission, the Coastal Conservancy, and the Nautical Heritage Society are sponsoring Coastal Awareness days throughout the year. Groups with active, hands-on programs wishing to participate should call the Commission public affairs department at (415) 543-8555.*

evolve—quickly—a coherent and comprehensive basis for policy guidance. As part of this process, we should consider three basic elements: prevention, restoration, and restructuring of the incentive framework. The existing and proposed patchwork of laws, inducements, initiatives, proposals, and programs is not enough to meet the need. By judiciously combining methods of regulation, programmatic action, and incentive—especially incentive—we can achieve the necessary basic shift toward a sustainable economy within a healthy and richly enjoyable environment. □

# Ebb and Flow

## RECENT CONSERVANCY ACTIONS

### New SF Bay Trail Link

The East Bay Regional Park District will buy a privately held 4.4-acre parcel near the city of Martinez in Contra Costa County with \$300,000 authorized by the State Coastal Conservancy in December. This acquisition will enable the Park District to build a pedestrian overpass above the railroad tracks to connect the California Riding and Hiking Trail to Martinez Shoreline Park and the Bay Trail. The Conservancy is committed to working to build the Bay Trail, and has funded 44 other projects so far at a cost of about \$6 million. About 130 miles of the projected 400-mile recreational trail have been completed.

The sloping, wooded parcel, which lies below Carquinez Scenic Drive, will initially be fenced for safety. The walkway will be built after negotiations with the Southern Pacific Transportation Company. The parcel is directly across the road from the Sachhi Staging Area, also partly funded by the Conservancy and now under construction, which provides parking and other facilities for riders and hikers along trails heading inland.

### Sonoma Baylands Enhancement

The Sonoma Land Trust will acquire and enhance 830 acres of diked historic bayland straddling the intersection of Lakeville Highway and Highway 37 along the San Pablo Bay shoreline with \$1.9 million approved by the Conservancy in January. The property is currently used for hay production. It is valued at \$2.5 million, but the Sonoma Land Trust holds an option to buy it at \$1.5 million. The remainder of the approved funds will finance detailed engineering studies of soils and environ-

ment, engineering designs and drawings, permit applications, and property and project management.

Funds for the acquisition were provided by Proposition 70 in 1988. This voter-initiated bond act specified \$4 million for acquisition of wetlands and natural lands in Sonoma County. This purchase will protect a major wetland area on the San Pablo Bay shoreline. A public access trail is also planned

vital recreational resource. In recent years, however, rapid sedimentation has threatened all these and many other activities on and around the bay.

In 1987, the Conservancy provided funds to the resource conservation district to study and develop actions to slow the rate of sedimentation. The study verified that 25 percent of the bay's open water was lost in the last century. The enhancement plan recommends specific



RICHARD RETECKI

A walkway will be built on Alcatraz Island.

through the site, to become part of the Bay Trail system.

### Morro Bay Watershed Plan

The Coastal San Luis Resource Conservation District will implement the first phase of the Morro Bay Watershed Enhancement Plan with the help of \$410,000 authorized by the Coastal Conservancy in January. The bay's 2,500 acres of wetlands and open water provide habitat for many fish and much wildlife and serve as a major stopover point for migratory birds on the Pacific Flyway. The bay also supports shellfish farming, sport and commercial fishing, and a major PG&E facility. It is also a

actions to extend the life of the bay by reducing sediment deposition by about 47 percent a year.

During the plan's first phase, the district will work with willing landowners to control erosion at its source by stabilizing stream beds, repairing gullies, erecting fences, and by other management methods. Future phases of the plan may involve land acquisition, creation of sediment-trapping sites, and wetland restoration.

### San Joaquin Marsh Plan

The city of Irvine will prepare a resource enhancement plan for the San Joaquin Freshwater Marsh with the help of up to

\$50,000 authorized by the Conservancy in December. The entire 580-acre marsh system will be studied and a thorough analysis made of natural resources and operations. The plan will recommend restoration and enhancement projects, identify strategies to minimize development impacts on the fringes, and recommend public access and interpretive improvements. The city will coordinate the plan with active participation by the University of California; federal, state, and local entities; and citizens.

### **Vandenberg Wildlife Pond Enhancement Plan**

Until 1979, six ponds along the Santa Ynez River on Vandenberg Air Force Base attracted thousands of waterfowl during their annual migration along the Pacific Flyway. The Air Force maintained water levels with treated wastewater from the base sewage treatment plant. But then the plant was abandoned and the ponds dried up. Now, in a collaborative project, this habitat will be restored. La Purisima Audubon Society has worked with the Air Force to develop the Vandenberg Wildlife Ponds Enhancement Plan. In September, the Conservancy approved this plan and authorized up to \$195,000 to help in its implementation, restoring 17 acres of wetland habitat. The funds will be used, along with contributions from Vandenberg, to install wells and pumps that will supply water to the ponds, to line the ponds with clay to decrease water loss, and to provide food for waterfowl. When the project is complete, the Audubon Society will lead public tours of the ponds, and the base will manage and maintain them.

### **ITT Marsh Enhancement**

Up to \$1.2 million has been authorized to the city of Palo Alto for enhancement of

## **Locke Paddon Park Dedicated in Marina**

One of the last coastal freshwater marshes in the Monterey Bay region is protected in the 17-acre park at Reservation Road and Del Monte Avenue, dedicated by the city of Marina March 10. Locke Paddon Park (formerly KIDD Pond) provides both wetland protection and public access. It includes a recreation trail, floating walkway, exercise apparatus, picnic tables, and restrooms. This joint project by the city and Monterey Peninsula Regional Park District, with financial assistance by the Coastal Conservancy, will serve a diverse population.

PETER GRENNELL



the 100-acre ITT Marsh on the southwestern shore of San Francisco Bay by using tertiary treated effluent and bay salt water. The Environmental Protection Agency's San Francisco Estuary Project will contribute \$180,000 to the effort, which will improve habitat for migratory birds and the resident Salt Marsh Harvest mouse.

### **Millbrae Bayfront Park**

The city of Millbrae will construct a new bayfront park and another link in the San Francisco Bay Trail with the help of up to \$86,500 authorized by the Conservancy. The four-acre site, on San Francisco Airport property just south of the runways, will be leased through a permit for \$1 a year. The city has pledged \$86,500 to cover one-third of the site development costs. Westin Hotels will contribute an equal amount because one of its hotels is across the road and will therefore benefit. The hotel firm has also offered to assist the city with maintenance. The park is expected to be finished by the end of the year and to be popular for watching planes taking off and landing, for bay viewing, picnicking, and bird watching.

### **Alcatraz Island Access Trail**

Though about a million people visit Alcatraz Island each year, there is no public trail around the island. The Golden Gate National Park Association received \$300,000 from the Conservancy in September to build a 0.75-mile walkway, including paved promenade, support walls, and rest areas. The project will open areas now closed to the public, and provide spectacular views. Future phases of the perimeter trail are being planned.

### **Gorda Restoration Plan**

In southern Big Sur, 50 miles south of Carmel, Monterey County, the public will gain access to a scenic spot and some peregrine falcon eyries will be protected through the Gorda Restoration Plan, approved in December. The Conservancy approved up to \$237,500 to acquire about 24 acres between Highway 1 and the ocean, and up to \$55,000 for preparation of detailed plans for improvement and restoration. The site includes a four-acre graded terrace along the highway,

*Continued on Page 48*

# Conference Log

ERICK MIKITEN

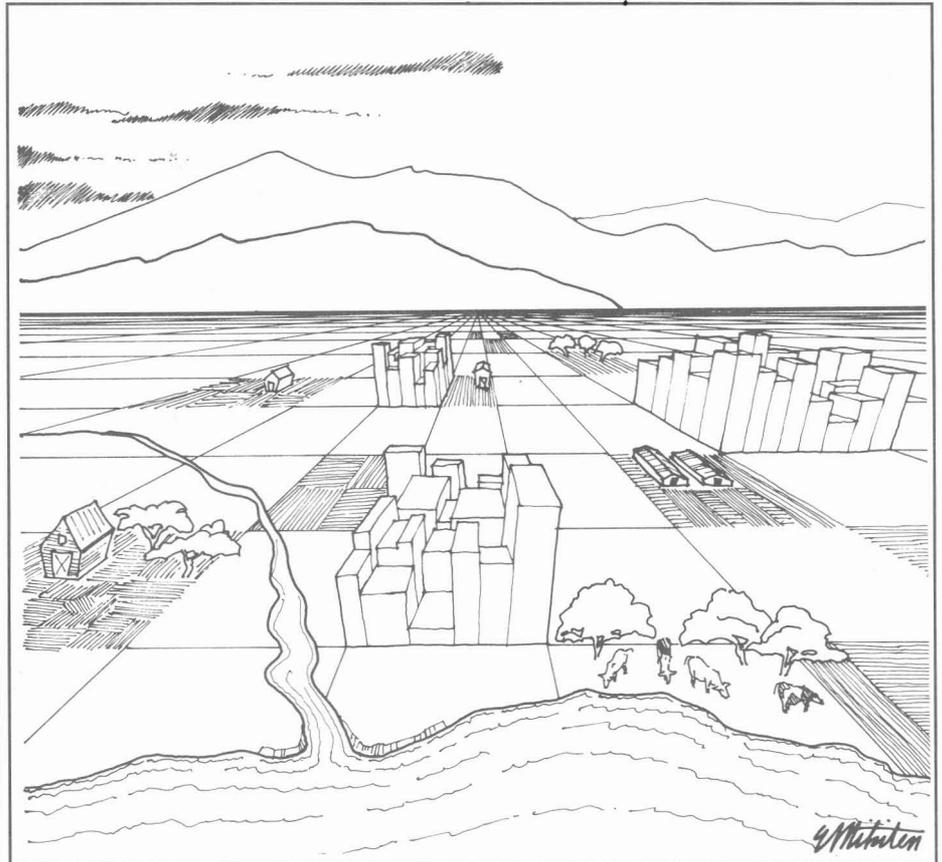
## Cultivating Options for California Farmlands

The problem of farmland conversion in California is enormous, with 100,000 acres of farm and range land being lost each year. Encroachment of urban uses into agricultural areas results in much of this conversion and in additional costs to the farmer, from 5 percent to 50 percent more for producing crops and livestock.

"Cultivating Options" to deal with increasing urban growth pressures on California's central coast farm land was the topic of a symposium attended by more than 150 people in San Luis Obispo on November 8, 1989.

Speakers and attendees included ranchers and farmers, professors of agriculture and economics, representatives from resource conservation districts, the American Farmland Trust, land trusts, farm bureaus, county supervisors, the California Department of Conservation, State Coastal Conservancy, and U. S. Department of Agriculture Soil Conservation Service, among others. Speakers' comments focused on identifying the causes, trends, and impacts of urban growth on farms in its path; state, local, and federal legal and policy options available for farmland protection; and options for dealing with growth in the 1990s.

Keynote speaker Gary Patton, chairman of the Santa Cruz County Board of Supervisors, stressed the need to save California's "Garden of Eden" by taking government action to buy land (as the American Farmland Trust and State Coastal Conservancy are doing), and to regulate, control, and slow down land development and economic growth. Both Supervisor Patton and UC Riverside Cooperative Extension economist William Wood emphasized that agricultural conservation efforts must be



coordinated with a commitment toward providing and protecting affordable housing.

The Williamson Act is still considered the foundation block for nearly all farmland preservation in California. Other methods available to assist in farmland preservation include general plan policies and minimum parcel sizes for agricultural designations, backed up by strong zoning; actions by Local Agency Formation Commissions, which can restrict annexations of agricultural land; and environmental impact reports, which identify agricultural conversions as projects having significant environmental impacts. Incentives which can be used to offset high production costs on lands near urban areas include switching to more intensive crops, direct marketing, using farm land for other compatible

uses such as fishing and hunting, and allowing partial development of farmland property.

The farmland preservation method that was cited as the only significant alternative for farmers is the compensatory farmland protection program, used by eight states, 15 local governments, and by numerous land trusts. It involves the purchase of development rights (ranging from 5 percent to 75 percent of the total land value) over agricultural land. The farmers retain the fee title and are enabled to continue farming their land while having a reduced tax liability. The sale of development rights also provides the farmer with money to reduce debt or reinvest into farming operations. A major drawback is the limited availability of funds.

Existing programs of this kind are

funded by Mello Roos assessment districts, by selling revenue bonds, or by private contributions. The State Coastal Conservancy is the only state agency purchasing development rights, but its funds are extremely limited. AB 655 (Jones bill) would make funds available for the purchase of development rights on agricultural property; however, the bill's future is uncertain given the huge sums proposed for expenditure in other programs.

In addition to the numerous public and private sponsors of "Cultivating Options," the Central Coast Resource Conservation and Development Council and the California Rural Development Committee were the primary symposium organizers. Copies of the symposium proceedings can be obtained at cost from the State Coastal Conservancy, 1330 Broadway, Suite 1100, Oakland, CA 94612. (415) 464-1015.

### **"No Net Loss" A Slippery Goal for Wetlands**

"No net loss" has been adopted as a goal in wetland management in most states and is embodied in several recent legislative and policy initiatives reported at two workshops held in November 1989, under sponsorship of the Association of State Wetland Managers, in New Hampshire and Washington, DC. Discussion at the workshops showed, however, that the concept is ill-defined and open to a lot of interpretation. Environmentalists tend to define it to mean that if wetland acreage or habitat values are destroyed, they would be fully compensated for, in every instance; development interests tend toward a looser interpretation as "no overall net loss," not requiring specific compensation in every case. Thus, there is likely to be no less ambiguity in implementing "no net loss" policy than in implement-

ing requirements for mitigation.

Virtually every one of the 35 states represented at the workshops reported action toward achieving the no net loss goal. Illinois, Maryland, and Oregon have passed legislation, New Jersey has incorporated the goal into its coastal wetland program, and Washington's governor has established a wetland task force to consider the goal and mechanisms for its implementation.

States will have to work toward the popular goal without as much federal support as had seemed likely last November, when the Environmental Protection Agency and the Army Corps of Engineers reached a landmark Memorandum of Agreement (MOA) on a uniform wetland mitigation standard many felt was crucial to achieving the net loss goal. Although President Bush has endorsed the goal and recently directed the Domestic Policy Council to implement it, in early February of this year he dramatically weakened the MOA, which affirmed the basic policy of "sequencing": that adverse impacts to wetlands must be first avoided, then minimized, and only as a last resort, compensated for through the restoration or creation of similar habitats. Before the MOA, the Corps did not apply this standard nationwide, and mitigation requirements varied widely from region to region. Industry representatives—primarily Alaskan oil and gas development interests—reacted strongly to the agreement and applied pressure to the White House to respond to their concerns. As modified by President Bush, the agreement now contains exceptions for areas where the environmental impact will be "minimal"; where hydro-

logic factors make wetland restoration difficult; and where wetlands make up most of the land area. These changes are expected to be especially detrimental to efforts to protect wetlands in Alaska.

At the two wetland managers' workshops, "No Net Loss: Issues and Options for the States," and "Translating the No Net Loss Concept into Regulatory Policies," there was much discussion about exemptions in regulations (both activity exemptions and wetland type/size exemptions), and of the role of wetland restoration and creation in achieving the no net loss goal. Participants reached these overall conclusions and recommendations:



- *The no overall net loss goal stated by the National Wetlands Policy Forum is, in general, a satisfactory goal for planning and policy-setting and other purposes, but needs to be more clearly stated with qualifications (where necessary) for regulatory purposes.*

• *The no overall net loss goal should be interpreted as a uniform philosophy for application to all landowners (public and private): If you damage or destroy a wetland, you must replace it or compensate for the damage or loss.*

• *The same level of financial burden related to the specific damage or destruction caused by their activities should (in general) be placed on both public and private landowners. If the burdens on landowners (public or private) are not essentially the same for offsite as onsite and for out-of-kind as in-kind compensation, landowners will (in general) seek to compensate off-site and out-of-kind.*

• *In defining the no overall net loss goal or the processes by which it is to be achieved, wetland avoidance should be stressed first,*

*Continued on Page 50*

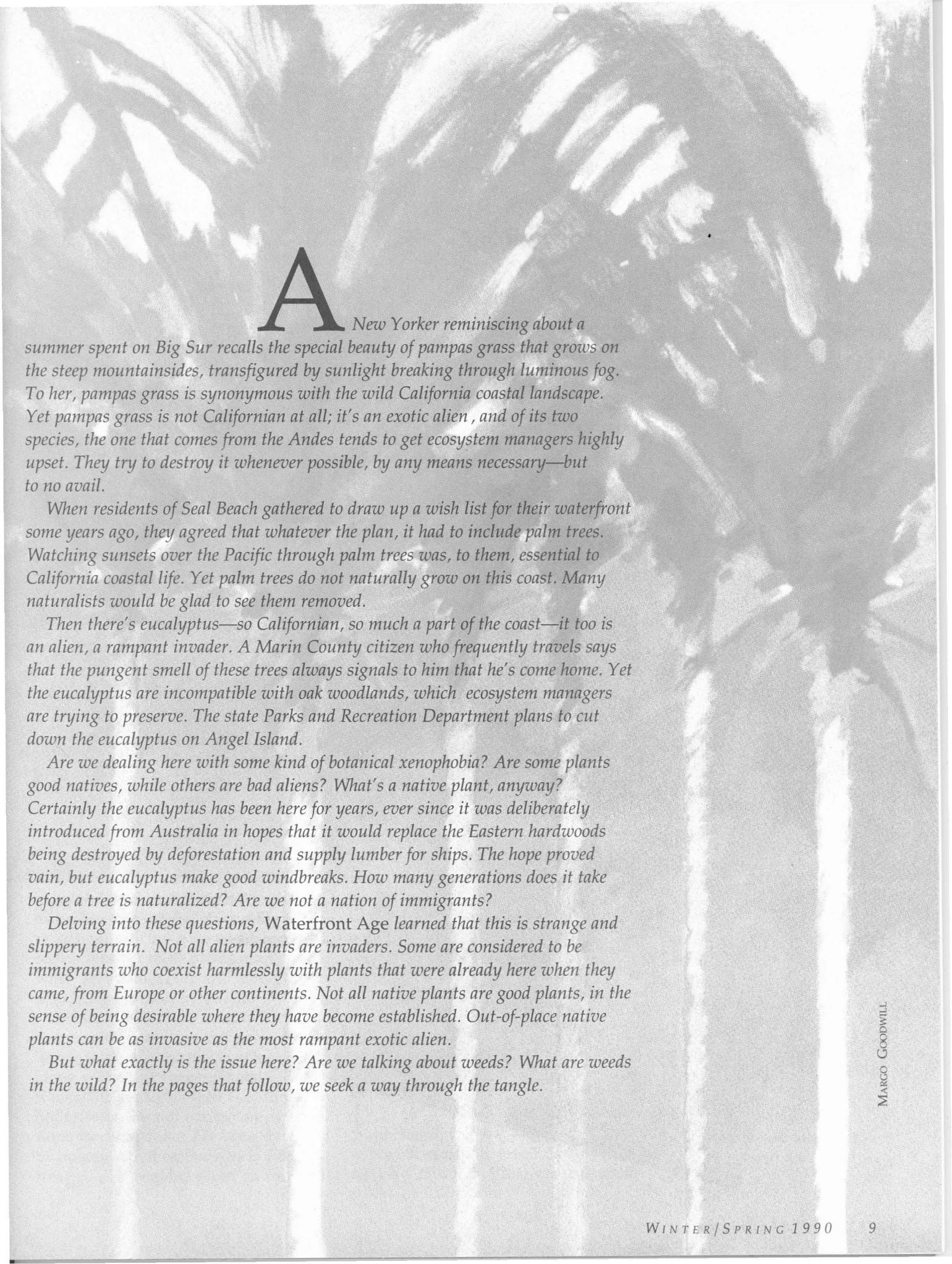
# *Plant Wars!*

**INDIGENOUS OR EXOTIC,  
RAMPANT OR ENDANGERED,  
THE GREENERY OF THE  
GOLDEN STATE IS UNDER  
ATTACK. WHAT PLANTS  
SHALL WE WELCOME WITHIN  
OUR LANDSCAPES? CAN WE  
RESTORE BOTANICAL ORDER?  
SHOULD WE TRY?**

**“The weeds  
in a city lot  
convey the  
same lesson  
as the  
redwoods.”**

**Aldo  
Leopold**





A

*New Yorker reminiscing about a summer spent on Big Sur recalls the special beauty of pampas grass that grows on the steep mountainsides, transfigured by sunlight breaking through luminous fog. To her, pampas grass is synonymous with the wild California coastal landscape. Yet pampas grass is not Californian at all; it's an exotic alien, and of its two species, the one that comes from the Andes tends to get ecosystem managers highly upset. They try to destroy it whenever possible, by any means necessary—but to no avail.*

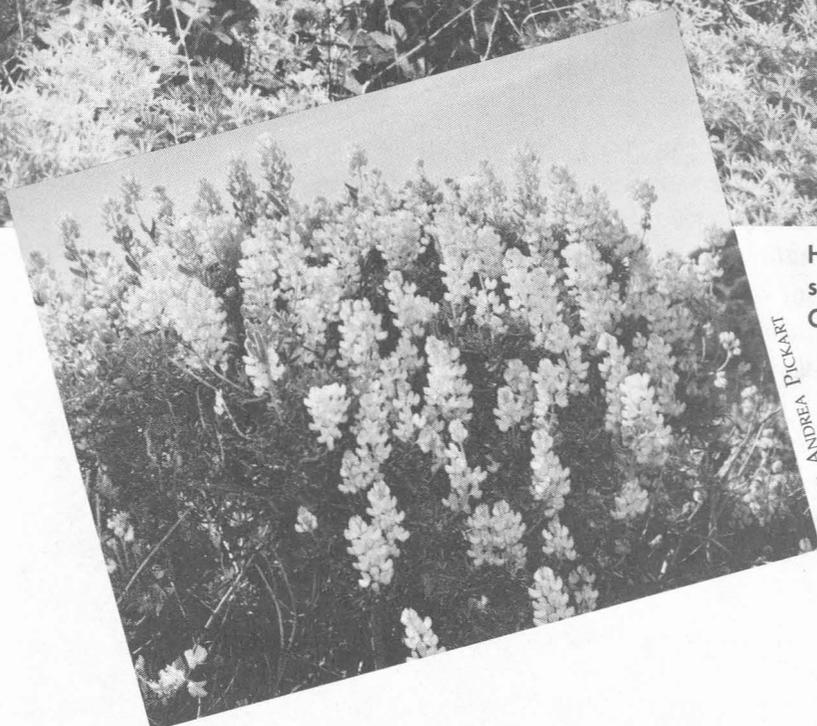
*When residents of Seal Beach gathered to draw up a wish list for their waterfront some years ago, they agreed that whatever the plan, it had to include palm trees. Watching sunsets over the Pacific through palm trees was, to them, essential to California coastal life. Yet palm trees do not naturally grow on this coast. Many naturalists would be glad to see them removed.*

*Then there's eucalyptus—so Californian, so much a part of the coast—it too is an alien, a rampant invader. A Marin County citizen who frequently travels says that the pungent smell of these trees always signals to him that he's come home. Yet the eucalyptus are incompatible with oak woodlands, which ecosystem managers are trying to preserve. The state Parks and Recreation Department plans to cut down the eucalyptus on Angel Island.*

*Are we dealing here with some kind of botanical xenophobia? Are some plants good natives, while others are bad aliens? What's a native plant, anyway? Certainly the eucalyptus has been here for years, ever since it was deliberately introduced from Australia in hopes that it would replace the Eastern hardwoods being destroyed by deforestation and supply lumber for ships. The hope proved vain, but eucalyptus make good windbreaks. How many generations does it take before a tree is naturalized? Are we not a nation of immigrants?*

*Delving into these questions, Waterfront Age learned that this is strange and slippery terrain. Not all alien plants are invaders. Some are considered to be immigrants who coexist harmlessly with plants that were already here when they came, from Europe or other continents. Not all native plants are good plants, in the sense of being desirable where they have become established. Out-of-place native plants can be as invasive as the most rampant exotic alien.*

*But what exactly is the issue here? Are we talking about weeds? What are weeds in the wild? In the pages that follow, we seek a way through the tangle.*



Harry Leland, Pulaski in hand, takes aim at a stand of yellow bush lupine at the Lanphere-Christensen dunes.

PHOTOS: ANDREA PICKART

# Aliens, Invaders and Exotics

by **Andrea Pickart**  
and **Julie Goodnight**

Every February the Nature Conservancy holds its annual "Lupine Bash" at the Lanphere-Christensen Dunes Preserve in Humboldt County. Normally placid plant lovers wield axes and Pulaskis (tools with an ax blade on one side and pickax or chisel on the other) as they search out and destroy every yellow bush lupine they see, down to the last seedling. They conclude with a ritual bonfire of lupine remains, hoping to see no more of these plants until spring, when yet another crop will emerge from seed lying dormant in the soil.

In Monterey County, meanwhile, dune restorationists nurture this same yellow lupine (*Lupinus arboreus*) in greenhouses, along with other native plants, and then transplant seedlings into the dunes. In both efforts, the aim is to restore a natural dune landscape that has been damaged by human activities. But why is this plant treated as a noxious weed in one pro-

TECTED coastal dune system and as a valuable native species in the other?

The simple answer is that in Humboldt County yellow bush lupine is an invader threatening a fragile plant community that includes the endangered Menzies' wallflower (*Erysimum menziessi*) and beach layia (*Layia carnosa*). In Monterey County it is part of the dune ecosystem, coexisting with other long-established plants. The behavior of restorationists toward this lupine in the two dune systems is only paradoxical if one assumes that any plant identified as a "California native" is ecologically desirable wherever it has taken hold. The paradox disappears if plants are considered in the context of ecosystems.

The word "native"—the opposite of which, in common usage, is "exotic"—carries a mystique. "Natives" are some-

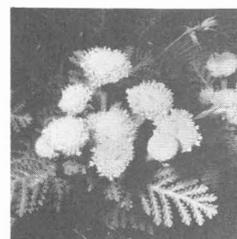


Ed Ross

"This one has given all brooms a bad name," according to Sunset's *New Western Garden Book*, spreading "like weed over thousands of acres of open land in Northern California." But to many people *Cytisus scoparius* is pretty when it blooms.



ANDREA PICKART



Ed Ross

Menzies' wallflower (upper) and dune tansy (lower) are endangered.

(Upper) The description of iceplant in *Sunset's New Western Garden Book* gives the problem in a nutshell: "Coarse-leafed, trailing plants useful for covering sunny banks, in binding loose sand at beach, for covering seldom watered marginal areas. Not affected by diseases, insects or smog—even fairly resistant to fires."

(Lower) The natural dunescape at the Lanphere-Christensen preserve, dominated by beach strawberry and beach bluegrass. No lupine.



KRISTI FARNHAM

how good, others inferior or bad. Yet the native/non-native distinction is not useful as a basis for ecological management. What matters to preserve managers is not whether particular plants are "native," but whether they are detrimental to the ecosystem being protected. "Exotic" plants that do not disturb the existing plant community can be tolerated. Only detrimental species need be removed.

The term "native," though widely used, is so problematic that even the California Native Plant Society has no precise definition. Traditionally it has been applied to any species present in the area that would become California before the year 1769, when Junipero Serra arrived. More than 88 percent of the 5,720 vascular plant species in the state are natives by that definition. The remaining 654 are non-natives or exotics. The 1769 date, however, has no ecological meaning since inhabitants of this continent introduced species to new regions before the Spanish arrived. The term "pre-settlement," used by some ecologists, is an improvement, but as the case of the lupine shows, does not solve the problem.

Yellow bush lupine is a "native," that is, "pre-settlement" species. Its historic range was from the Sacramento Valley

south to San Diego. It was not present in Humboldt County, however, until it was introduced in 1908 at a Coast Guard fog signal station on the North Spit. In its historic range, which includes the Monterey dunes, the plant is a constituent of the Central Dune Scrub community and coexists with other woody and herbaceous native species, including the purple bush lupine (*Lupinus chamissonis*). In Humboldt County no scrub community exists. A community of herbaceous, prostrate perennials known as Northern foredune exerts a tenuous hold on dunes, having adapted to the shifting sands and harsh weather conditions.

The tall, shrubby lupine, brought from the San Francisco Presidio to stabilize dunes, has a competitive advantage over the Northern foredune species in that its roots have nitrogen-fixing bacteria and can penetrate deeply to water that is inaccessible to other plants. Its presence alters the dune environment, thus allowing other detrimental plants to establish, particularly grasses that contribute large amounts of organic matter. The resulting elevated levels of nitrate, ammonium, and organic debris drastically change the soil chemistry and begin to eliminate the pre-existing plants. While the lupine of Humboldt

County is not an "exotic" species, having pre-colonial credentials, it is clearly invasive.

To consider what plants are detrimental to an ecosystem, "invasiveness" is a key criterion. A "biological invasion" is a process through which a plant (or animal) species enters an intact ecosystem and, through competitive displacement, dominates the flora, leading to a loss of diversity and even to extinction of species or communities.

A common misnomer for an invading plant is a "weed," more correctly defined as a plant pest of agriculture and other managed ecosystems. Another term is "alien," applied to species that come into

ANDREA PICKART



an area from other geographical regions and are economically or aesthetically undesirable. Both terms are anthropic and give little consideration to ecosystems. In 1956 W.T. Stearn described weeds as "not so much a botanical as a human psychological category . . . a weed is simply a plant which in a particular place at a particular time arouses human dislike . . ." (Most lawn and garden tenders will understand.)

More appropriate to ecosystem managers are the following definitions, evolved by scientists to reflect the dynamics of ecosystems:

**Colonizers** Species that enter unoccupied or sparsely occupied habitats.

**Immigrants** Species that do not displace or markedly depress resident populations and become integrated into the communities they enter.

**Invaders** Species that enter relatively intact vegetation and strongly dominate or displace it.

Immigrants generally do not present a threat to existing ecosystems, so management should focus on colonizers in cases where the habitat is naturally disturbed and the vegetation sparse (such as river banks and sand dunes) and on invaders in more stable systems. For the purpose of this discussion, colonizers will be combined with invaders.

Although there are many invasive species, they generally have similar characteristics that allow them to spread and reproduce quickly. Invaders can germinate in varied environments. They continually produce long-lived seeds which are easily dispersed. They grow and spread rapidly and adapt easily to changing conditions.

Ecosystems become susceptible to invasions when there are openings in plant cover, generally associated with disturbance. Almost every existing habitat on the California coast has been disturbed in some fashion, so invasions are occurring more rapidly now than they did in the past.

More significant than the mere presence of an invading species are the environmental repercussions that its arrival

## The Animal Menace

**F**eral and introduced wild animals can do enormous damage to protected species and ecosystems. Escapees from fox farms have been eating the eggs of clapper rails in coastal marshes. Burros left by miners in Death Valley are destroying sparse desert vegetation, the food supply of bighorn sheep. Swans and liberated domestic ducks compete with wild water bird communities in Orange and Santa Barbara counties.

The most alarming of the feral invaders wreaking havoc on landscapes, however, are the pigs, tusked creatures that are either domestic pigs gone wild or wild boar introduced to be hunted for sport, or a mix. They "rototill" hillsides and meadows as they root for bulbs,

exposing the soil to more rapid erosion. They foul streams by wallowing in them and damage oak woodlands by eating the acorns. Though acorns are their favorite food, they will eat just about anything—roots, lizards, snakes. They also destroy agricultural crops and can be dangerous to pets and humans.

Running in packs, these omnivorous animals have been spreading rapidly in California and are now estimated to number around 100,000—three times as many as ten years ago. They are a problem in 33 counties, especially between Mendocino and Santa Barbara counties. The population can double in a single year.

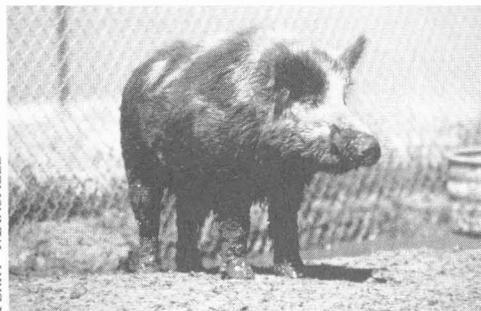
Since 1957, pigs have been a game species in this state, and for that purpose they are protected. Except under special circumstances, hunters may take only one pig per day and have one in their possession. Some ecosystem managers favor removing the pigs, except from special hunting preserves. A biologist in the California Department of Fish and Game, however, believes that they can be controlled, in most places, by hunting. "There is no need to declare them vermin or non-game," he said.

In the summer issue, we will report more fully on invading animals and ecosystem management.

CALIF. DEPT. OF FISH AND GAME



TERRY MANSFIELD





**Traditionally, the term "native" has been applied to any species present in California before 1769, when Junipero Serra arrived. . . . The 1769 date, however, has no ecological meaning since inhabitants of this continent introduced species to new regions before the Spanish arrived.**

brings. While immigrants can be introduced into an ecosystem with little effect, invaders by definition dominate or displace existing vegetation. They can radically alter soil chemistry, hydrology, and biological activities, so that the original plant species can no longer survive.

The Hottentot fig (*Carpobrotus edulis*), introduced to California from South Africa, aggressively eliminates competitors and hinders their return by concentrating salts in the soil. Tamarisk (*Tamarix ramosissima*), drastically affects ground water. In the 1940s, tamarisk invaded the riparian area around Eagle Borax Spring in Death Valley National Monument. Its deep roots and rapid rate of transpiration drained the spring in less than 30 years, eliminating the native flora and fauna. When the trees were removed, the spring reappeared. At the Nature Conservancy's Coachella Valley Preserve, over 15 acres of tamarisk have been successfully removed during the past four years. With periodic maintenance, this is proving sufficient for the return of willows and other native species.

In the case of the yellow bush lupine, the plant's deep tap root and the nitrogen-fixing bacteria that live in the root nodules are excellent adaptations to the dry, nutrient-poor sand environment. As the lupine spreads, changing the dune environment, secondary invaders arrive, easily outcompeting the foredune species that survived by tolerating severe drought and low nutrient levels. Soon the dunes become covered with vegetation that holds the sand securely in place. A once unstable system has been stabilized. The plants that had adapted to shifting sands can no longer survive, and soon the entire ecosystem is disrupted. By this time, mere lupine bashing will not return the community to its original state. Restoration involves complex protocols to lower soil nutrients and carries a hefty price tag.

Clearly, invaders disrupt ecosystems. If the system is to be protected, land managers need to control invaders, whatever their origin. Doing so has led to some controversy because some plants need to be destroyed, including native plants that are aesthetically pleasing, like yellow bush lupine. It may be difficult to detect when an ecosystem has been disrupted, since many subtle ecosystem characteristics, such as soil chemistry, are poorly understood. The most recognizable symptom of ecosystem disruption is displacement of species. At a minimum, this is a criterion that justifies control.

It may be argued that this approach is a further case of interference and manipulation of nature. Are we excluding the natural processes of colonization and succession in favor of preserving "museums" of ecosystems, which can be both expensive and labor-intensive? This question must be considered in the context of the vast human disturbance of habitats and species, some to the point of extinction. The arguments used for protecting endangered species apply equally well to preserving ecosystems. We have a responsibility for protecting what is left, both from a moral standpoint and for the potential scientific and aesthetic values species and ecosystems may offer.

To preserve species, genetic diversity, and overall resources on both a local and a global scale, the ecosystem must be preserved. Whether or not this is considered manipulation, the end justifies the means, and controlling invasive species is a critical first step. □

*Andrea Pickart is manager of the Nature Conservancy's Lanphere-Christiansen Dunes Preserve. Julie Goodnight is an intern at the State Coastal Conservancy.*

## Those Troublesome, Clever, Fascinating Weeds

Invader species are to natural ecosystem managers what weeds are to farmers and gardeners—pesky plants that disrupt a carefully nurtured order. Much of what is known about invasive plants comes from the study of weeds. Invader species are often weedy species. But what is a weed? Ask ten botanists and you may get ten different answers.

"Unfortunately no clear-cut definition can be given," writes F.H. Montgomery, in *Weeds of the Northern*

*United States and*

*Canada*. "Definitions of a weed are almost as numerous as the authors of papers dealing with them,"

Herbert G. Baker has found. To him, "The most satisfying definition is that a plant is a weed if, in any specified geographical area, its populations grow entirely or predominantly in situations markedly disturbed by man (without, of course, being deliberately cultivated plants)."

From most definitions, it is clear that the term describes not a botanical category, but a construct that reflects human values and is related to human activities. Take this one, from *Webster's Second Unabridged Dictionary*: "any plant growing in ground that is or has been in cultivation, usually to the detriment of a crop, or to the disfigurement of the place; an economically useless plant or one of unsightly appearance, especially one of wild or rank growth."

In *Weed Ecology: Implications for Vegetation Management*, Steven R. Radosevich and Jodie S. Holt explain that "Weeds are plants growing where they are not desired." This definition, they point out, "by its very nature imparts a

human value to the idea of weediness."

Weeds are "somewhat like the criminal element in human society," Radosevich and Holt note. They have "competitive and aggressive habits," are "useless, unwanted, and undesirable," and "harmful to man, animals, and crops." King found these qualities among ten most frequently listed in weed descriptions. They are plants held in contempt, as can be seen in some of the common names assigned to them: devil

weed, cursed crowfoot, cheatgrass.

Often the value of a weed is determined simply by how the viewer perceives it. The California poppy, the state's flower, is commonly listed as a weed by grain growers. The Douglas iris, admired as a wildflower on the coast, is one of 12 native species on the state of California list of noxious weeds. What is a "ram-

pant exotic" to a preserve manager may be a useful ornamental to a landscape architect. It is possible that any plant could be a weed to someone.

Despite the lack of consensus on what a weed is, however, botanists tend to agree on what plants are weeds. Worldwide, of 200,000 plant species, only 250 "are sufficiently troublesome universally to be called weeds," according to Radosevich and Holt. In this country, about a third of the common weeds identified by the U.S. Department of Agriculture are California natives.

California's official weeds include many accidental immigrants, which came as seeds in the ballast of ships, and in the hooves or in the feed of domestic animals from European countries with a Mediterranean climate. Some are "escaped exotics," which were introduced in

landscaping gardens, parks, or roadsides and subsequently spread.

If they are considered without relation to human goals and intentions, weeds may be appreciated as highly successful pioneers with powerful survival skills. They can germinate in many environments, have long-living seeds, grow rapidly to flowering, and have very high seed output continuously as long as growing conditions permit, in a wide range of environmental conditions. They compete with other species by special means: by choking other growth, exuding chemicals that repel other plants, or adopting other strategies. (Some "non-weeds" may well show one or more of these characteristics.)

Some weeds have developed strategies that allow them to persist where no other plant can grow. The turkey mullein (*Eremocarpus setigerus*), a native annual widespread on the soft shoulders of roads in California, has seeds that germinate after the winter herbicide sprays have lost their effect. Other roadside weeds are resistant to treading or automobile tires because they grow low, with a rosette of leaves flat on the ground, soft and finely divided. The flowers tend to be inconspicuous and the fruits dry, and seeds are dispersed by adhering to feet or wheels.

The most widely quoted definition of a weed is probably that of Ralph Waldo Emerson: "What is a weed? A plant whose virtues have not yet been discovered." Essayists have used that thought for reams of further reflection. Though some botanists now try to avoid the word as too anthropocentric, "weed" may be almost as hard to get rid of as the plants it refers to.

"There will be weeds for a long time to come," Baker wrote, "and it may be that the most important evolutionary studies in the future will concern the evolution of ecosystems in which weeds play a regular part."

AP & RG

**"Weeds are not so much a botanical as a human psychological category. ... a weed is simply a plant which in a particular place at a particular time arouses human dislike."**

**W.T. Stearn**

# Of Eucalyptus And Ecology

by Margaret Azevedo

***"We aren't against all eucalyptus. . . .***

***But we have the opportunity here to create a living museum of pre-settlement ecology."***

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**T**he forest ecologists and the biologists and the botanists and the geologists from the University of California sat at a table in a Mill Valley school, awaiting the charge of the eucalyptus brigade.

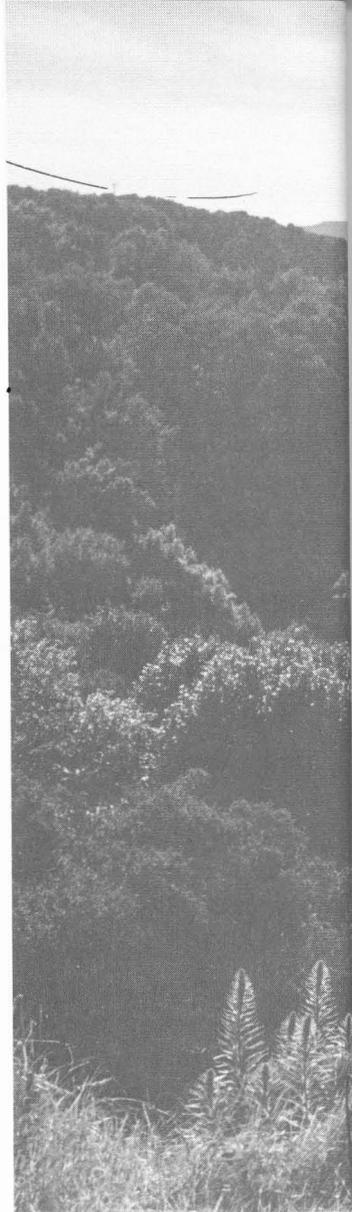
The panel from the University's Department of Forestry and Resource Management had just presented to the assembled public the conclusions from a "Focused Environmental Study of Restoration of Angel Island Natural Areas Affected by Eucalyptus." The study had been done for the state Department of Parks and Recreation, which was proposing to remove several small groves of blue gum eucalyptus trees from Angel Island and replace them with native vegetation.

This plan had run afoul of a small but expressive group calling itself Protect Our Eucalyptus Trees, POET, which had besieged local and state legislators with phone calls, charging that the parks department was violating state law by failing to prepare an environmental impact report (EIR). Alarmed legislators had summoned State Parks and Recreation

Department Director Henry Agonia to the capitol on the last day of the 1987 session and pressed him to produce such a document. Agonia, advised by legal counsel that a full EIR was not required, had settled for a more limited "focused" EIR—the subject of the public hearing in Mill Valley on this particular evening, July 12, 1988.

Angel Island State Park, encompassing a hilly 740-acre island in San Francisco Bay, is popular for boating, hiking, picnicking, bicycling, and viewing historic Army installations. It is wooded, with native oaks, bay, madrone, and buckeye mixed with introduced species, including eucalyptus. Most of the non-native species coexist with the natives. The eucalyptus, however, has long been considered a problem by park managers. The panel from the university agreed that the eucalyptus best be gone.

"We aren't against all eucalyptus," said David Boyd, senior ecologist for the state





Angel Island, looking toward the hills of Marin County.



DEWEY SCHWARTZENBURG

DEWEY SCHWARTZENBURG

parks' northern region, in opening the hearing. Trees around the old garrisons are to be saved. "But we have the opportunity here to create a living museum of pre-settlement ecology. That is a major mission of state parks."

"Eucalyptus are an exotic, invasive species," forest ecologist Joe McBride told the hearing. "They drive out native plant cover." These tall, fast-growing Australian natives change the microclimate and shade out other growth, he said. They also produce a heavy litter that smothers native plants and has a toxic effect on them.

### **Body Count**

Michael Morrison, professor of wildlife biology, told the gathering that no native species had been found to depend on eucalyptus on Angel Island, adding that this was "not surprising, eucalyptus

being non-native." He said he had observed birds on the island, and had trapped and counted small animals. Though house finches, hummingbirds, and salamanders seemed to like eucalyptus, he had found much larger and more diverse bird and animal populations in the native habitats.

Morrison said he had also counted insects, catching them in buckets that contained water. "I found three times as many arthropods [insects] in native stands as I did in eucalyptus," he reported. Of course, he added wryly, you might say the study was "biased toward insects that will fall into a bucket."

Members of POET were not amused. They had demanded the studies, but the results were not at all to their liking. "Killing those trees would be a brutal act," maintained Nancy McVickar, while Cecily Miller, expressing outrage at "eucalyptus phobia," argued that "the trees are part of

***"For several hundred miles in parts of California you never lose sight of a eucalypt."***

**—Sunset's New Western Garden Book**

***The practice of restoration, however, is difficult and often controversial. Where man has interfered with nature for years, certain plants, trees, or animals have to be removed so others can thrive, and certain human activities have to be discontinued. In the process, some people get very upset.***

the landscape, they're beautiful." Walt Westman, a forest ecologist specializing in eucalyptus species who was acting as consultant to the group, said he disagreed both with the methods of the report and its assumptions. "There is a lot left to be done," he said. POET argued that the focused EIR was inadequate because it had not considered alternatives to removal, especially containment and thinning of the groves in question.

But the park department had its champions—representatives of the Sierra Club, the Audubon Society, the California Native Plant Society, and the Nature Conservancy all spoke for eucalyptus removal.

Three months later, POET sued, demanding a full EIR, which would require a discussion of alternatives to tree removal. Before the issue was resolved in court, Agonia decided to oblige. "We weren't getting anywhere," he remarked. The final EIR, prepared by Jones and Stokes Associates Inc. of Sacramento, was published in July 1989. It found that "the proposed project is environmentally superior to the identified alternatives."

Would this settle the issue? The parks department now plans to cut the groves this coming fall, but POET has not given up. "We're going to take further steps to prevent the logging," said POET spokesperson Flora Davis.

### ***The State Parks Code***

The California Public Resources Code states that "Each state park shall be managed as a composite whole in order to restore, and maintain its native environmental complexes," and at the same time "provide for recreational activities." "State parks" is one of five different categories defined in the code, the others being wildernesses, reserves, historic and cultural sites, and recreation units. Less pristine than wildernesses yet still containing significant natural habitats, state parks have been given a difficult hybrid assignment. Disputes arise about what should be protected and restored and how it should be done, and what recreational uses are compatible with resource protection.

The concept of restoration is not new.

It goes back to the early 1900s, to the great forester Aldo Leopold who promulgated the dream of saving "vignettes of primitive America." The practice of restoration, however, is difficult and often controversial. Where man has interfered with nature for years, certain plants, trees, or animals have to be removed so others can thrive, and certain human activities have to be discontinued. In the process, some people get very upset.

Sometimes the dispute is over a particular tree species, as with the eucalyptus, sometimes it's over an animal species. Before the fight over eucalyptus removal on Angel Island, there was the fight about the deer. Like the eucalyptus, deer had been introduced by the Army when the island was a military fort. In the absence of natural predators, the deer were overpopulating the island, starving, becoming diseased, and "crashing," as game management people say. State parks proposed shooting some of the deer so the rest could thrive. News of the plan provoked a hue and cry and threats of lawsuits. So the parks department tried relocation instead, and when that failed, sterilization. That failed, too.

In a remarkable effort in 1981, 203 deer were transported by ferry and trailer to Bureau of Land Management land on Cow Mountain in Mendocino County. At the end of a year, Dale McCullough, professor of wildlife biology and resource management at the University of California, Berkeley, estimated that 87 percent had died. Using information supplied by electronic collars and ear tags, he concluded that some had died of malnutrition, the rest had been killed by wild predators, dogs, poachers, and speeding cars—enemies these deer had never encountered. The subsequent sterilization effort failed because most of the does shunned the roped traps set up to hold them long enough to implant an ovulation-suppressing hormone. The few who entered the traps kept coming back for the food used as bait. The parks department has quietly reverted to its original solution.

Sometimes the dispute is over a method, as happened in Sinkyone Wilderness State Park in Mendocino County. Rangers were using a herbicide called Roundup, which contains glyphosate, to eradicate the tansy

ragwort and scotch broom. These two invasive exotic plants were spreading over coastal terraces and threatening to spoil picnicking and camping sites at Jones Beach. People who opposed that eradication program don't love tansy ragwort and scotch broom—neither is very lovable. They just don't like herbicides.

### Uses Dispute

Sometimes disputes are over particular park uses. Cattle grazing will be restricted at Mount Diablo State Park after a battle between a rancher who wanted the cows to stay, and hikers and ecologists who wanted them to go. Access for dogs and horses has been hotly debated in various places. Mountain bikes are becoming an issue, and there is the ongoing battle over off-highway vehicles (OHVs) in Anza Borrego Desert State Park in San Diego County. The state Park and Recreation Commission banned OHVs from that park in 1987 after finding that dune buggies, quads, three-wheelers, and dirt bikes had caused enormous damage to the sand dunes, rare plants that grow on them, and the burrows dug in them by small animals such as kit foxes, antelope ground squirrels, burrowing owls, and desert fringe-toed lizards. OHVs also crush mud hills, turning 500,000-year-old fossils to dust. According to state law, OHVs belong in state vehicular recreation areas, not state parks. OHV owners, however, are fighting to get back to Anza Borrego, and the state OHV Commission is presently working on a new permit procedure that would let them return. Ken Smith, chief ranger at Anza Borrego, predicts "it won't work." The state Park and Recreation Commission will have the last word.

Controversies such as these are not confined to state parks, of course. What to do about the donkeys in Death Valley, which are destroying the sparsely growing vegetation and depriving big-horned sheep of their food supply? Should wolves be reintroduced to Yellowstone? What about fire in Yellowstone, is that a good or a bad method of management? How many cars can Yosemite Valley support?

The basic elements in all these controversies are the same. Park ecologists, honoring their mandate from the people

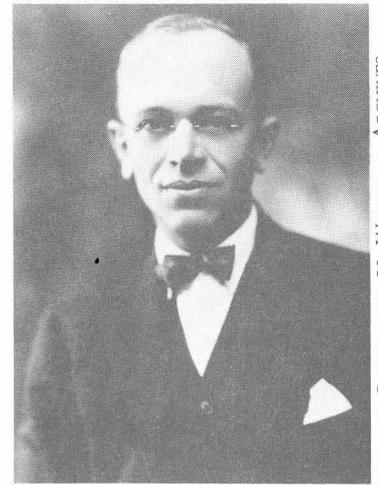
(via the people's elected representatives) doing their Aldo Leopold thing, see a problem or a need. They work up a solution, announce it, and are met with obstruction from the people—or some of them.

"You are taking something good away from us (deer, eucalyptus, OHVs, cows)" the opposition cries. "We are giving you something better," the ecologists reply, but their opponents don't thrill to the idea of "vignettes of primitive America."

Of course there is room for disagreement about any government policy. But these quarrels over resource management usually feature organized, vocal, single-minded groups focused on one special interest and oblivious to or uninterested in the whole.

### Nature 1, Recreation 0

One does not hear much about the views of the public that is not organized, does not attend hearings, does not phone legislators or write indignant responses to draft EIRs, but does go to the parks and enjoy them. State parks tried to get the views of the general public in 1987 by employing a professional polling firm to inquire about favored forms of outdoor recreation. The

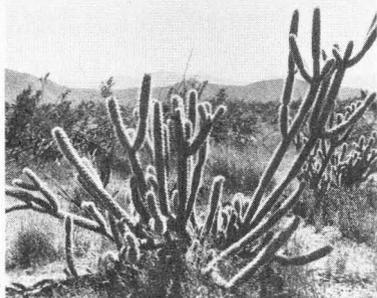


LEOPOLD COLLECTION, U. WISCONSIN ARCHIVES

Aldo Leopold, one of the early proponents of wilderness preservation, observed that "By learning how some small part of the biota ticks, we can guess how the whole mechanism ticks."

There were more mule deer than the island could support.





(Upper) Motorcycle rider on the sands at Anza Borrego; the state Park and Recreation Commission banned OHV use there in 1987. (Lower) Buckhorn cactus at Anza Borrego State Park.

natural environment won hands down. In a sampling of 2,142 representative California households, 55.8 percent of respondents preferred "nature-oriented parks" to "highly developed recreation areas" (21 percent) and "historical or cultural sites" (9.3). (The answers do not distinguish amongst federal, state, or local jurisdictions.) Ninety percent said they "approved" or "strongly approved" of increasing protection for natural environment in parks. A far higher number said they participated in nature-oriented activities (walking, camping, hiking, nature study) than in active sports or organized recreation.

POET defended the eucalyptus groves as a diligent lawyer defends a client, pursuing any argument that might stay the execution. Its members argued that the policy against non-native species is arbitrary and purist, that restoration of a pristine native ecology is impossible because the widespread European grasses cannot be eradicated. They argued there had been inadequate study of the importance of the eucalyptus to certain birds species, and to the monarch butterflies that sometimes bivouac in them. But the issue is not one science can resolve. This is a clash of values, not facts—the value of the eucalyptus as against the value of the restored habitat, even if imperfect. The decision in such a case is made in a political context

and that context—the legislative mandate of the Public Resources Code—does not favor eucalyptus trees.

"We have many different constituencies," Agonia said recently, speaking of resource management disputes. "We must be sensitive to them . . . Our primary goal is to preserve significant natural and cultural resources of the state. Our secondary goal is to keep the support of our constituencies." In this case he'll lose some, gain some.

If public authorities are to succeed in managing landscapes as integral wholes, preserving and restoring natural lands, while also inviting the public to enjoy them, citizens must understand and appreciate the value of such management. Toward that end, David Boyd says that before the eucalyptus cutting begins, he will mount an interpretive display on the island, explaining the purpose of the cutting and picturing oak seedlings and coastal shrubs and native bunch grasses and wildflowers that will appear in the trees' place, as well as insects, birds, and animals that will come to enjoy them. If he's lucky, a constituency for "a living museum of pre-settlement ecology" will also burgeon here. □

*Margaret Azevedo, writer and news analyst, has been a member of the State Coastal Conservancy Board since its inception in 1977.*

## Shady Palms, Pompous Grass Invade Southland!

The tall, graceful palm tree is perhaps the ultimate symbol of the Southern California coastal landscape, emblazoned on posters and T-shirts, billboards, and even clocks. Yet this emblem of the sybaritic lifestyle is actually an alien, an exotic species rather than a California native. In fact, only one palm species is a state native—the fan palm, *Washingtonia filifera*—and its natural habitat is mostly along the edges of the inland deserts, not along the coast. Human intervention is entirely responsible for the seemingly omnipresent coastal palms.

Human intervention is also responsible for much of the other vegetation along the Southern California coast. Development has reduced to a few tiny enclaves many of the wetlands, riparian corridors, and natural beaches. And even in these enclaves, exotic species that, unlike the palm tree, are invasive and destructive threaten to alter permanently ecosystems that thrived for millenia before Europeans arrived.

On the beach itself, the past 50 years have seen an explosive invasion of sea rocket (*Cakile maritima*), a European native, which has become dominant in many areas (such as the Tijuana Estuary). This plant has been shown to be destructive of the native sand verbena (*Abronia maritima*), especially when the latter has been subjected to disturbance (such as trampling). And

unfortunately, sea rocket is much less effective than sand verbena at protecting sand from erosion and loss, so the net

result of the displacement of sand verbena by sea rocket is enhanced beach erosion and destruction.

The widespread iceplant (*Carpobrotus edulis*), familiar along Southern California highways where it was purposely planted to control erosion, is an especially aggressive and invasive exotic, spreading rapidly and displacing native vegetation in coastal areas. Kikuyu grass (*Pennisetum clandestinum*), escaping from the carefully tended lawns where it was purposely

planted, has destroyed many vernal pools and other seasonally moist bottom lands. Kikuyu grass can replace native species, forming a foot-thick thatch in which nothing else can grow.

Some invasive exotics that threaten Northern California are also common in Southern California. French broom

(*Cytisus monspessulanus*, a native of the Canary Islands) and Andean pampas grass (*Cortaderia jubata*) are especially difficult to control. French broom seeds can remain viable for decades, so the only effective way to stop the spread of the plant is to physically remove the plants before they go to seed.

Along river beds, the bamboo-like giant reed (*Arundo donax*, native to Europe)—which is not a true bamboo—has become a common problem, along with the familiar German ivy (*Senecio mikanoides*), a vine which can climb and literally overwhelm native vegetation. Veldt grass native to South Africa has become a serious problem at Vandenberg Air Force Base. Open grasslands have fallen victim to solid stands of sweet fennel, and annual grasses and even the Bermuda grass favored for tended lawns can now be found everywhere.

Management of these invasive exotics is often expensive and time consuming, involving mechanical, chemical, or manual removal, or a combination of techniques. Monitoring is necessary, of course, because these plants will always reappear, growing again from dormant seeds or rootstocks, or spreading once again from private unmanaged stands.

Of course, the most damaging and invasive species of all is not a plant but the familiar mammalian species, *Homo sapiens*, and unfortunately its impact on the native ecosystems of Southern California extends far beyond the introduction of the innocuous tropical palm trees and the even more destructive exotic plant species. Ironically, however, it may be that same human species which will save what little is left of nature in Southern California.



MARCO GOODWILL

Dewey Schwartzburg



Volunteer ranger Tom Ness is ever on the look out for the man he suspects is the perpetrator of a "bizarre, unique crime."

**A** friend and I met Tom Ness as we walked along the cliffs at Tennessee Valley Cove, in Marin County. It was a gray, cold afternoon. Fog swirled around us. "Feels like we're all alone up here," my friend said. "Yeah, but you never know who could be here," I replied.

As we trudged along the high dirt road, we heard a faint "chop chop" sound up ahead. Peering through the heavy mists, we saw a man crouched against a dirt bank, hitting something with a tool. "Hillside Strangler," I murmured. "Don't say that," my friend said.

The man continued to chop, without looking up, as we approached. My friend took a deep breath. "Prospecting?" he called. The man squinted up at us, without stilling his hand. "Nope," he said.

We were close enough to see him clearly now. He was dressed in khaki pants, a cotton shirt, and heavy boots. He was squatting on a stool, hacking the bank with a small hoe. "What are you doing?" I asked.

"Killing South African cape weed," the man responded.

Thus it was that we heard a very strange story.

**T**om Ness is a member of the Golden Gate National Park Association's Habitat Restoration Team, a volunteer group that roams the hills Sundays, pulling out exotic species as part of its effort to preserve the natural environment. Beyond that, however, he is waging a one-man war against an invasive weed which, he be-

# The Cape Weed Caper

by Susan Davis

lieves, is being secretly planted by someone. He is sure he knows the perpetrator, but he has never been able to catch him in the act. Why anyone should commit such an act of biological vandalism is a mystery. Ness thinks that for the suspect—best referred to here as “Johnny Weedseed”—sabotaging native vegetation may be a form of vengeance, perhaps because he was refused a job some 20 years ago in Golden Gate Park. Ness also suspects “Weedseed” of bringing in other “rampant invasive exotics” such as gorse, water hyacinth, watsonia, artichoke thistle, and narcissus. “This is a bizarre, unique crime,” he said. We agreed.

South African cape weed is widely used in California as ornamental ground cover, particularly along roads. For that reason, it is often called the “freeway daisy.” The Los Angeles County Arboretum originally imported the plant in the 1950s, not anticipating it could become a pest.

During the spring, cape weed is a pretty plant, with long runners, small green leaves, and flamboyant yellow flowers. In the fall, the undersides of the leaves turn powdery pale. But the problem is not in the colors. It spreads “like wildfire,” Ness told us, propagating by sending runners out six to eight feet a year. And as it spreads, it strangles the roots of all other plants around it. Up in the Marin headlands, no native species has a chance where cape weed has appeared. And Ness has

found it along 27 miles of trails.

No one is quite sure how this marauder got from Los Angeles to Tennessee Valley Cove. Because this is a sterile variety, propagating by runners rather than seeds, it is unlikely to have drifted in on the wind.

Ness is not alone in suspecting illicit planting by “Weedseed.” Some Golden Gate National Recreation Area (GGNRA) officials do, too, but they have no evidence. “This is a theory,” said Bill Oswald, resource management specialist at the GGNRA. “It’s speculation. If it was taken to court, no one could prove it.”

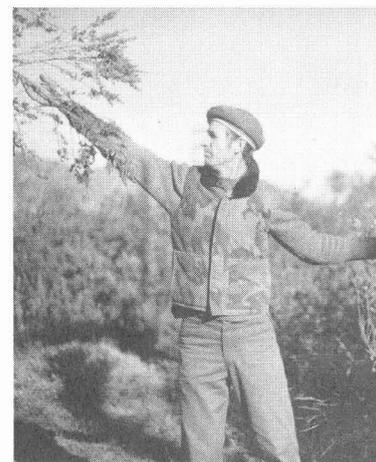
Ness has tracked his suspect across the hills, he has hidden in bushes to photograph him, he has followed him to his home, memorized his bus routes, and sent rangers and park police to trail him. He has watched him bend and stoop—but he has never actually seen him with a cape weed plant.

“I’ve seen him go into a meadow and start zig-zagging across a field, kneeling and poking the dirt every 10 to 15 seconds, trying to fake us out,” Ness told us. “He knows he’s being followed.”

And what if he did catch him, what’s the crime? we asked. Planting an invasive exotic species in a natural landscape is “biological arson” to Ness, but under the law, it probably would be classified as damage to natural features. “All he’d get is a slap on the wrist,” he said.

I told him I would like to talk to his suspect. “He has no way of knowing how much we know. No one has talked to him about it in two years,” Ness replied. “But

**THE “FREEWAY DAISY”  
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every single person who talked to him before gave me, independently, the same description: 'Wacko.' " Ness told me at what San Francisco bus stop I could expect to find "Weedseed," and when. His information was accurate.

**T**he suspect is a short man, about 55, with close-cropped gray hair and thick glasses. On the Sunday morning I waylaid him, he was wearing a light windbreaker and carrying a small white dirty bag. When I introduced myself, he laughed, then told me I could ride with him to Tennessee Valley Cove. He said he goes there every Sunday to hike.

En route, I learned that he was well aware of the problem with invasive species in the parklands and had definite views about it. "They've got their priorities wrong," he said, commenting on the activities of Ness and the Habitat Restoration Team. "They should be working on pampas grass. That leaves seeds. They also should be working on fennel. With fennel, all you have to do is cut off the tops, where the seeds are. But he's not getting rid of the cape weed roots. He'll never get rid of it this way."

I asked how he knew so much about botany and plant succession. "It's an old hobby of mine," he said, but would not elaborate. He said he makes his living from "investments."

"Ness is an obsessive compulsive," he told me after I had explained my reason for seeking him out. "He needs psychiatric treatment, or some lessons in botany." He spoke with a heavy German accent.

When I told him that he was suspected of bending and stooping to "fake out" the rangers, he snickered. "I'm just doing that to pull zea maise," I heard. "What?" I asked. "To pull zea maise." This really stumped me. Zea maise is a type of corn grown in South and Central America. "Say that one more time," I said. "I just do it to pull their leg," he said patiently. "You know, the American phrase for making a joke. Someone told me it's my best defense."

"This whole thing is a joke," he concluded, just before I got off the bus on the Marin side of the Golden Gate Bridge.

"I'm famous now. My friends and I laugh about it. It's a tempest in a teapot."

I went away more puzzled than ever.

**A** tempest in a teapot!" Ness exploded, when I got back to him. "How can you call hundreds of thousands of dollars' worth of damage a tempest in a teapot?" He was not too pleased about the obsessive-compulsive label either.

Well, was it possible that Ness' theory was as "rampant and exotic" as the cape weed? The whole story sounded totally mad.

"Ness is the finest volunteer we have," said Greg Archbald, director of volunteer



Ed Ross

development for the GGNRA. "He has been invaluable in the fight against exotic species in the Marin headlands, because he is so very conscious of the issues involved."

Oswald said that though "the Park Service is certainly interested in maintaining natural systems, and we spend a lot of time and effort on exotic species, Ness is more enthusiastic in dealing with this particular problem than a lot of other people." Ness is "a man with a mission," he said. "I think we have two people here with two different missions." But he was not willing to point the finger at "Weedseed."

Howard Levitt, chief of communications for the GGNRA, said "we have no conclusive evidence as to who, if anyone, is planting cape weed." However, he said, the pesky plant is indeed a problem in the headlands, and it is consuming hundreds of hours and thousands of dollars.

So there the strange tale rests. If you have any helpful leads, let us know. □

*Susan Davis is a San Francisco journalist.*

# Presidio

OF SAN FRANCISCO

## WANTED: A VISION OF GLOBAL SIGNIFICANCE

Planning for the future of the San Francisco Presidio is beginning, and all citizens are invited to participate. This 1,400-acre expanse of spectacularly situated land on the Golden Gate is about to be transferred to the National Park Service, to become part of the Golden Gate National Recreation Area. By September 1995 the Army will end its tenure. What shall we do with this dream legacy?

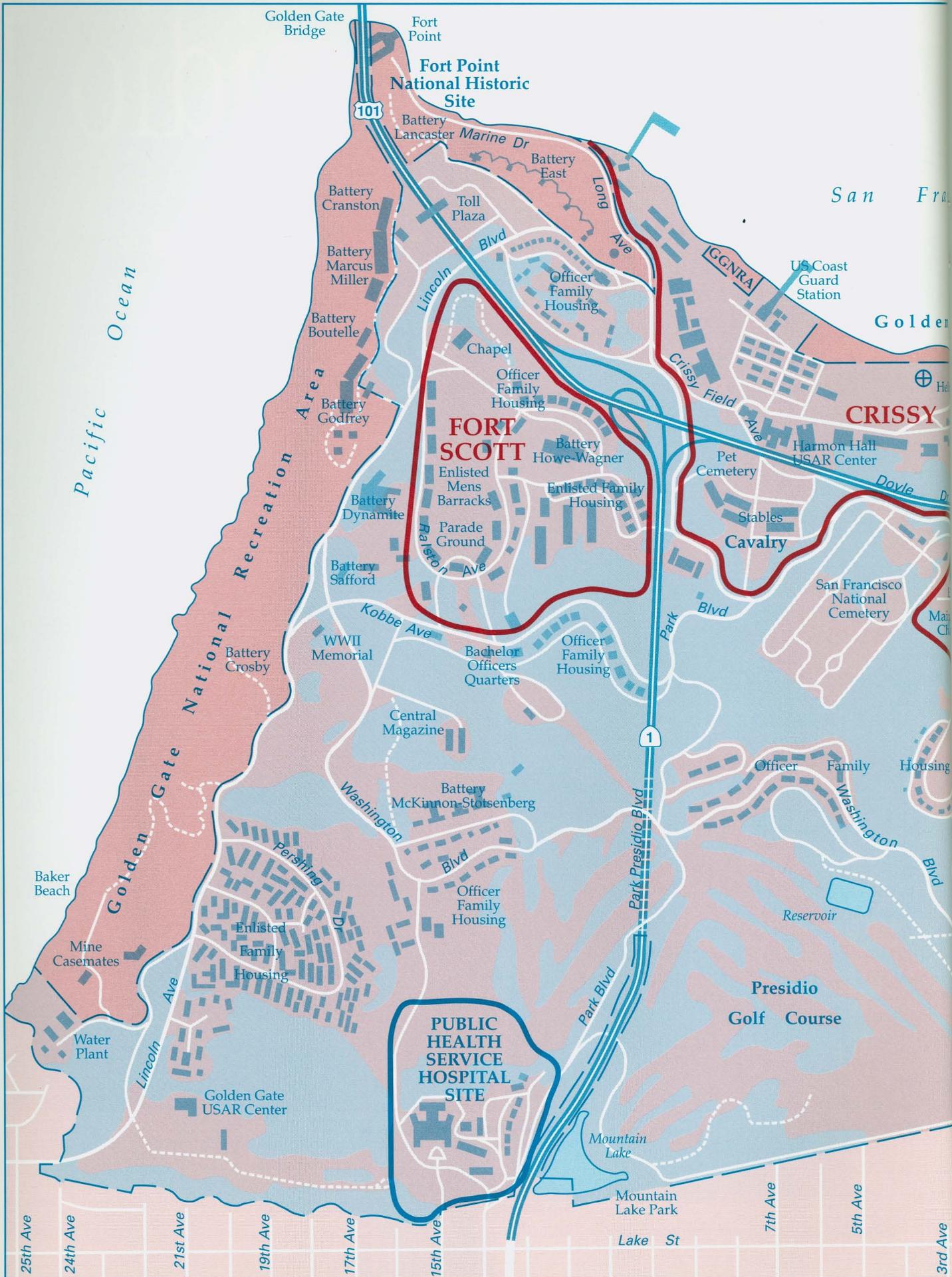
The San Francisco Presidio is

- The nation's oldest continuously active military fort, founded in 1776 by Juan Bautista de Anza.
- A unique historical preserve, with the finest collection of military architecture in the West. There are over 800 buildings, and more than 350 are considered historic.
- Probably the most scenic, most dramatically situated public urban property in the country.
- A grand urban open space, one-third larger than Golden Gate Park, with a forest, a rich flora with 240 native plant species, a natural lake, its own water supply, a network of trails.
- A complex city within a city, with campus-like clusters of buildings, diverse residential units, a hospital, golf course, cemetery, theater, child development center.
- A regional resource, a national treasure, a place of great variety, breathtaking beauty, vast potential; a place of interest worldwide, a major planning opportunity for military conversion.

*The Presidio borders on Fort Point, under the Golden Gate Bridge.*



*Photos by Brant Ward*



**Fort Point National Historic Site**

**FORT SCOTT**

**PUBLIC HEALTH SERVICE HOSPITAL SITE**

**CRISSY**

**Presidio Golf Course**

Pacific Ocean

San Francisco

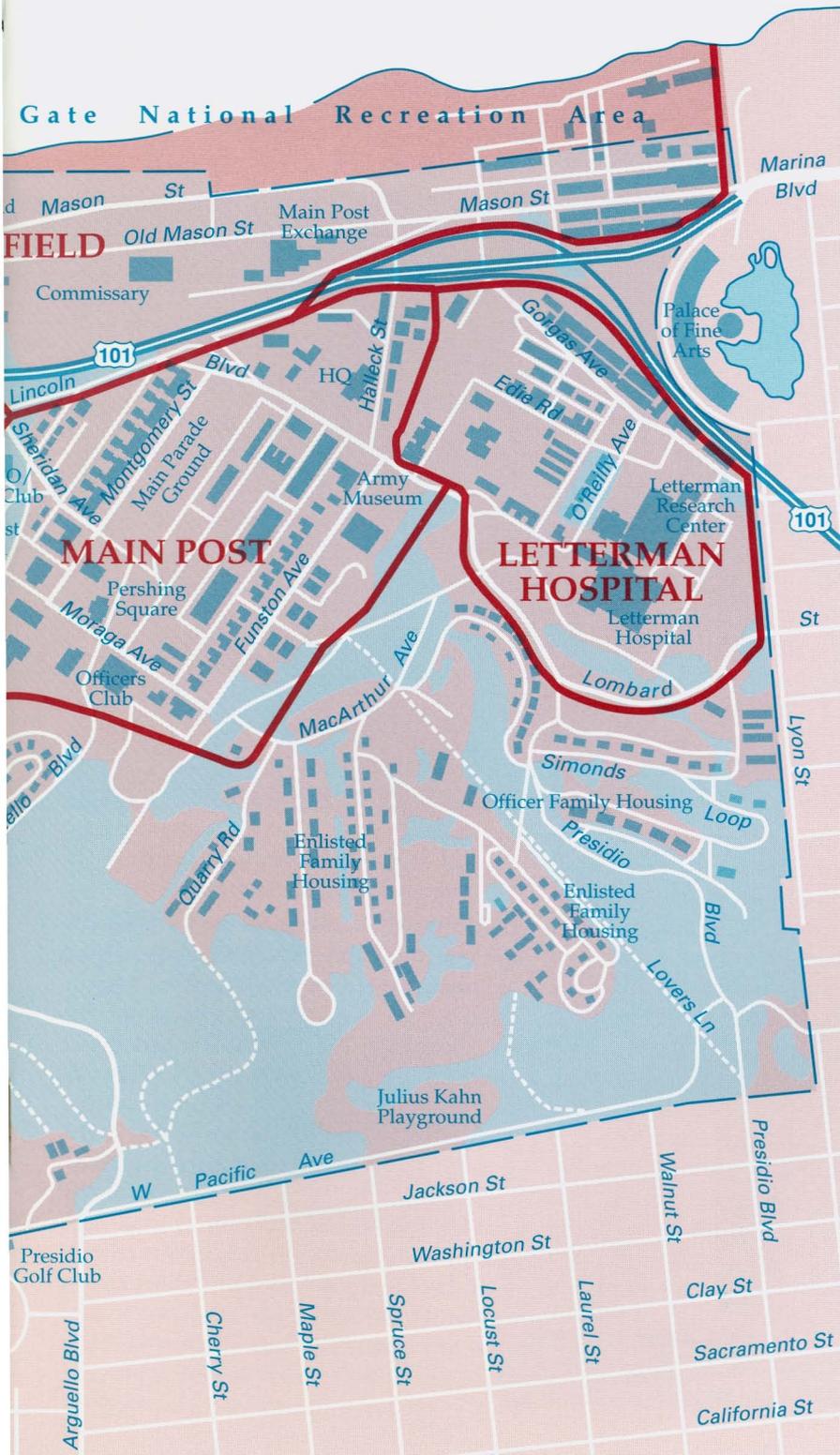
Golden Gate

Golden Gate National Recreation Area

25th Ave  
24th Ave  
21st Ave  
19th Ave  
17th Ave  
15th Ave  
7th Ave  
5th Ave  
3rd Ave

MAP BY EUREKA CARTOGRAPHY  
FOR THE STATE COASTAL CONSERVANCY

San Francisco Bay



# Presidio

OF SAN FRANCISCO

Four clusters of development, each with a special character and natural features, will serve as focal points for planning:

**Main Post** The historical and administrative center, site of the original Spanish garrison. Includes the Presidio Army Museum, Officers' Club, Sixth Army Headquarters, Pershing Square; also a gymnasium, bowling center, two chapels, a theater, library, and child development center.

**Fort Winfield Scott** A campus-like cluster of Mission-style buildings constructed between 1910 and 1915 form a horseshoe around a grassy parade ground that faces the Golden Gate Bridge.

**Crissy Field** Includes historic cavalry barracks, stables, Fort Point Coast Guard Station, warehouses, the commissary, and post exchange. Extends to edge of beach and Fort Point.

**Letterman Complex** Dominated by Letterman Army Medical Center and Letterman Army Institute of Research. Historic structures include fine Victorian houses.

Public Health Service Hospital Area is within the Presidio but not within GGNRA boundaries. Its future is uncertain. Housing in 14 separate residential areas ranges from large single-family dwellings to apartment complexes and barracks.



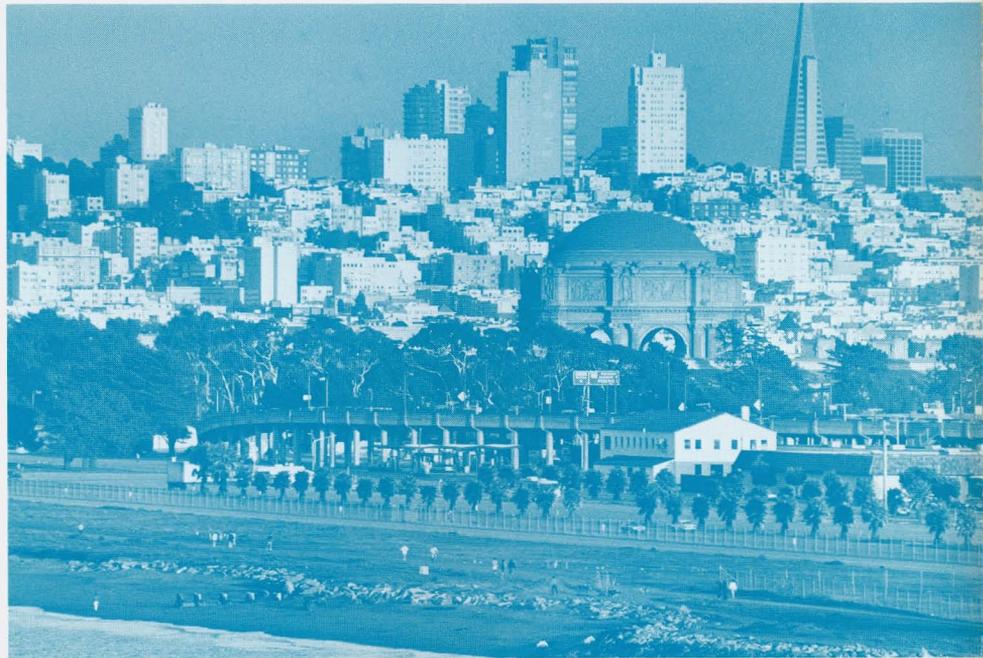
## What Shall Be Done With This Treasure?

The overall concept will emerge during the planning process that is expected to take at least two years and will involve hearings around the country. Within that concept, many activities are possible. Ideas so far include some that could have global significance, some that reflect mainly local interest. It has been suggested that the Presidio, or portions of it, be used for:

- A World University, funded by many participating nations, committed to the search for international understanding and peace.
- A Pacific Rim Center, where citizens and governments of Pacific nations work on ways to cooperate, where they confer about resources, the environment, technology and trade, and also on global problems such as ocean mining, pollution, deforestation, and global warming.
- A model public school complex that would demonstrate what the nation's schools could be at this time of great demographic change, given the freedom to innovate, creative leadership, and adequate resources. Children would be drawn by lot from throughout San Francisco's public schools.
- A center for theater and the arts that brings together artists from around the world..
- A communal farm for the homeless.
- An international AIDS research center.
- A stadium for the San Francisco Giants.



► To explore the Presidio, take a walk with a National Park Service ranger, Saturday or Sunday at 10 a.m. Gather at the Main Post flagpole. For more on organized walks, call (415)923-WALK. Groups can arrange walks focused on special interests by calling the Presidio Resource Center at Fort Point, (415)556-0865.



► To become part of the planning process, write or call the GGNRA, Presidio Planning, Building 201, Fort Mason, San Francisco, CA 94123. (415)556-8164. Ask to be put on the mailing list for Presidio planning.



# William Penn Mott Jr.

***Who will decide the future of the San Francisco Presidio—and how? A key man in the selection process explains.***

**W**illiam Penn Mott's name has become synonymous with parks and recreation in California after more than 50 years of professional activism. He began his career in the Bay area in the Oakland Parks Department and at the East Bay Regional Park District. He headed the California Department of Parks and Recreation during a time of expansion. President Reagan appointed him to head the National Park service in 1985, where during a time of budgetary constraint he increased the number of parks by 14 between 1985 and 1989. Back home in the San Francisco Bay area now, Mott has taken on a challenging new assignment as a leader in the planning for the future of the San Francisco Presidio. He was interviewed for California Waterfront Age by Marc Beyeler, manager of the State Coastal Conservancy's Urban Waterfronts Program.

**Waterfront Age:** *Your title is now special assistant to the western regional director of the National Park Service. What is your role?*

**William Penn Mott:** I will have broad responsibilities in coordinating the planning of the Presidio. I am also responsible for organizing a mission statement for the Santa Monica Mountains, working with the state Parks and Recreation Department and our own organization. The Santa Monica Mountains are a valuable open space resource, and animals move between them and the San Gabriel Mountains. I also have Guam, Saipan, and American Samoa where we are making plans for the development of two National Park System areas, and, on American Samoa, a wildlife reserve and sanctuary. I'm also playing a part in the review of the planning process for Yosemite Valley.

Regarding the Presidio, we have to develop three basic documents: the planning guidelines, a statement of management, and the general management plan. The first will set forth parameters of the planning process. The second document will deal with problems, constraints, goals, and objectives, without taking positions on any of these. It will also inventory existing natural, historical, and cultural features of the base. Workshops and public discussion will be held during the preparation of these two documents. Once they are agreed to, we will go into the hearing process to develop the third document, the general management plan. It will include a recommended plan, alternatives, and an environmental impact statement, and will become the guide for the management and development of the Presidio. It will be subject to review every



BRANT WARD



**William Penn Mott Jr.**

five or ten years, depending on changes that may have taken place—new research and information. This whole planning process should take two to two and a half years. We will have hearings in key locations throughout the U.S., because there is interest in the Presidio nationwide. And we'll probably get thousands of ideas.

**WA:** *There have already been several meetings and conferences about the Presidio's future. How will you integrate these efforts into the planning process? And how do you envision planning successfully under conditions where everyone is focused on his particular interest?*

**WPM:** The information, ideas, and comments from these meetings will be considered as part of the planning process. The planning guidelines and the statement of management will help people to understand the values incorporated in the Presidio and provide guidelines for their thinking process. I feel that this

unique site is worthy of ideas that are of national, international, or global significance.

**WA:** *Can you have things that are significant both locally and globally?*

**WPM:** Yes. Many global, national, and international issues are significant locally. For example, biological diversity is an issue that we face on a global basis, but it relates to the food we eat and the medicine we take. Acid rain can destroy our fishing opportunities as well as our national and international forest. The global warming trend that scientists feel may continue will raise the height of the ocean and can cause serious loss of some of Crissy Field Beach and cause large-scale erosion to the cliffs along the Pacific Ocean boundary of the Presidio.

The Presidio has four major areas: Letterman Hospital and the research unit, the main parade ground area, the Fort Scott area, and the Crissy Field area. We think that in each area we need to identify a key operation. Around it there can be all kinds of peripheral development. [A fifth area on the map on Pages 26–27 is the Public Health Service complex. Its future is still uncertain.]

**WA:** *How do you integrate the planning process that has already been completed for Crissy Field?*

**WPM:** We will have to reassess the plan. The concept that has been approved is basically good, but we need to make sure that it will integrate into the plan for the total Presidio.

**WA:** *What is your vision of the place? And how do you make it more than the sum of the parts?*

**WPM:** You can't start with the parts, you have to start with the vision and utilize the four major areas to accomplish it. If you have the big picture, out of that will come the pieces and the funding. If you start with the little pieces, you'll never get the funding or end up with the big picture.

**WA:** *What is the big vision?*

**WPM:** I don't know. This process will

develop many ideas, and out of the public discussions and workshops will come ideas that will create the vision—the big picture.

**WA:** *So you don't have preconceived notions of what is at the end of the process?*

**WPM:** My comment is that whatever we end up with has to be of national, international, or global significance. Everyone will come in with ideas, and we want to encourage public participation. Who knows at this time what will be the final result?

**WA:** *Who chooses among ideas and how?*

**WPM:** Our planning team, the GGNRA advisory board, the secretary's advisory commission, professionals of known reputation, and others will help us determine how this unique parcel of land should be used. It won't be easy. There will be differences of opinion. I'm encouraged because when I speak around the Bay area, I notice that people are beginning to talk about the big picture rather than local issues. When I speak in Marin County, though, it's a little different. Usually the question comes up: Are we going to build additional roads in the Presidio to relieve the pressure on the Golden Gate Bridge and Marin?

**WA:** *Do you foresee some kind of military operations, on a lease-back basis or some other arrangement?*

**WPM:** It's the oldest continuously operating fort in the United States, and to carry forth some military tradition would be nice. For example, the Army shoots a cannon off at 5 p.m. and places flags along the main entrance road to the Presidio to greet visiting dignitaries. Continuing these events could, I believe, be part of our living history interpretation. The Congress has suggested that the Army Reserve unit be kept at the Presidio and that Letterman Army Hospital be leased back to the Army. The Sixth Army occupies only a very small part of the space now. There are 54 other agencies here, both public and private. Letterman is a significant impact, with 776 military people connected with it, 1,200 civilian personnel, and a payroll of \$52 million.

**WA:** *Is there a role for nonprofits, as in Fort Mason?*

**WPM:** Could be. It all depends on what is the vision of the final plan. The Presidio uses will tend to be a more scientific and educational than recreational insofar as the building complexes are concerned.

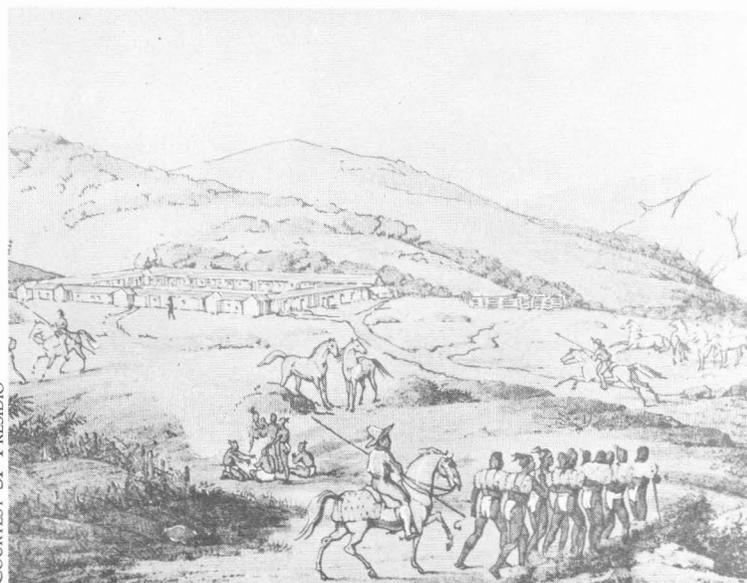
**WA:** *Do you have a Presidio staff team?*

**WPM:** We are creating a planning team and a transition and operation team. Their activities will be coordinated by a small administrative unit.

**WA:** *There is no tension between yourself and Brian O'Neill [general superintendent of the GGNRA]?*

**WPM:** No problems. We work as a team. I will look at the big picture. Brian will deal with the vision and its implementation and the details of management and transition.

COURTESY SF PRESIDIO



**WA:** *Are there models for the planning process being launched?*

**WPM:** Yes, the GGNRA went through a similar planning process and absorbed 13 Army units and put them to other uses. However, the Presidio is much more complex. There are 1,000 buildings, 450 of them historic, so you can't tear them down or change the exterior. We probably will tend to open up the grounds and take out some of the non-historic buildings. There is a separate water and sewer system. There are concession contracts—the golf course, the theater, Burger King—all have to be dealt with. The forest that was planted a hundred years ago—400,000 trees under a \$10,000 contract—are now maturing, and they are growing in sand, so that they are not as stable as they would have been

**Drawing of the Presidio made in 1816 by Louis Choris, who accompanied the Russian exploring ship *Rurik* on an expedition to find an eastern passage to the Atlantic via Alaska. He made many drawings of the countryside, vegetation, and Indians of early San Francisco.**

in heavy soil. Just to maintain the forest and replant it—at about 1,000 trees a year—and maintain the landscaping, we are probably talking about \$700,000 a year.

There will be a lapse of five to ten years after a general management plan has been approved before that plan is fully implemented. We think that once it is, as much as 70 percent of the cost may be covered by revenue produced.

**WA:** *How? Through rentals?*

**WPM:** Yes, our policies require that buildings be rented at fair market value. Based on information we have—and we don't have it all—we think it will cost about \$16 million a year to operate the Presidio, including water and sewer and security. The Army's cost looks to us to be about \$26 million.

GGNRA's operating budget.

**WA:** *You'll need \$50 million to \$100 million in all?*

**WPM:** Yes, over the time until we are fully implemented and operating under the new park vision for the Presidio.

**WA:** *You think it will come?*

**WPM:** I think so. We have to market the product.

**WA:** *Will you refine the process of choosing further beyond the hearing process?*

**WPM:** Oh I think so. I think we will have some very good ideas that we should zero in on, and a whole lot of ideas that don't relate to the planning parameters we have set, and some pretty good ideas. The idea

must be of national, international, or global significance. We will probably have a group evaluate ideas that are similar and select the best among them. It's like the Rose Bowl Parade. There's hundreds of floats, but a half dozen stand out, and the question is, of that half dozen, which is best? That's the way this selection process is going to be.

**WA:** *Is there any hazard that big institutions, by virtue of their money, might dominate the process, or by virtue of their resources be accorded special treatment?*

**WPM:** No, the intrinsic values, I feel, will be just as important as the dollars. We have prepared a brochure that will be available to the public which says: "What plan is worthy of the most beautiful military post in America? You are invited to help create that plan." I think it will be a very interesting exercise and that the public will participate in large numbers and help us to come up with the big picture—the vision for the future of the Presidio. □

COURTESY SF PRESIDIO



**The Presidio, seen from the north tower of the Golden Gate Bridge.**

**WA:** *Wherein lies the discrepancy between \$16 million and \$26 million?*

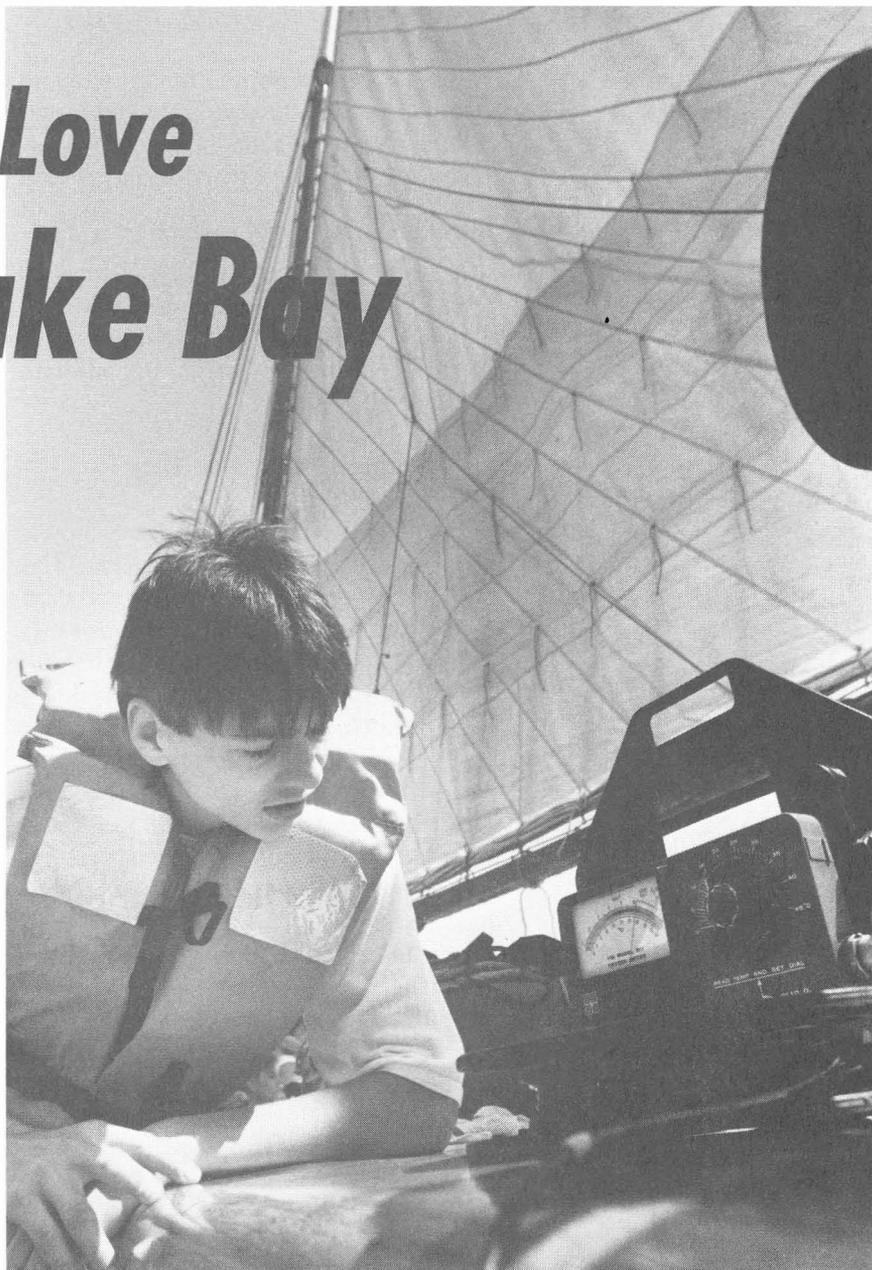
**WPM:** When they talk of cost of operation, they do it one way, we do it another.

**WA:** *And where will the money come from for the interim period?*

**WPM:** We'll have to have \$16 million a year for some years, and it will come from an appropriation from Congress to the

# Learning To Love Chesapeake Bay

by **Rasa Gustaitis**



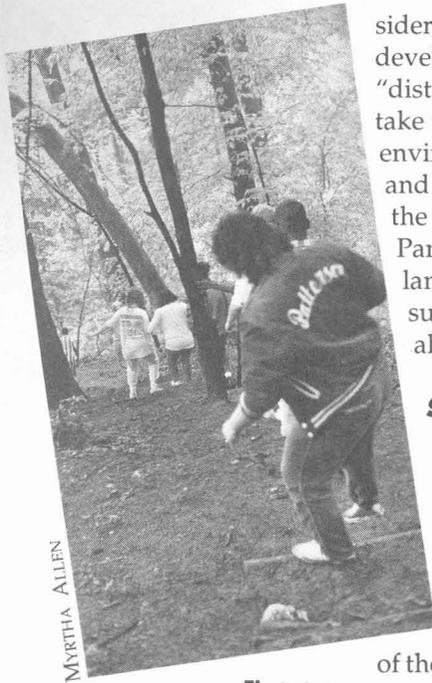
COURTESY CHESAPEAKE BAY FOUNDATION

Chesapeake Bay is the largest and most productive estuary in the continental United States, but it is also the catch basin for almost all the treated sewage, agricultural runoff, and waterborne industrial waste in its 64,000-square-mile watershed. The degradation in water quality had been apparent for years in algae blooms, unexplained fish kills, disappearance of underwater grasses, and the condition of oysters, rockfish, and shad. In 1983 the Environmental Protection Agency published the results of its five-year study, confirming with hard data what had been feared or suspected: Drastic measures were needed to save the bay.

Four years later, the governors of Maryland, Virginia, and Pennsylvania and

the mayor of the District of Columbia signed the Chesapeake Bay Agreement, pledging to work together to stop the abuse of the estuary and to repair the damage. The document included a management plan for the bay, listed specific goals, and committed the signatories to reducing the amount of nitrogen and phosphorus entering the main body of the bay by least 40 percent over the next dozen years. "The agreement makes it very clear that every citizen, every level of government and every private organization or special interest group has a role to play in our campaign to protect the Chesapeake," according to Maryland Governor Donald Schaefer.

In 1988, a blue-ribbon task force con-



MYRTHA ALLEN

First steps toward the great outdoors.

***"I grew up here, in Baltimore. I walked to school—and to college. I didn't even know the harbor was here. I was landlocked."***

***Myrtha Allen***

sidered expected population growth and development to the year 2020 and found "disturbing trends that will slowly overtake the gains being made in improving environmental quality" unless "prompt and forceful action is taken" to manage the expected growth. The Year 2020 Panel strongly recommended statewide land-use planning and other measures sure to arouse powerful opposition in all the bay states.

### **Strangers to the Bay**

How to accomplish what was necessary to save the Chesapeake? The number of people who earned their living from the bay was shrinking. Bans had been imposed on fishing for rockfish and shad. Only a few of the graceful skipjacks still dredged for oysters—the last sailing workboats in the country, remnants of a fleet that had numbered hundreds. Oyster beds had succumbed to pollution, overharvesting, and disease, and some people suggested that it would be cheaper to put the idled watermen on welfare than to bring back the oyster beds.

Clearly, many local residents were now divorced from the estuary that had supported human life on its shores for more than 10,000 years. They had to learn to appreciate it again as a precious commons.

With this goal in mind, government and citizen leaders undertook a major public education campaign to reintroduce the people of the watershed to Chesapeake Bay. One of the major components of this campaign is the environmental studies program operated by the Chesapeake Bay Foundation in cooperation with schools, especially those in Maryland and Virginia. This is a regional program, conducted at 75 locations on the water, on islands, along the shore, and along streams. It is probably the largest and most comprehensive watershed education program in the country.

At a time when many California schools have sharply cut down or eliminated outdoor study programs, the Chesapeake Bay Foundation has been leading expeditions for tens of thousands of schoolchildren and hundreds of teachers

each year in skipjacks, crab boats, and other traditional bay workboats. The carefully planned study trips—which are preceded and followed by classroom work—usually start near home and move out to wider waters. Excursions are designed to allow everyone aboard to experience life on the bay, to perceive both problems and solutions. Students pull up oysters with tongs and dredges, examine them, and find that many are diseased. They gather samples of other marine life in plankton nets, crab pots, eel traps, and by other traditional methods. They test water for dissolved oxygen, metals, nutrients, and turbidity. They learn about the watershed, and about their place in it. A teacher from Roanoke, Virginia, who regularly takes classes on these trips, says: "It's like going to Disneyland. You're having so much fun you don't realize you're learning."

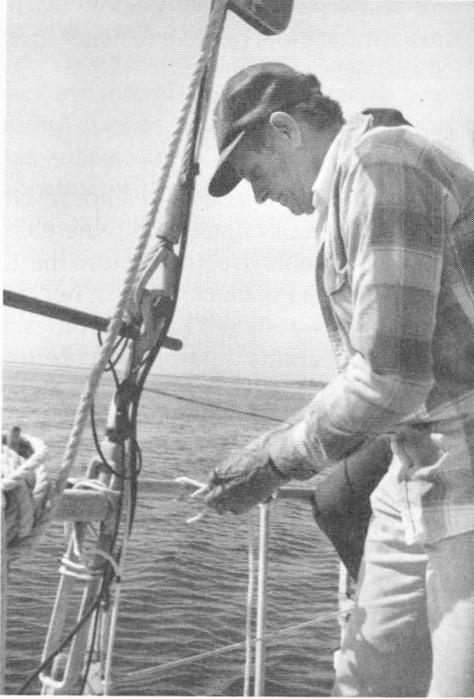
Last year, 32,000 schoolchildren and teachers participated; this year 35,000 are expected to take part. Most came for day trips. Some, however, spend up to two weeks studying the bay while camping or staying in a lodge on an island.

"Our purpose is not education," says Donald R. Baugh, education program director for the Foundation. "We're trying to get water quality improvement, and that's the only way we can do it." State contributions to the program come from bay clean-up funds. The aim is "to develop constituents for the bay who are informed decision-makers and who are motivated to take action" by "carefully crafted direct exposure to the bay."

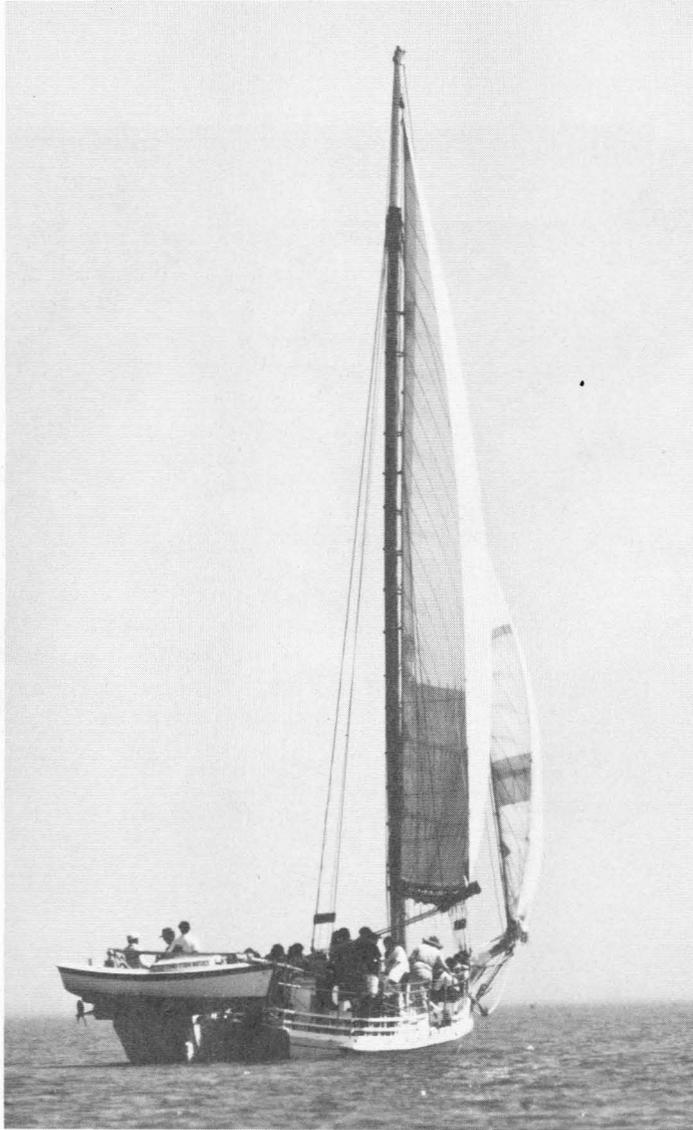
### **Gathering Data the Easy Way**

Sally Kutzer, a science teacher at Roland Park Middle School in Baltimore, who has taken children on the Foundation's trips for 11 years, likes to show them the inner harbor of Baltimore, "a very stressed area," and also Meredith Creek, one of the prettiest undisturbed creeks in the upper Chesapeake. There they step in with hip waders and gather organisms in seine nets near the shore. "This is especially great for inner-city kids who have never experienced anything like this," she says. The trips provide data that can be used in the classroom and "help them to understand the significance of quantitative data and to

(Left, below) Earl Williams demonstrates a knot. (Right) A skipjack classroom, into the wind.



RASA GUSTAITIS



COURTESY CHESAPEAKE BAY FOUNDATION



COURTESY CHESAPEAKE BAY FOUNDATION

Adults and children explore tidal marshes by canoe.



COURTESY CHESAPEAKE BAY FOUNDATION

Trawl nets are dragged behind boats to collect crabs, fish to be studied in aquaria.

interpret it," Kutzer says. Up to 90 percent of her students have gone on a trip. "My goal is to get all to go," she says. There are long waiting lists.

Whether children get to go depends in large part on teachers' willingness to put out special effort. The Foundation requires that they spend at least a day at a teachers' workshop or, preferably, participate in a one- to two-week session. Some teachers must, in addition, overcome major logistical and other obstacles.

### **Clearing the Way**

Myrtha Allen teaches science in Baltimore's Patterson High School, where about half the students drop out before the 12th grade. Above the blackboard in her classroom hangs a sign: "Failure comes not from lack of ability but from lack of effort." The effort required, however, is often far greater than most young people are required to—or are able to—manage. "There's a girl whose mother just threw her out—she has to find a place to live. There are kids who won't come to school; the job has taken first priority. We have pregnancy, poor attendance, students in the 10th grade for the second time. We have those I call 'deliberate failures.' We're competing against stress at home, peer pressure, and money."

Allen tries hard to get as many of her students as possible out, however, because she knows from personal experience what that can mean.

"I grew up here, in Baltimore," she says. "I walked to school—and to college. I didn't even know the harbor was here. I was landlocked." Then she enrolled in a two-week CBF summer teachers' workshop held on one of the bay islands, and her world expanded. "I had never slept in a tent or anywhere outside. I got bit by mosquitoes. I got stuck up to my hips in the mud, and this man had to pull me out. It was awful, it was great. A lot of people in that workshop left before the two weeks were up. But now you can't get me away from camping." She has since gone back summers to volunteer for the Foundation on the island, has participated in a Sea Grant program at the University of Delaware, writing a class program titled "Marsh Plants Are More than Obnoxious Weeds,"

and has spent summer vacation time as a naturalist at a day care center.

Most of her students are "landlocked" as she was. Because she usually teaches five classes a day but can take only one at a time on a trip, she must provide a substitute for the four others—and no funds for that are available. She has paid a substitute teacher out of her own pocket, asked her students to chip in, and planned trips for weekends. However, "a lot of the students are parents, some are working, and they are just plain uninterested in weekends," she has found. To entice them, she has gone so far as to take a video camera on some of the trips so she could show those who did not come what they are missing. "These are students who have never scaled a fish, never stepped into a stream," she explains.

Inner-city children are not the only ones "landlocked," however. Those from inland farm communities within the watershed are also often surprised that they have any relationship to the bay. Yet agricultural pesticides, fertilizer, and sediment contribute heavily to bay pollution.

### **Preparing for Citizen Action**

One of the Foundation's new programs is in social studies, meant to prepare students to make decisions on the social issues they will face, such as conflicts between economic profit and clean water. This program is in keeping with a state of Maryland board of education mandate adopted last year, requiring that environmental education in the schools be designed "to enable students to make decisions and take actions that create and maintain optimal relationships between themselves and the environment, and to preserve and protect the unique natural resources of Maryland, particularly those of the Chesapeake Bay and its watershed."

"We did an assessment three years ago and found that a lot of kids know about nuclear war, the population crisis, and have a sense generally that things are getting worse and are out of control," said Gary Heath, Chesapeake Bay education coordinator for the state of Maryland Department of Education. "We are trying to address that feeling."

To sample this day-long program, half



Many oysters scraped from a bar turn out to be sick.



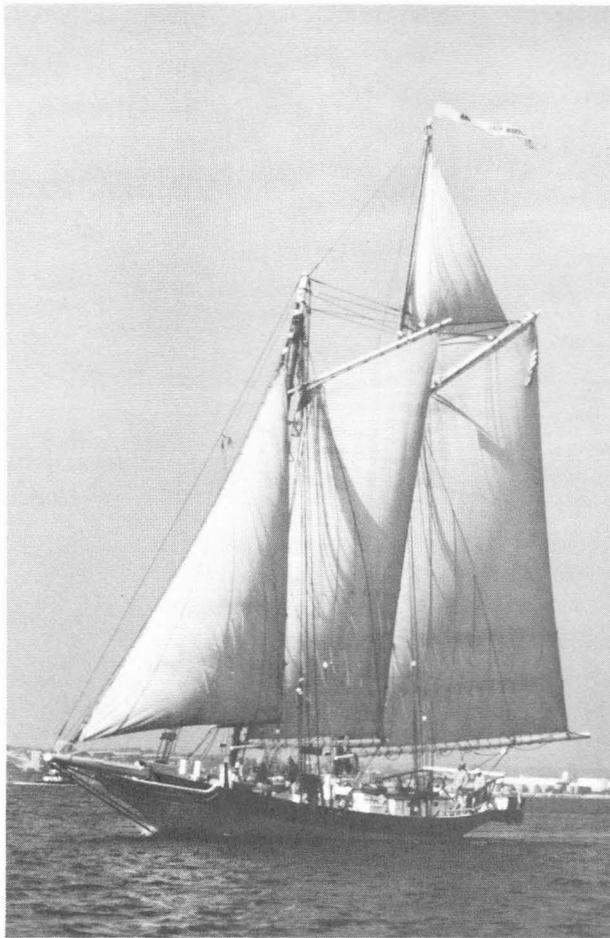
A trawl catch is examined on a deadrise workboat.

RASA GUSTATIS

COURTESY CHESAPEAKE BAY FOUNDATION

The Lady Maryland Foundation also conducts environmental education programs on the Chesapeake. Its graceful schooner is a full-sized replica of a traditional "pungy" boat, developed to carry perishable cargo such as oysters and melons. It now carries groups of students and others on trips that focus on the Port of Baltimore, and also travel to many other harbors, stressing the fragility of Chesapeake Bay and the estuary's rich history.

COURTESY LADY MARYLAND FOUNDATION



of Maryland's county social studies supervisors gathered in Annapolis one fine spring morning, to board a skipjack.

The boat was leased from Ed Farley, who had been using it for oyster dredging in the winter and for charter trips other times. The other crewmen were Earl White, a waterman since 1939; Earl Williams, who maintains wooden vessels for the Navy; and Polly Chandler, a former teacher who is now one of more than 40 full-time people on the Foundation's environmental education staff.

For five hours, as the boat drifted, the school administrators learned about their bay. They heard how the bay came to be 18,000 years ago, when glaciers began to melt and drowned the river now known as the Susquehanna. They heard firsthand stories of life on the water when you could simply drift—as they were drifting—to make the legal limit of oysters in an hour. They saw the sick condition of the oysters a dredge pulled up. Facts they already had from news reports assumed a different meaning. They heard that parts

of the bay are anoxic (without oxygen) because phosphorus and nitrogen pollution have encouraged algae blooms that shut out sunlight. Algae and sediment have killed underwater plants and thus deprived fish of food and shelter.

They discussed the cost of removing nitrogen from sewage outflow, ways to stop agricultural chemicals from reaching the bay (a tree-planting program is under way), and they heard that one in ten jobs in the regional economy was dependent on the bay. They talked of the implications of "Boswash," the creeping urban sprawl that would eventually join Washington and Baltimore into a single megalopolis.

They did all that, but they also looked out over the water, tried to follow Earl Williams' knot-tying demonstrations, laughed, relaxed. They considered the bay while drifting with the gentle breeze, on open water, in the open air, where hope flourishes far more readily than does despair.

### **One Day Could Free the Mind**

One intense day on the bay does not seem like much, perhaps, but it can be an eye-opening experience. It can have a ripple effect that may be hard to trace, but that, in the long run, is essential if high-minded goals and policy statements are to be translated into actions that will, together, reverse the processes of degradation and save Chesapeake Bay. For some, as for Myrtha Allen, this kind of experience could reveal new possibilities in life, suggesting that it may not be necessary to earn a living by strapping yourself into an automobile and joining the harried mob that creeps along the Washington Beltway to some windowless office where you spend the day glazed-eyed in front of a computer; that you could, given a healthy bay, live like this, on the water, feeling the wind on your face, hauling in food for the community to eat, as people have been doing for centuries. One "carefully crafted" day on the bay can free a landlocked spirit so that, waterborne and airborne, imagination freshens, and we manage to change course—toward life. □

*Rasa Gustaitis is editor of California Waterfront Age.*

**New!**

## **Waterfront Funding Guide Now Available**

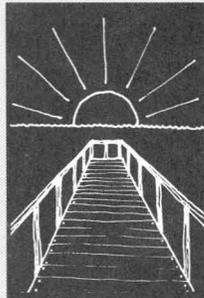
**F**or coastal communities wishing to locate funds for waterfront projects, the search for appropriate public assistance can mean days of weeding through state and federal guides that include grants and loans for everything from aging to traffic signal management. In hopes of making the search less time consuming and complicated, the State Coastal Conservancy's Urban Waterfronts Program has compiled a *Guide to Public Financing for Waterfront Restoration in California*. It offers up-to-date and comprehensive information on funding sources that can be used for waterfront-related projects.

The guide describes over 40 state and federal programs that provide planning and feasibility grants, project financing, or other forms of financial assistance for a variety of activities. It is meant to be useful to a broad range of groups in both rural and urban communities—local government agencies, special districts, nonprofit groups, planners, business owners, artists, and others.

The information is organized into nine categories of waterfront activity. These are (1) planning, feasibility, and design; (2) waterfront and boating facilities; (3) public access; (4) park acquisition and development; (5) restoration and enhancement of natural environments; (6) storm damage and beach erosion control; (7) historic preservation; (8) cultural activities; and (9) economic revitalization.

The funding programs listed in these categories are diverse. The planning, feasibility, and design category, for instance, lists planning grants offered by the Conservancy strictly for waterfront restoration; research grants offered by the National

Coastal Resources Research and Development Institute for projects promoting environmentally compatible economic diversification in the coastal zones; and grants offered by the California Arts Council for site-specific art, design enhancements, and



art plans for state facilities. The economic revitalization category contains information on the new Rural Economic Development and Infrastructure Program (REDIP) of the California Department of Commerce; as well as

Community Development Block Grants (CDBG) offered by both the California Department of Housing and Community Development and the federal Department of Housing and Urban Development.

Each program statement describes the program's purpose, eligibility requirements for project and applicant, recent examples of how coastal communities have used funds from the program, information on deadlines for 1990 and 1991, the range of awards, the total budget of the program for the 1990-91 fiscal year, contact names, addresses, and phone numbers.

To receive the guide, write Maria Sanders, State Coastal Conservancy, 1330 Broadway, Suite 1100, Oakland, CA 94612. (415) 464-1015. □

# Michael Wornum

**Neal Fishman talks with the retiring chair of the Coastal Commission about the Conservancy, the Commission, and his years at the cutting edge of California's coastal policy.**

**T**he Coastal Conservancy's board is one of the agency's main strengths. Legally speaking, the board is the Conservancy. Of its seven members, each is either a high government official or is appointed by the governor or the Legislature. It's always been a superb board—battle scarred, opinionated, independent, wise in the ways of government and politics.

During most of the '80s, Michael Wornum, as chair of the Coastal Commission, and thus by statute a member of the Conservancy, has been one of the chief supporters of the Conservancy and its independence. Wornum is an ex-assemblyman, a former mayor of both Larkspur and Mill Valley, a charter member of the San Francisco Bay Conservation and Development Commission, an architect, planner, and college teacher. While a state assemblyman from Marin County, he authored the law that established the Conservancy.

Recently, deciding not to run again for mayor of Larkspur, Wornum, who held a seat reserved for local elected officials, retired from the Coastal Commission and thus, from the Conservancy. Some uncensored and characteristically direct and irascible comments about the Conservancy, the Commission, and the powers that be follow. They are Wornum's opinions alone and do not represent the Conservancy's official position. The only things missing are Wornum's English accent and the twinkle in his eyes.

**Waterfront Age:** *Why was the Coastal Act so controversial?*

**Michael Wornum:** It was the first time a permanent agency was put in to regulate land use and planning, which was a local government prerogative. Part of the compromise was that six of the 12 members of the Coastal Commission have to be elected local officials, on the basis that they would understand the problems.

**WA:** *Was it too much to ask local areas to implement state policies not of their making?*

**MW:** No, I don't think local governments were really against the elements and

ground rules. If the Coastal Commission has done nothing else, it has achieved the support of local government. Proposition 20 was really adversarial to local government; there was real hostility [in the campaign for it in 1972]. Since then, some local governments have become more environmental than the Coastal Commission. It [the Commission] raised the consciousness level. I always contended that environmental issues do not necessarily have to be dealt with at the federal level, that the local level is as good a place to fight them. The EPA [Environmental Protection Agency] is a disaster at the moment, and local governments are very environmentally conscious. Part of the trouble the



PETER GRENNELL

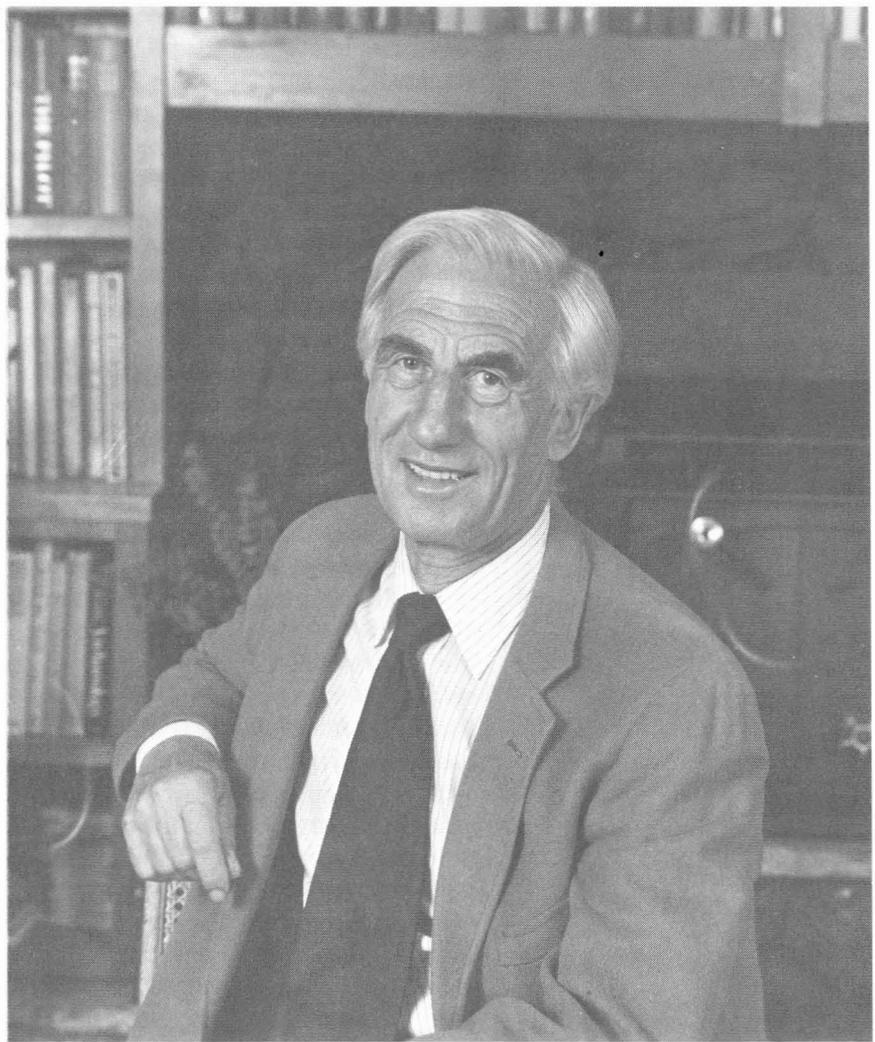
**Wornum chats with Conservancy Board member Margaret Azevedo on a tour of Sonoma County projects.**

Commission has faced has come from the fact that local governments, having said they don't want the Commission, have found—especially in Southern California—that when they get a real hot potato, it's nice to be able to throw it to the Coastal Commission.

**WA:** *Since you were appointed to it, has the mission of the Coastal Commission changed?*

**MW:** I don't think so. Its greatest achievement is what you don't see—overdevelopment and over-exclusion. Basically, its mission was to preserve the status quo, encourage the preserving of habitat, marshland. The [Coastal] Conservancy was to remedy past actions, provide access. I'm rather pleased with the Coastal Commission. Given that the four members appointed by the Speaker [of the Assembly] and President pro tem of the Senate, and by the governor are political appointments and can be removed at any moment at their pleasure, and given that we're dealing with millions of dollars' worth of property, given all this, I'm happy to find there hasn't been more political pressure. I think the process has worked very well.

**WA:** *As an architect, do you think the Commission has improved architecture on the coast?*



**MW:** No, I don't. One of the requirements of the Act is compatibility with existing communities. Our staff, I get the feeling, interprets that to mean that every man-made object should be dark brown and only ten feet high. But some of our greatest Western achievements are very conspicuous. Hearst Castle would be disapproved of, and the Golden Gate Bridge, too. I got into a big argument in San Diego on a Russian Orthodox church. They wanted a big one with a big, blue dome, and our staff were having fits about it destroying the natural landscape. I pushed it forward and it was approved. Chartres destroys the natural landscape and so does Westminster Abbey. You need some punctuation in a landscape. Staff has been arguing for fixed parameters, I've been arguing for architectural embellishments. With a height limit, if you're really strict about it, everyone has a flat roof. Why not

***"I really hate to think of poor old Mies van der Rohe or Corbusier or even Frank Lloyd Wright trying to build something now on the coast. I think they would be turned down as too controversial, too extreme."***

have minarets and pinnacles and gables? Unless you have a really efficient design review board that would encourage better architecture, you're better off not getting involved in design. I really hate to think of poor old Mies van der Rohe or Corbusier or even Frank Lloyd Wright trying to build something now on the coast. I think they would be turned down as too controversial, too extreme.

**WA:** *How have the budget cuts of the past few years affected the commission, and do you think any of them were justified?*

**MW:** No, I don't think so. Gov. Deukmejian—I have to give him credit—he came into office on the platform that he would get rid of the Coastal Commission and he has certainly tried not to break his pre-election vow. But of course since the Commission is a statutory agency, he couldn't just abolish it, so he has been trying a death by a thousand cuts, by taking 10 percent from the budget every year. All that means is that we can't do our job as effectively, and, actually, he's hurting the very people he says he wants to help. The developers, for instance, get delayed because there is not enough staff to process applications, and local governments again get delayed in finishing their local coastal plans, which

is the only way to return coastal protection to local governments. The governor and we, too, want to do so, but these cuts have delayed the process. So the cuts are self-defeating and very stupid. Also, there was a Senate committee review of the Commission, and it concluded that we are not doing what we should be doing, which is to take the long view of where we're going statewide. These cuts limit us to putting out local fires.

**WA:** *For the first half a decade or so the Commission was looked at as a pretty tough bunch. Has that changed? This year, for instance, Sen. Ed Davis, who used to be one of the main opponents, carried a bill for the Commission. Has the Commission sold out, or has the opposition given up a bit?*

**MW:** No, I don't think so. When local government officials became half the members of the Commission in 1981, the regional commissions self-destructed. Before that, staff recommendations were sacrosanct, and if the Commission overruled them, that was heresy. Staff were bureaucrats in the way they kept the letter of the law, and this was particularly onerous on small projects—the little widow who wants to rebuild a house or put a deck on, a new roof on. These horror stories got bad press. Coastal staff were bureaucratic in that they

**One architectural adventure that might not make it today: Hearst Castle, at San Simeon.**



CALIF. DEPT. OF PARKS AND RECREATION

used the domino theory: If they let this one person have a one-foot extension, then everybody would get one. The Commission members, most of whom were in local government, were used to handling recommendations and the public, and to overruling staff if they felt it necessary, and having their own opinion. In smaller applications, they said, let's have a bit of equity.

**WA:** Was that a conceptual change?

**MW:** The quality of mercy, you might say, has helped things considerably. We listen to the public, weigh recommendations, give reasons. So even if the person might lose on his application or appeal, he at least understands the reasons.

**WA:** Do you think regulation has been too tough on rural areas?

**MW:** A lot of the controversies have been between preserving the natural environment versus visitor serving. You can't buy all the places you want to save, there isn't enough money, so you have to negotiate. In some instances—Cascade Ranch in San Mateo County is a good case study—you buy most of it, and in return you can do some developing, and as long as it's visitor-serving—which is one of the priorities in the Coastal Act—that makes sense. Some of the zealots objected in the case of Cascade Ranch. But without compromise we lose more than we gain.

**WA:** Has the Supreme Court decision in *Nollan* [*Nollan v. California Coastal Commission*, 55 U.S.L.W. 5145 (1987)] chilled the Commission's resolve in opening access by requiring a greater nexus with the conditions the Commission and other agencies impose on permit applications and the actual damage the proposed project might cause to coastal access?

**MW:** It just made us more careful legally in trying to make the nexus. I'm not sure that was wrong. Government was getting a bit confiscatory in requiring things that really were not affected by the development. So I think the decision's effect was fairly salutary. We still get public access, but now there is a lot more forethought to

make the connection between what is wanted and what should be given. Sometimes staff will say there really is no connection, but there have not been that many times that has happened.

**WA:** You have been a big proponent of public access over the years, and in a few cases have insisted in projects before the Coastal Conservancy on access to what some people consider sensitive natural areas, specifically the Nature Conservancy's Lanphere-Christiansen Dunes Preserve. What is your philosophy on access in natural areas?

**MW:** I think in many cases you can have dual use. The Coastal Act says two things: provide maximum public access and protect resources. These are often incompatible, so a balance has to be struck, and the question is, where. These dunes were an area degraded by off-road vehicles, and they were part of the beach. The Nature Conservancy didn't want any public coming in without a permit that you'd have to get ten miles from there, in an office only open during business hours. Well, a little moderation was in order. This sort of thing happens quite often in the Coastal Commission. From a political point of view, if you allow the public into protected areas, you are raising a much larger support group. You either use your constituency, or you lose it.

Open space is being used much more for high-tech activities—mountain bikes, hang gliders—and we have to learn to live with that. The Audubon Society in Marin County—I really think it wants to take everyone out and make it one big bird preserve. But obviously man is part of nature, and people who don't just walk, but want to ride a horse or a bicycle, they should be encouraged. All these endangered species—I think we go a little overboard on them. We lose endangered species by the thousands under good old Darwin's "survival of the fittest" doctrine. For every one that gets out, another gets developed. I would like to be more selective. For condors, golden eagles, peregrine falcons, I think everything should be done. But I really don't know if the world would be worse off without kangaroo rats, black legless lizards, or mosquitoes.

***"The Coastal Act says two things: provide maximum public access and protect resources. These are often incompatible, so a balance has to be struck, and the question is, where. . . . The Audubon Society in Marin County—I really think it wants to take everyone out and make it one big bird preserve."***

**"The trouble with some of the bond issues is earmarking. This last one (Prop. 70) was not very democratic."**



*\*Peter Grenell, the Conservancy's executive officer, comments: The Coastal Conservancy was created to resolve coastal land use and resource conflicts in a nonregulatory manner, through its projects. From the very beginning of its project development process, the Conservancy works with all interests to solve problems before final action by the Conservancy board. This process includes extensive public meetings, workshops, local government reviews, and negotiations. Therefore, board meetings are not contentious or adversarial proceedings, as those of regulatory bodies such as the Coastal Commission often seem to be. Staff work is directed by board policy guidance, as well as by occasional board instruction regarding specific issues of concern, such as links between access and habitat protection.*

**WA:** *Should the chair of the Commission be an environmentalist? Should the Commission be composed of more technical rather than political people?*

**MW:** No, the whole basis of government in the United States is that laymen are in charge. The jury system is not composed of lawyers, hopefully.

Congress, local government, are citizens. They are aided and abetted, guided and misguided by technical and professional people, but civilians, you might say, make the final decisions.

**WA:** *Has the Coastal Conservancy met your expectations?*

**MW:** I think so. We're always fighting off political interference—Circle X Ranch was sneaked in as a legislative mandate, for instance—but I think it's been fairly successful. In the Conservancy, most of the decisions are made by the staff. I don't know if that's good or bad; they've done an excellent job, but I'm not sure the process fits my democratic ideals. By the time most projects reach the board they are virtually a done thing. The staff has gone through an awful lot of work, the money is there, everyone says they are in favor, the board just has to rubber stamp it. Someone down there has to decide who gets rejected and who gets accepted, but that process is not visible to the board members. Of course, if it's not broken, don't fix it. The process works as long as the staff has integrity and competence. But sometimes I have felt my job is just to rubber stamp decisions, which I have not felt on the Coastal Commission.\*

**WA:** *What kind of future do you see for the Conservancy?*

**MW:** It doesn't make too much sense to always rely on bond issues, which mean feast or famine as they run out. I would like to see the Conservancy supported through a regular funding source, whether it be the gas tax or income tax. But whether that's politically feasible I'm not sure. The trouble with some of the bond issues is earmarking. This last one [Proposition 70] was not very democratic.

The environmentalists got together and the strongest among them chose their favorite projects and directed us to do them. I think it's fine that measure passed and all the money is going to good causes. But what are the best causes is what the Conservancy, with its trained staff and public hearings, tries to determine. With limited public money available, the important thing is to determine priorities.

**WA:** *What will you do now that, for the moment, you're out of politics?*

**MW:** I'd like to travel around the world. I have an art show at the moment, stained glass, and I'd like to go back to watercolor. I do have a profession as an architect; I'd like to remodel a Victorian or build another house. I will get another horse. I've taken up sculling and I like to sail. And who knows, I might get pulled back to politics after a bit, but for a while I have every resolve to keep away!

**WA:** *And have you had a good time?*

**MW:** I've always said politics is being in the right place at the right time. A lot of people never make it because they just don't happen to be there when something happens. You meet a lot of interesting people. I'm encouraged because I have not seen the venality and the corruption one hears people talk about in politicians. I'm sure it exists, I'm not naive about it, but I think the process works pretty well. It's very open; we have a powerful press that's always pushing, annoying to politicians sometimes but salutary: You don't get away with much. Open-meetings acts, I think, are important. Contrasting to England—where decisions are made by local councils behind closed doors, no testimony given and no reason given for the decision—we are so much more democratic. Not only do we openly deliberate, but we have to have findings listed as to why we did whatever we did. It's not perfect, but I think given human frailty it's as near a good system as you're going to get. In the end, the caliber of the decisions is the caliber of the people making them. □

*Neal Fishman is legislative coordinator for the Coastal Conservancy.*

## CrossCurrents

FOR BLYTHE, C/O JON AND LESLEY  
MARCH 1, 1982

Sky clear, wild springy blue  
from Palos Verdes to Malibu.  
With "Sail On Sailor" on his  
boom box, a big blond boy shoulders  
his board across the Pacific Coast  
Highway, and down to the cove where  
the waves crash in on Redondo Beach—  
purple lupine and windy green  
bluffs; and, laughing, the boy  
jogs into the surf and starts  
pumping out toward the horizon where  
the vanilla blue sky meets the sea  
on the day of your birth! So,  
Hail To Thee, Blythe Taplin,  
O child born of great parents,  
Come join your ancestors.  
Welcome to Southern California!

*Lewis MacAdams*

### WHALE WATCH AT BODEGA HEAD

How the wind cuts through  
the layers we put on this morning  
when we crept from warm beds,  
trailing dreamweeds, leaving our lives  
to stand at the edge of one element  
and gaze into another. What are we  
looking for in the fogged water?  
Before it gets too cold to stay  
we want an answer. Among the rocks  
waves surge, swirling green and white.  
Gulls ride invisible currents, light  
farther down the bluff. This could be  
the headland where Coyote stood  
to toss in the log the old ones say  
became your living body.

Wind stiffens, driving us to seek  
shelter and hot tea. As we turn away,  
someone shouts, "She blows!" Over the sea  
a white breath plumes the air,  
plumes it again, again. A shining  
black body breaches, flukes rise  
and you go down. My blood races  
to follow your warm blood  
into the depths, into the dimmer light.  
Cousin, though we may never meet or touch,  
to share the same world and time  
is miracle enough.

*Barbara Meyn*

*Reprinted from The Abalone Heart, Ahsahta Press,  
Boise State University: 1988.*

## Video Reviews

### Wet 'n' Wild

• **Wild California** (narrated by Peter Coyote)—36 minutes.

• **Wild California: A Musical Journey into the Natural Beauty of California's Wilderness**—40 minutes.

• **The Worlds Below**—60 minutes.

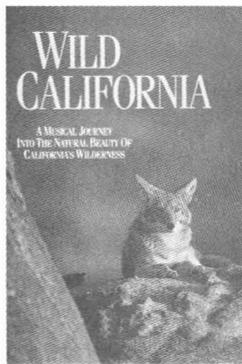
All three videotapes are produced by Sea Studios, "a company of film makers, photographers, biologists, and writers dedicated to communicating the beauty and interest of natural history," says a brochure. *The Worlds Below* explores the waters off the central California coast, taking the viewer down from the shore, across submerged plains, and into the depths of the Monterey Canyon.

*Wild California* in its narrated version is the video installation accompanying the exhibits of the Wild California Hall in the California Academy of Sciences. It consists of the footage that can be viewed in the Hall on monitors beside each diorama, with natural sound recordings and a narration by Peter Coyote. In the *Musical Journey* version, music replaces the narration.

In many ways, I found the narrated *Wild California* to be the most successful. The videography is beautiful and highly informative and would serve as a great classroom exposition. Of course the Sea Studios' music video release is visually just as compelling. As a film maker, I can truly appreciate and respect the effort and ingenuity that were required to capture these images. Mark Shelley, the founder and principal videographer for Sea Studios, has a keen eye for nature's wonders. A cameraman in the ocean has to contend with unpredictable and sometimes potentially dangerous animal behavior and also with all sorts of climatic conditions that are unfriendly to electronic video equipment and to its

operators. Obviously, the people at Sea Studios are well prepared for the work they do, and yet, as a finished piece, *Wild California: A Musical Journey* falls short of its glossy promise. Because of the beauty of the videography, this is especially unfortunate.

The videotape consists of 12 "journeys" that explore the rich diversity of



California's wilderness, including elephant seals and cormorants in the Farallones, intertidal life on the coast, the autumnal moods of Yosemite, marshes, and deserts. As a

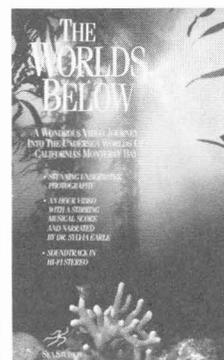
biological presentation, the exposition is well thought out, even though the repeated use of the California map at the head of each section is tedious and generally unreadable. But the real trouble is in the largely insensitive editing and poor use of sound. It is as though the editors do not really understand the shots they are dealing with. Often they jump from one scene to another without regard to light conditions or the movements inherent in the images. This is a classic example of editors investing themselves into the material rather than letting these beautiful shots speak to them and reveal their inherent connectedness.

The same holds for the use of music. I wonder what a jazzy saxophone has to do with elephant seals. Why not compose music with the seals' own barking? And I do not get the relationship between '60s-style guitar surf music and the Pacific shores, except that, of course, it is surf music. Things get a little better with the woodpeckers punctuating the Scarlatti "Dialogues," and with Strav-

insky's "Rite of Spring" over the scenes of elegant egrets. But even here the drama implied by the juxtaposition of music is much too human and literal. By far the most successful is the "Tule Marsh Journey," with its blend of natural sounds providing the music for the fascinating videography.

In contrast, *Worlds Below* uses an interesting approach in dealing with sound. The entire video is first presented with music, and then we see the program again, this time accompanied with a narration by Sylvia Earle—a prominent scientist. This is an interesting technique in that it allows the viewer first of all to enjoy the images themselves and then, later, to hear the facts.

This is a welcome change from the usual nature film narrated by a voice with inflections so familiar that you don't hear it anymore, which robs you of the primal visual experience. But unfortunately, here, too, the New Age music completely mars the experience of gliding through the fluid underwater world. The second time I watched the



video I simply tuned the music out, and only then did it really come to life! Sylvia Earle's narration in the second run provides succinct information, but with all respects due to this great oceanographer,

her tone is somewhat dispassionate and monotonous. Peter Coyote was far more engaging.

Clearly, the makers of *Wild California* and *Worlds Below* are experts in the field of natural history. Unfortunately, aesthetically speaking their music video releases cry for a more soulful and sensitive editing and especially for a

profound revision of auditory components.

The musical version of *Wild California* and *The Worlds Below* are available from Sea Studios, 810 Cannery Row, Monterey, CA 93940 (800 / 331-3568) for \$29.95 each. *The Worlds Below* is available from The Nature Company packaged with an informational booklet for \$39.95.

The narrated version of *Wild California* is available in a complete, 36-minute version that depicts 12 habitats, both terrestrial and marine, and in two shorter versions, *Wild California: The Land* (19 minutes) and *Wild California: The Sea* (18 minutes). Purchase price of the full version is \$195; rental \$40. Purchase price for the other two is \$125 each, rental \$35 each. A two-page teacher's guide is included. Available from University of California Extension Media Center, 2176 Shattuck Ave., Berkeley, CA 94704. (415 / 642-0460).

*Reviewed by Andrej Zdravic, director of video production at the Exploratorium in San Francisco, who has been making personal films since 1973, with emphasis on energy relationships between natural phenomena and sound. He is currently completing a film on the oceans.*

### **Unique School Program**

• **A Focus on Environmental Education—Kimbark Elementary School,** produced by Nancy Pearlman for *Econews* (1988). 27 minutes.

What if a school focused its entire curriculum around the study of the natural environment? It's often been imagined, but one elementary school actually did it. For more than a decade, children in the San Bernardino City Unified School District's Kimbark Elementary School have been learning math, computer use, writing, art, science, and eve-

rything else K-6 children are expected to know by learning about nature. They study while getting their hands dirty and their feet muddy. They built a check-dam to stop erosion on a nearby hillside, grew tree seedlings, tested for acid rain. This cheerful portrait of the program demonstrates that children learn with intense delight and accomplish much more than is usually thought they are capable of, given the opportunity and inspired teaching. Viewers will not learn from this tape how to get a similar program for other schools, but they may be inspired to try to find out.

A Focus on Environmental Education—Kimbark Elementary School is available on 1/2- or 3/4-inch videotape from Educational Communications Inc., PO Box 35473, Los Angeles, CA 90035. \$30 plus \$2 tax and handling.

### **Turner Goes Interplanetary**

Coming soon: "Captain Planet and the Planeteers," a pro-environmental weekly cartoon series from Ted Turner. Captain Planet and his pals will battle such villains as Hoggish Greedly, Looten Plunder, Sky Sludge, Verminous Skumm, and Duke Nukem in episodes focusing on such hot topics as oil drilling, deforestation, acid rain, solar power, the greenhouse effect . . . the possibilities, unfortunately, are endless.

Tom Cruise, Whoopi Goldberg, Richard Gere, Ed Asner, and Levar Burton have agreed to play voices for the series, which will air next fall on Sundays on Turner's TBS superstation, and on Saturdays on broadcast stations around the country. □

***"From the austere to the lush,  
from the violent to the serene,  
this is a state of diversity. . . .  
From parched sand to tidal pool  
. . . off canyons and island cliffs  
the sounds of life abound. . . .***

***Wild California—a physical  
reality, a spiritual reality.  
Explore it, cherish it, protect it."  
from Wild California***



# Ebb and Flow

*Continued from Page 5*

chaparral covered hillsides, coastal bluffs, and two black sand beaches. The beaches are used by Northern elephant seals, rare plants grow on the bluffs, and endangered peregrine falcons nest in eyries on the site. Limited day-use facilities will be provided.

## **Manila Dunes**

The Manila Community Services District will prepare an access development plan and property appraisals for eight parcels totaling 160 acres in the Manila Dunes, on the North Spit of Humboldt Bay, with \$30,000 authorized by the Conservancy in January. As part of the plan, the district will investigate site feasibility for converting a school facility to a hostel or interpretive center.

## **Elkhorn Slough Wetland Management Program**

Monterey County will restore the 155-acre Blohm-Porter Marsh, a major wetland at Elkhorn Slough, to brackish/freshwater condition with up to \$256,100 approved by the Conservancy to Monterey County. Leaking and damaged tidegates and culverts will be replaced and a new drainage system will be installed. The county is contributing \$45,000 toward the project.

## **Pajaro River Enhancement**

The county of Santa Cruz will prepare two enhancement plans for the Pajaro River with \$90,000 authorized by the Conservancy in September. The Lower Pajaro River Corridor Plan will identify ways to maintain and enhance the significant riparian habitat areas along the lower 12 miles of the river and will

recommend appropriate low-cost flood reduction measures. The Pajaro River Lagoon Plan will outline ways to improve the productivity and biotic diversity of the river mouth lagoon, and answer questions about its hydrology and about flood prevention methods. The county will work closely with the Pajaro River Task Force, which includes representatives of Santa Cruz and Monterey counties, Watsonville, key regulatory agencies, farmers, and residents.

## **Napa Waterfront Restoration**

The city of Napa, seeking to improve public access to the Napa River, will prepare the Napa Urban Waterfront Restoration Plan with the help of \$50,000 authorized by the Conservancy in September. The plan will include an implementation program that identifies project costs, funding sources, and development phases.

## **Swami's Beach Stairway**

There has been no official access to Swami's Beach, a highly popular surfing spot in San Diego County, since August 1989, when the old stairs were closed as unsafe. A new stairway will be constructed slightly north of the old ones, along the 80-foot-high bluff, with the help of \$160,000 approved by the Conservancy to the city of Encinitas in December. One of several stairway landings will feature a shower.

## **Santa Monica Hostel**

The new Santa Monica International American Youth Hostel is in the heart of downtown Santa Monica, one block from the ocean and from Palisades Park. It is within walking distance of some of the

region's most famous beaches and easily accessible by public transportation. The Conservancy has approved the urban waterfront restoration plan for the hostel and authorized transmittal of the project to the California Urban Waterfront Area Restoration Financing Authority for revenue bond financing consideration. The four-story hostel, with 200 beds, has been designed for a diverse group of users including individuals, groups, families, and senior citizens. It will be fully wheelchair accessible.

## **Tijuana Visitor Center**

The Southwest Wetlands Interpretive Association will build a workshop/garage addition to the visitor center at the Tijuana River National Estuarine Research Reserve with \$49,500 from the federal office of Ocean and Coastal Resource Management. The Conservancy authorized acceptance of this grant in December.

## **Central San Luis Obispo Access**

At the request of San Luis Obispo County, the Conservancy in January authorized reassignment of \$119,775 from the Lampton Park Access project as follows: (1) \$39,217 to Shamel Park Access; (2) \$45,405 to the E Street Accessway; and (3) \$35,153 to the Conservancy for future projects. The county requested this reassignment so that it could take advantage of previously unavailable state park bond money to improve access at Lampton Park. The Conservancy will use the disencumbered funds to complete Phase II of the Shamel Park project and to construct a new priority handicapped accessible beach stairway to Cayucos, an unincorporated community. The county has contributed \$50,000 to these projects and has agreed

to accept 69 offers to dedicate access easements and to operate and maintain these projects in perpetuity.

### **Tuna and Cold Creek Canyons**

The Mountains Restoration Trust will prepare a restoration plan for portions of two coastal canyons in the Santa Monica Mountains with up to \$60,000 authorized by the Conservancy in January. Cold Creek and Tuna canyons have been designated as "significant watersheds" in the Malibu/Santa Monica Mountains Land Use Plan.

### **East San Rafael Shoreline**

The city of San Rafael will prepare a resource enhancement plan for a tidal pond and two brackish ponds on the east San Rafael shoreline in Marin County with the help of up to \$40,000 authorized by the Conservancy in January. Since the shoreline levee was built in 1958, encroaching fill and development have decreased the value of the ponds for shorebirds and waterfowl. The plan will include recommendations to improve the wildlife habitat and public access along the levee.

### **Coastal Education**

The Nautical Heritage Society will develop Coast Line '90, a classroom program to foster ocean/coastal literacy, with the help of \$10,000 approved by the Conservancy in January. The society will sail the *Californian*, the state's official tall ship, along the coast, calling on many ports to promote interest in the marine environment. The Conservancy funds will go to education, research, and program materials to increase awareness about coastal resource protection.

## **IN OTHER NEWS**

### **Saving the Lost LA River**

The Los Angeles River drains the San Fernando Valley and flows through downtown Los Angeles, reaching San Pedro Bay at Long Beach, next to the Queen Mary. Yet many local residents do not realize the river exists. This should not be surprising: All but six of its 55 miles are encased in cement.

Lately, however, this near-dead imprisoned river, like many living streams, wetlands, and endangered species, has acquired friends. Led by poet Lewis MacAdams, the Friends of the Los Angeles River seek to revive the river.



RON KUKULKA

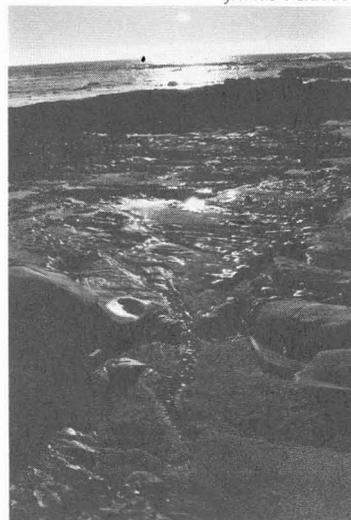
They are working to protect and expand the living sections, replace cement walls with gabions (rock-filled wire baskets) where possible so that

water can infiltrate soil and support trees and plants, and reforest the watershed in the San Gabriel Mountains, to reduce the risk of floods.

Tom Bradley, the Mayor of Los Angeles, shares the vision. Last year he promised to "turn the LA River into an oasis of beauty and opportunity." In January he announced the first steps toward that goal: the creation of a citizens advisory committee, and of a river task force, and support for a river conference being organized by the Southern California Institute of Architecture.

Perhaps one day, sycamore trees will once again grace the banks of this major river. "One can find Sycamore seedlings in the river mud—living testimony to the possibility of restoring this dynamic ecosystem," wrote botanist N. Christine Perala in the first issue of the Friends' newsletter. □

JAMES MILTON



### *Equinox*

*it was  
the kind of night  
that confused fish  
high moon  
wind driven  
white water  
to dry tired rocks  
low tide  
pale blue jet trail  
equinox  
at continent's edge  
think  
90 feet down  
currents  
he said.*

*Richard Retecki  
and Mark Wheatley*

## Conference Log

Continued from Page 7

along with a clear mitigation sequence prior to consideration of restoration or creation.

- A clear, predictable process and sequencing of mitigation alternatives is needed for permitting at all levels of government to provide certainty and fairness to landowners; to coordinate permitting between various levels of government; and to facilitate more efficient use of regulatory personnel and government funds.
- A cautious approach to wetland restoration and creation is needed due to the high risk of project failure, particularly where restoration is proposed to compensate for destruction of a naturally occurring wetland.
- The greatest opportunities for wetland restoration or creation lie not in the regulatory context, but rather in public or cooperative public and private projects where existing wetlands have been damaged or degraded.
- There is a strong need for technical training and education for a broad range or groups to support implementation of the no net loss goal.

For more information: Association of State Wetland Managers, PO Box 2463, Berne, NY 12023-9746. (518) 872-1804.

### Ocean Alliance Report

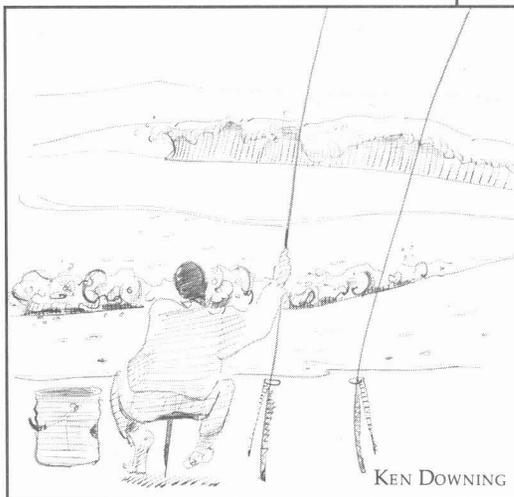
Are we prepared to handle a major spill in San Francisco Bay? The answer, delivered at the first Bay Oil Spill Prevention Summit Conference, was a resounding "No."

San Francisco Bay's narrow channels, fog, and strong currents render it especially susceptible to a spill and would make its containment difficult. Spilled oil would not float out to sea, but would remain in the bay.

More than 1,000 oil tankers pass through the Golden Gate every year, so

when it comes to spills, "It's not a matter of whether, it's when and how big," said Margaret Elliott, executive director of Ocean Alliance, which called the one-day conference, cosponsored with 23 other organizations and held at Fort Mason in San Francisco January 27.

The gathering brought together Californians who worked on oil spill



KEN DOWNING

response and clean-up in Prince William Sound, representatives of oil companies whose tankers ply the coast and bay, experts with recommendations for California preparedness, fishermen whose boats and knowledge of coastal waters can protect critical areas, marine mammal researchers, bird rescue experts, marine safety specialists, mental health workers, and public officials.

The 21 panelists shared their experiences and explored opportunities to work together to protect the environment from an oil spill, identify ways to reduce the risk of a spill, and develop effective response plans.

For information on how to get involved to help prevent and respond to a Bay Area oil spill, call Ocean Alliance at (415) 441-4970. The Alliance was formed by the merger of the San Francisco Bay Chapter of the Oceanic Society and the Whale Center.

### Coming Up:

National Marine Educators' Association conference on "Islands in the Sea," August 5-12 on Hawaii's Big Island. Marine educators from around the country and abroad will exchange ideas and explore new teaching methods at all levels. Main topics will include island ecology, global climate changes, and advances in technology. Participants will hike through an active volcano and in rain forests, spelunk in ancient lava tubes, walk on new black sand beaches, and explore the diverse range of marine and aquatic environments on this subtropical island. For more: Ann Coopersmith, Box 149, Paia, HI 96779. (808) 579-8577.

The Waterfront Center's annual conference for companies and cities involved in **urban water-**

**front projects** and planning, October 11-13 in Washington, DC. Optional tours of Baltimore, Annapolis, and Washington. For more: The Waterfront Center, 1536 44th St. NW, Washington, DC 20007. (202) 337-0356.

**Land trusts** and other land conservationists will gather to share knowledge and experience, improve skills, and prepare for coming challenges at the National Rally 90, sponsored by the Land Trust Alliance (formerly Land Trust Exchange) at Villanova University, Villanova, Pennsylvania, June 16-19. Rally 90 features general sessions and workshops covering conservation techniques, tax policy, appraisal issues, public/private partnerships, and other issues. For information: National Rally 90, PO Box 419, Laurel, MD 20725-0419 or call The Land Trust Alliance at (703) 683-7778. □

## Book Reviews

### **Two Coastal Crisis Plans**

**Ebb Tide for Pollution: Actions for cleaning up coastal waters**, *Natural Resources Defense Council, New York: 1989. \$7.00, 43 pp*

**The Wasted Ocean**, by David K. Bulloch. *Lyons and Burford, New York: 1989. \$9.95, 150 pp*

Two publications that should interest resource managers and coastal conservation practitioners are now available through the support of the Natural Resources Defense Council (NRDC) and the American Littoral Society. Both echo the increasing, and well documented, problems affecting our coastal waters, estuaries, and wetlands. Each also contains an agenda for arresting the damage that is becoming all too visible on our shorelines.

*Ebb Tide for Pollution: Actions for cleaning up coastal waters* is a short, glossy, tightly organized report that was a cooperative venture of five NRDC aquatic projects nationwide. The foreword by Jean-Michel Cousteau is succinct, and the introduction is surprisingly objective. The refreshing lack of doomsday prophecies makes this report all the more hard hitting. Facts and data are presented compellingly, and the descriptions of the myriad technological complexities of pollution are well conceived and intelligible to the nonspecialist. The booklet should be useful to planners and administrators.

*Ebb Tide for Pollution* provides the reader with an overview of our nation's situation while reinforcing the seriousness of population trends leading toward coastal relocation. These trends, if unattended, will result in unfortunate consequences for a society that is dependent upon the economic and aesthetic resources of our shores.

*The Wasted Ocean* goes into greater

detail on almost all the same issues, and quite a few more. The technical explanations, most of which are nicely conveyed, are undoubtedly due to the author's background as an industrial chemist. The book includes a glossary for the technocratic jumble of acronyms we all must wade through on such subjects.

Likely due to its larger treatment of the subject, *The Wasted Ocean* gets into trouble in some biological inferences. The "Coastal Survey" chapter provides site-specific descriptions of the damage wrought to coastal fisheries—sometimes not right on target. Describing the changes witnessed in San Francisco Bay since the Gold Rush, he states that the only remaining important fisheries are for herring and anchovy. Although not without problems—including the recent declaration by the California Department of Fish and Game that the winter run of Chinook salmon in the Sacramento River is endangered—the tributaries of San Francisco Bay provide habitat for sport and commercial fisheries.

Another section briefly describes algal blooms and red tides. Inferences are then cast on the correlation of these populations and the possibility that abundant nitrogen triggers these events. In the midst of this discussion the seriousness of paralytic shellfish poisoning is thrown in without adequate qualification that these special "red tide" circumstances, although very serious, are even less well understood than most algal blooms. Red tides have been recorded since biblical times. Their frequency and intensity may be cyclical.

These examples of the message overshadowing the facts are few and should not detract from the book's goals of establishing a credible action agenda. Bulloch's book contains over 50 recommendations for the "aquaphile's agenda" and ends with a menu for grassroots action. *The Wasted Ocean* is sort of a "bottom up" guide to coastal awareness

and political action. One senses that Bulloch attempted too much and that the result reflects a shotgun approach to a subject that demands more focus.

In contrast, *Ebb Tide for Pollution* includes a shorter plan, that, like the text, is more definitive. This reviewer found the NRDC's recommendations for the consumer commendable because they allow readers to consider how the stuff that goes down the drain may ultimately determine their enjoyment of the Sunday walk on the beach or the quality of seafood they select at the market. The NRDC also includes a citizen action plan to influence policy.

Both publications are useful references for anyone interested in pursuing the alternatives of either watching our aquatic resources slip into decay through neglect and misuse or turning this regrettable situation around. Remedies for our ailing coastal environments are obvious, as demonstrated by the mirrored prescriptions of these two texts. The patient is our society, and the cure requires its utmost cooperation.

*Reviewed by Paul Siri, assistant director—administration of the Bodega Marine Lab, University of California, Davis.*

### **Ocean Plastics Toolkit**

**A Citizen's Guide To Plastics In The Ocean: More Than A Litter Problem, Second Edition.** *Center for Marine Conservation, Washington, DC: 1988. Free, 143 pp*

This friendly little volume provides an overview of the plastics debris problem, telling what is being done and needs to be done, and offering examples of effective action by individuals, agencies, organizations, and industries. It shows that anyone willing to give even a little attention to this huge problem can play a part in its solution. □

# Index

This index covers the last four issues of *California Waterfront Age*. For indexes to previous volumes, see the Winter 1988 issue (Vol. 1, No. 4) and the Winter 1989 issue (Vol. 5, No. 1). Note: "Ebb and Flow," "Conference Log," and "Book Reviews" are not included.

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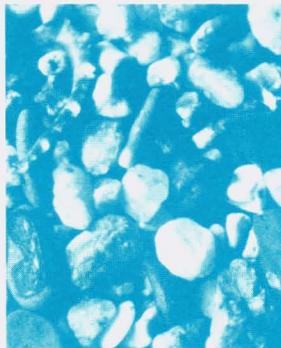
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## **Mystery Photo**

Super close-up of Don Johnson's chin? Got a better guess? Send it to us, and win a free subscription to your favorite magazine, *Waterfront Age*.

Last issue's mystery solved: Sand! Photographer Jeff Northam shot the substance on a San Mateo County beach—possibly Miramar Beach, but he refuses to commit. Correct responses came from Selina Bendix, of San Francisco; Charles R. Weller, Fort Bragg; R. James, Pacoima; Joseph Hammer, Boulder Creek; Mrs. Marilyn Georgevich, Seaside; Christopher Price, Santa Barbara; Joseph J. Chesler, Costa Mesa; and Shawn Cabalka, of Nipomo.



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