



FREMONTIA

A JOURNAL OF THE CALIFORNIA NATIVE PLANT SOCIETY



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SPECIAL ISSUE: STEWARDSHIP

FREMONTIA

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CALIFORNIA NATIVE PLANT SOCIETY

Dedicated to the Preservation of the California Native Flora

The California Native Plant Society (CNPS) is a statewide nonprofit organization dedicated to increasing the understanding and appreciation of California's native plants, and to preserving them and their natural habitats for future generations.

CNPS carries out its mission through science, conservation advocacy, education, and horticulture at the local, state, and federal levels. It monitors rare and endangered plants and habitats; acts to save endangered areas through publicity, persuasion, and on occasion, legal action; provides expert testimony to government bodies; supports the establishment of native plant preserves; sponsors workdays to remove invasive plants; and offers a range of educational activities including speaker programs, field trips, native plant sales, horticultural workshops, and demonstration gardens.

Since its founding in 1965, the traditional strength of CNPS has been its dedicated volunteers. CNPS activities are organized at the local chapter level where members' varied interests influence what is done. Volunteers from the 33 CNPS chapters annually contribute in excess of 87,000 hours (equivalent to 42 full-time employees).

CNPS membership is open to all. Members receive the quarterly journal, *Fremontia*, the quarterly statewide *Bulletin*, and newsletters from their local CNPS chapter.

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CNPS members and others are welcome to contribute materials for publication in *Fremontia*. See the inside back cover for manuscript submission instructions.

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Peter Raven, known throughout the world for his conservation efforts, considers why California has such a diverse flora and the current threats to natural habitats, yet concludes that stewardship of our “backyards” may be one of the greatest contributions we can make towards preserving wildlands.

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California’s prairies are precious, endangered communities thriving because of unsung human heroes. From the nutrient-poor, species-rich serpentine to the moist, colorful coastal prairies, these grasslands support most of California’s endangered plant species. California grassland stewards can teach us a lot about how future generations might live alongside these species.



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Community-based groups and high school students are working with private landowners and government agencies to restore native ecosystems on farms and ranches in the Central Valley. And, to the benefit of farmers, ranchers, students, and native species, the collaboration seems to be working.

CREATING A SENSE OF PLACE IN THE GOLDEN GATE NATIONAL PARKS <i>by Pete Holloran</i>	25
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The experience of stewardship comes alive in this series of quotations from volunteer stewards, accompanied by photographs of them working in the Golden Gate National Parks near San Francisco. It’s all about giving something back, finding joy and mystery in the natural world, and building towering piles of iceplant.



STEWARDSHIP PROFILES

Like many evocative words with a long history, stewardship means something different depending on who you ask. So we asked around and invited eight different practitioners to share a few thoughts about their philosophy and experience. While working on their own articles, Grey Hayes, Pete Holloran, and Dan Leroy conducted the interviews that were then crafted into these profiles in stewardship. Where appropriate, the stewardship profiles appear adjacent to the relevant article.

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THE COVER: Volunteers, staff, and students engaged in stewardship activities in the Golden Gate National Parks. Captions on pages 25-29 except upper left (Oceana High School students) and bottom right (students in the park’s LINC program). Images courtesy of the Golden Gate National Parks Conservancy and National Park Service.

GUEST EDITORIAL: MEASURING SUCCESS

How do we know when stewardship efforts are successful? Since the ecological world is so complicated, scientists measure vital signs to indicate ecological health, like a doctor checking your pulse. But ecological indicators aren't the only story. Social vital signs are just as important: smiles from strangers along the trail, donations from community foundations and corporations, a child's shout of delight upon spying a creek, satisfied volunteers eating watermelons after another warm day working out in the field.

In May 1993, when I attended my very first stewardship workday, I remember thinking it strange that several dozen people would give up part of their precious weekend to do such hard work. But within a few hours I quickly understood their perspective. It was a beautiful spring day, the company was quirky and entertaining, the work was pleasantly strenuous, and there were so many things to learn. It just felt good. Amid all the disappointing news about the environment, here was an opportunity to make some good news, to engage in something positive and life-affirming.

Maria Alvarez, who was leading the Habitat Restoration Team that day, as she has for more than ten years of Sundays, helped me understand that stewardship is as much about restoring our relationships with the land and each other as it is about restoring ecological processes. It was the seamless combination of the social and the ecological elements that made it so attractive.

This issue of *Fremontia* celebrates both the social and ecological dimensions of stewardship. Peter Raven suggests that although Californians live in a diminishing world—in which the meadowlarks are moving even further up into the hills, in his delightful turn of phrase—we can halt that decline by developing a strong stewardship tradition. In his review of grassland stewardship in California, Grey Hayes reminds us that such traditions still exist, among California Indians and some ranching families, and continue to emerge. Dan Leroy demonstrates that building bridges between private land owners and urban school children can contribute to ecological health as well as community well-being. A final pictorial essay illustrates how volunteers working with the Golden Gate National Recreation Area are remaking the landscape and each other.

These stories only scratch the surface. The last decade has witnessed an incredible boom in stewardship activities around California. Some still think that it is merely the leisure time diversions of earnest urbanites near San Francisco, but nothing could be further from the truth. There are hundreds of special places where individuals, schools, and entire communities are acting as stewards of natural landscapes.

After spending months thinking about land stewardship in California, I'm starting to feel a bit more ambivalent about the word itself. I began seeing the term everywhere, from advertisements for "wealth creation" companies to the political pronouncements of the Bush administration describing their forestry policies. The word stewardship is like a beautiful urn that retains its charm even when it's being filled with bad burnt coffee. Appreciating the mug doesn't mean that I have to drink from it. I like to think of these stewardship profiles, full of wry wit and honest work, as a reminder of how good coffee can taste. Let us know (at fremontia@cnps.org) how it tasted to you.

Pete Holloran

USEFUL WEBSITES AND CONTACT INFORMATION

Stewardship Resources:
See p. 29

California Native Plant Society:

www.cnps.org, with links to conservation issues, chapters, publications, policy, etc.

To sign up for "NPCC News," e-mail news on native plant science and conservation, send a request to npcc@cnps.org.

For updates on conservation issues:

Audubon Society www.audubon.org

Center for Biological Diversity
www.sw-center.org

Natural Resources Defense Council
www.nrdc.org

Sierra Club
www.sierraclub.org

Wilderness Society
www.wilderness.org

For voting information:

League of Women Voters
www.lwv.org, includes online voter guide with state-specific nonpartisan election and candidate information.

US Senate
www.senate.gov

US House of Representatives
www.house.gov

California State Senate
www.sen.ca.gov

California State Assembly
www.assembly.ca.gov

To write letters:

President George W. Bush
The White House
1600 Pennsylvania Ave. NW
Washington, DC 20500

Senator Barbara Boxer
or Senator Dianne Feinstein
US Senate
Washington, DC 20510

Your CA Representative
US House of Representatives
Washington, DC 20515

BIODIVERSITY AND STEWARDSHIP: A COMMON RESPONSIBILITY

by Peter H. Raven

When I was 14 years old, my family moved to a house near the west end of the Presidio in San Francisco, and I began to search for plants on the sandy and rocky slopes in that fascinating area. The following year, 1951, I found there an undescribed manzanita, now called the Presidio manzanita (*Arctostaphylos hookeri* ssp. *ravenii*), which was represented by only a single plant. Some 46 years later, that plant was featured in a wonderful documentary, *Don't Say Goodbye*, made by Susan Middleton and David Liittschwager. The film shows the elaborate preparations they took to photograph the plant, carefully putting boards down so they wouldn't compact the soil around it, and wearing protective gloves while rearranging the branches slightly for photography.

As I watched a preview screening, I thought, "Good heavens, when I first collected that plant, I would never have thought of taking such extreme care for any wild plant: the idea that it might be in danger of extinction simply never occurred to me. At the time, I simply walked up to the plant, snipped off a few branches, cut them up with shears, and put them into my plant press. It was lucky I didn't take the whole plant!"

What has happened in the intervening decades that caused such a dramatic shift in my environmental awareness and that of countless others? I was born in 1936, so I can remember the latter part of World War II and the late 1940s. In those days, the "cutting edge" of environmentalism was whether you should throw trash out of your automobile onto the street. Only gradually, and more intensely starting in the 1960s,

did most people begin to think about how the environment affected their own lives and take actions to improve the situation.

Even the Sierra Club was not much involved in conservation activities when I joined in 1948. The members were generally more concerned with such things as skiing, rock climbing, and outings than with conservation matters. For me, the Club provided wonderful opportunities to visit natural areas I hadn't seen before, to collect plants, and eventually to serve as a naturalist on some of the Base Camp outings.

The first actual conservation issue I can remember concerned the road over Tioga Pass. I recall saying to my father, after reading a story in the *Sierra Club Bulletin*, "It

is very bad—they're talking about widening the road over Tioga Pass." But when he asked why it was bad, I had to think about it. If you want to go over Tioga Pass, why wouldn't you want a wider road? To get somewhere as rapidly as possible was a generally held value at the time—even if it required cutting through pristine forests.

My personal awakening to conservation paralleled that of the country as a whole, progressing through the 1950s and into the 1960s. In the summer of 1959, while a doctoral student at UCLA, I joined a dozen students on a two-month study trip to Colombia. We took classes and explored the country, but had no knowledge of a vanishing rainforest, much less a consciousness that the world's environment was somehow

This essay is based on a talk presented on April 22, 1998, at an Earth Day event that took place in Berkeley at the University of California campus. Although the author was born in Shanghai, China, Peter Raven grew up in San Francisco, where John Thomas Howell was his early mentor in the Department of Botany at the California Academy of Sciences. After graduating from UC Berkeley (AB, 1957) and UCLA (PhD, 1960), Raven served as director of the Missouri Botanical Garden and Engelmann Professor of Botany at Washington University for some 33 years, following nine years at Stanford University. He has been an outspoken advocate for conservation and sustainable development throughout the world, co-authored best-selling textbooks, and received numerous awards, honorary degrees, and academy memberships in the US and abroad.





Tuolumne Meadows, Yosemite National Park (above). Photograph by B. Ertter. • Presidio manzanita (*Arctostaphylos bookeri* ssp. *ravenii*), known only from a single plant (left). Photograph by L. Vorobik.

threatened. The rainforest was there: if you wanted to go and study it, you could just go and study it.

Then in 1962 I joined the Department of Biological Sciences at Stanford, when the battle over DDT was already underway. I remember a professor from San Jose State University who used to appear on television eating spoonfuls of DDT powder to prove that those who wanted to ban it were overstating the danger. Battles raged around environmental issues as they became

matters of concern, and many were doubtful about the basic steps as America forged a durable environmental policy.

Several of us at Stanford began to worry about the projections of population growth and its consequences for the environment. One projection showed that if the human population kept growing at the present rate, the mass of human bodies would be expanding at the speed of light in a matter of a few thousand years. At any rate, our discussions of the relationship between human population levels, hunger, starvation, pollution, and many unfavorable consequences eventually led Paul Ehrlich to write *The Population Bomb*, published in 1968. With its vivid scenarios of these consequences, it helped to set the new agenda of environmental concern.

I observed first-hand some of

the short-term environmental impacts myself, when I taught in the Organization of Tropical Studies basic ecology course in Costa Rica in 1967. One could really see how much forest was being cut down because of the rapidly growing population and rising affluence in the country. Biologists began to realize that the disappearance of tropical forests and the alteration of other communities would drive many species of organisms rapidly to extinction. This was recognized as an important issue that continues to motivate much conservation activity now, and will clearly continue to do so in the future.

Another very necessary ingredient in the public's growing environmental awareness, social justice, also began to come to the fore during the 1960s. People began to realize that unless the world's resources were distributed more

equitably, there would be little chance for the kind of stable civil society in which environmental challenges could be met adequately. This in turn set the stage in this country for the enactment of our basic environmental legislation, including the National Environmental Policy Act, the Clean Water Act, the Clean Air Act and the Endangered Species Act. Within the framework provided by this legislation, environmental matters have remained an important part of our national agenda subsequently.

Nowhere is this truer than in California, where the unique and fragile environment has heightened the sense of environmental awareness beyond that in most of the Nation. In order to maintain the sustainability of their beautiful state, the explosively growing millions who will live there will have to do even better.

WHAT MAKES CALIFORNIA SPECIAL?

To understand what makes the California flora special, as well as uniquely vulnerable, it is necessary to look far back in time, when similar assemblages of plants and animals occurred throughout Eurasia and North America. The world biological scene started shifting rapidly in the mid-Miocene Period, some 15 million years ago, with the origin and spread of continental glaciation in the Southern Hemisphere. This glaciation, triggered by the impact of tectonic realignments on oceanic currents, was accompanied by spreading aridity on a continental scale and was ultimately

followed by widespread glaciation in the north as well.

In the face of these changes to worldwide climate, the hemisphere-spanning flora and fauna gradually became fragmented and were also affected locally by the presence of newly-rising mountain ranges. Only widely separated regions, called Tertiary refugia, still harbor significant representatives of this original biota, and even these have been depleted differentially over time.

Although China, the United States, and Europe are all about the same size, Europe has 11,500 species of plants, the United States about 18,000 species, and China about 30,000. More have survived in China, and more have evolved there. For example, the dawn redwood, or *Metasequoia*, which was the dominant tree in much of western and northern North America 40 million years ago, ultimately vanished from the continent. It is now represented in nature by only about 6,000 trees surviving in south-central China.

Another result of realigned oceanic currents was the formation of

Mediterranean climates on the western sides of continents in the world's oceans. In the latitude of the prevailing westerlies, winds coming in over cold currents increased their moisture-holding capacities when they passed onto warm lands. The result was that rain became very limited during the warm part of the year and fell mostly during the cool season. Such Mediterranean climates are unusual on a world scale, occurring in California, southwestern Australia, central Chile, the Cape region of South Africa, and of course the Mediterranean region itself.



Shasta snow-wreath (*Neviusia cliftonii*), a recently discovered species, restricted to moist canyons in northern California (top right). • Coast redwood (*Sequoia sempervirens*) forest in the hills east of San Francisco Bay (right). Photographs by B. Ertter.



Wildflower groups with great species diversity in California are exemplified by the following four genera: *Phacelia*, with a species from the San Gabriel Mountains shown here (top left), is represented by over 90 species in California. Photograph by B. Ertter. • *Trifolium*, represented here by *T. fucatum* (top right), includes over 40 species in California. Although many think of all clovers as introduced, at least 32 species of native clovers occur in our state. Photograph by B. Ertter. • *Eriogonum*, with Conejo buckwheat (*Eriogonum crocatum*) shown here (middle left), is represented by over 110 species in California, and includes species such as the sulphur buckwheat which have numerous subspecies (*E. umbellatum* has 17 subspecies in California). Photograph by L. Vorobik. • Manzanita (*Arctostaphylos*) (bottom left) has over 50 species in California; *A. insularis*, a Channel Islands endemic, is shown here in fruit. Photograph by L. Vorobik.

The cumulative impact of these changes in California was that many of the species that occurred here until the Early Miocene Period disappeared. As a result, the current flora largely consists of two groups of plants that have had very different origins, each of them contributing to California's special character. The first group consists of Tertiary Era survivors, which coped with seasonal aridity because of their unusual adaptations, or because they moved to higher, cooler elevations or became restricted to moist canyons and other habitats similar to the ones that had been widespread earlier.

Shasta snow-wreath (*Neviusia cliftonii*) is a prime example, restricted to moist canyons in north-

ern California, and with its relatives in the southeastern United States and in Asia. Redwoods provide a different example, with their ability to trap moisture from fog that permits them to create their own microhabitat where a whole group of associated organisms survives.

The second group consists of genera that thrived in the new, summer-dry climate. To such genera, the geologically rapid spread of such a climate made much of California's area functionally like the bare surface of an island emerging from the sea. This situation, in combination with the complex geology and topography, created great opportunities for adaptive radiation, producing tremendous constella-

tions of species in genera such as *Phacelia*, *Eriogonum*, *Trifolium*, *Ceanothus*, and *Arctostaphylos*.

These unique and fragile ecosystems of relatively recent origins that occur over much of the state are, then, home to a diverse biota consisting largely of unique species that are often adapted to peculiar local habitats. As a result, the native flora of California is extraordinarily rich, comprising about 5,500 vascular plant species out of the approximately 18,000 found in the United States and Canada as a whole.

More remarkably, 40% are endemic to the California Floristic Province (the part of California that lies west of the Sierra Nevada, plus northern Baja California and southwestern Oregon). This makes California the biologically distinctive and endlessly interesting place that it is. Unfortunately we are rapidly

losing that richness today as human beings and fragile nature collide ever more forcefully.

CALIFORNIA UNDER SIEGE

A main threat to California is, of course, habitat loss to development, which is getting worse all the time as the population continues to increase. California's population of over 30 million people is growing rapidly towards 40 million, with 60 million predicted by the middle of the 21st century. When queried, most residents say they want a comfortable house and an affluent California lifestyle that takes for granted a level of consumption considered very high by world standards. Adding up these individual dreams and desires and multiplying them by the growing numbers of people in the

state provides an environmental scenario in which sustainability will be increasingly difficult to achieve.

To make matters worse, California's biodiversity is being eroded by a tidal wave of invasive species from other parts of the world. Many of the worst plant pests have come from those areas that have a similar Mediterranean climate, and a majority of them were brought to California deliberately. Bruce Babbitt, then Secretary of the Interior, noted in 1998, "The invasion of noxious alien species wreaks a level of havoc on America's environment and economy that is matched only by damage caused by floods, earthquakes, mudslides, hurricanes, and wildfire."

Today it's virtually impossible to imagine how the fragile ecosystems looked that greeted Father Junipero Serra and his companions when they reached what is now the

The urban development of Oakland encroaches on the wildlands of the East Bay Hills. Photograph by B. Ertter.



southern border of San Diego County in 1769 and continued northward, founding missions along the way. On their horses, in their clothes, and among their supplies were the first seeds of *Medicago*, *Erodium*, *Avena*, *Bromus*, *Hordeum*, and many other Eurasian plants that have subsequently come to dominate the grasslands of California.

We might imagine something like what Elizabeth McClintock and I saw in Corral Hollow in the early spring of 1949, which was a fantastic wildflower year. There were sheets of wildflowers coming down

the sides of the canyons, with relatively few adventives (introduced and not yet naturalized plants) among them. Perhaps such a scene provides a clue to what pre-European California would have been like, but we simply cannot know with any degree of certainty.

Whatever California looked like in 1769 changed drastically in an amazingly short period of time, and many of us have witnessed a similar period of rapid habitat loss during our own lifetimes. During the 1940s when I was a small boy, I remember when our family used to drive down to visit relatives near San Juan Bautista and Hollister, in northern San Benito County.

On the three-and-a-half-hour drive from San Francisco through the orchards around San Jose we passed beautiful flats, vernal pools filled with colorful patches of *Downingia* and *Lasthenia*, and other specialized habitats, some saline, some

on serpentine, some wooded—but all fascinating biologically. The University of Santa Clara had been in the area since 1851, but Silicon Valley was still unimaginable, something for the distant future. *Downingia* was still present on the Stanford campus until the 1940s.

Particularly since 1945, however, the natural communities of the Bay Area have deteriorated rapidly, and biological diversity has decreased at an ever-increasing rate as invasive plants spread and housing developments exploded. The meadowlarks have moved further back into the hills, and something important is clearly being lost. And global warming, projected to increase mean temperatures by more than 3 degrees Celsius by the middle of the century, will displace many habitats and lead to the extirpation of many species unless we can achieve major changes in our industrial activities, starting immediately.



Non-native Cape ivy (*Delairea odorata*) and native California rose (*Rosa californica*) (left) compete for habitat at Albany Hill, a small park in the San Francisco Bay Area. • Volunteer stewards pull weeds to encourage native plant growth at Albany Hill Park (below). Photographs by B. Ertter.





Downingia sp. Photograph by L. Vorobik.

A gracious lady, then in her nineties, told me in the 1980s that her parents had started bringing the family annually to Carmel in 1929. I gasped and remarked wistfully, "Sadie, it must have been absolutely gorgeous then!" She looked at me somewhat incredulously, then laughed and said, "Peter, do you know what local residents said when we first arrived there? They said, 'You should have seen this place in 1925, when it really amounted to something!'"

A good lesson for us all, isn't it? The opportunities to preserve biodiversity will never again be as great as they are right now. If we want future generations to be able to enjoy California's rich and extraordinarily beautiful flora, each of us must act. There is plenty to do right now, and we need to do it! But that preservation can take place only in an overall context of sustainability: preserving biodiversity in an unstable world is simply not possible.

NURTURING WHAT'S LEFT, NURTURING OURSELVES

Think of the Earth as a place where only sunlight comes in, some heat goes out, and everything else that happens is our problem. If we

are manufacturing something and putting huge quantities of waste products back into the living systems that support us, or if we are using up natural resources more quickly than they can be replenished, we are impairing the ability of the Earth to sustain itself and thus stealing from those who come after us. Ultimately, we are also making it impossible to preserve biodiversity, including California's extraordinary flora.

In the face of such overwhelming and not particularly pleasant realities, people often ask me whether I am a pessimist or an optimist. The reasons that I am an optimist are, first, that I intend to do something about the situation myself, and I *know* I can make matters better by doing so, and also because I know that the world is filled with other people like you, dear *Fremontia* reader, who are committed to doing something about the situation, and who *will* do something about it.

As Americans, we need to recognize our special responsibility as citizens of the richest nation in the history of the Earth, and take advantage of the extraordinary privileges that we enjoy. Most of the readers of this magazine are already concerned with the preservation of California's flora, but I ask you to adopt a broader perspective on the situation, while at the same time intensifying those local efforts that alone can lead to success.

At the same time, there is no substitute for local action. I enthusiastically applaud the efforts of communities throughout the state that have become involved in the restoration of natural communities, and in working for sustainability in many other ways. Many volunteers are working hard rooting out invasive plants and creating suitable conditions for native plants and animals right in the neighborhoods where they live.

Throughout the San Francisco

Bay Area, people who care are involved in stewardship activities in their own backyards—on Bernal Heights, on Twin Peaks, in the East Bay parks, in the Presidio. In the Golden Gate National Recreation Area alone, volunteers from around the Bay Area contribute tens of thousands of hours annually to help restore sensitive habitats.

What will be the outcome of our efforts to save California's natural areas, in the midst of continuing development? Will the meadowlarks retreat further into the hills? Will we see less and less of *Downingia*? I do not know the answer, but I am appreciative of those who



Regrowth of native plants after non-natives have been removed by volunteer stewards at Albany Hill Park. Photograph by B. Ertter.

undertake the important work of nurturing the land, and protecting the plants and animals that occur on it, and to all of those who work to promote environmental sustainability in any way. I am certain that our children and grandchildren, and those who come to California in future years, will also be grateful for their efforts to keep this state as beautiful and interesting as it is now.

Peter H. Raven, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166.
peter.raven@mobot.org.

DENNIS ROGERS MARTINEZ

Dennis Rogers Martinez (O'odham, Chicano, and Anglo) has more than 34 years of land management experience and serves as chair of the Indigenous Peoples Restoration Network. In 2001 Martinez was a finalist for the Ecotrust Buffett Award for indigenous leadership in conservation. From his home in Trinity County, he recently talked with Pete Holloran about ecological restoration and indigenous stewardship of the California landscape.

Some Indian elders use the word “caregiving” rather than stewardship. There’s reciprocity involved, like when parents take care of kids, and then, when the parents get older, the kids take care of them. Plants and animals sustain us, so we need to take care of them. The elders say that if you don’t take care of the plants and animals and use them, they get lonely and go away.

Here’s an example: California Indians dug corms and bulbs for food. The very act of digging released the little cormlets from the mother corm. They were therefore propagating the plant by their labor, the women with their digging sticks, and the tracts increased in size and quality. Where patches of *Brodiaea*, *Calochortus*, and *Triteleia* have been locked up, they’ve actually tended to decrease in size. There are many other examples of food plants—or medicine plants or basketry and cordage plants—that have become much less common across the landscape.

In 1969 I was working with a Pomo Indian elder on a conventional landscaping crew in Sonoma Valley. He told me about the Indian uses of the plants. I got really interested in native plants that way

and joined CNPS. In 1972 I began working on rare plants and conservation with the East Bay chapter and started doing a combination of conventional and native plant landscaping. A few years later I teamed up with David Amme to cofound Design Associates Working with Nature (DAWN). Charli Danielson was our propagator. We had about 130 different species of native plants that were nearly impossible to find in the trade.

During the last 20 years, I’ve probably done more work with traditional ecological knowledge than anything else. I write about how we can integrate these two kinds of knowledge systems—traditional ecological knowledge and Western science—in land management. To the degree that we can, we should incorporate Indian management practices. Of course we cannot retrieve what we cannot retrieve. It’s always modified by changed environmental conditions such as habitat fragmentation, fire suppression, invasive species, development, and so on. We’re always balancing historical fidelity with ecological functionality.

Restoration is a process, not a product. It’s not a landscaping project or a job, it’s something that communities need to be involved in intergenerationally. I have never seen a finished restoration project in my life. I won’t live to see one either, in terms of full species composition and function. Restoration doesn’t heal the earth, it heals itself. But we nudge the trajectories, accelerate or retard succession just enough to where nature then takes off on its own. For Native Americans, the spiritual imperative for restoration is to participate daily in the recreation of the earth. That is why there are world renewal ceremonies.

Dennis Rogers Martinez. Photograph courtesy of D. Martinez.



MARY PETRILLI

Mary Petrilli has helped direct volunteer work parties for 15 years, first as a National Park Service ranger in San Francisco and then as director of the California Native Plant Society (CNPS) San Bruno Mountain Stewardship Project. She recently talked with Pete Holloran about her stewardship career.

I backed into my career as a park ranger. In college I had fallen in love with the idea of making things come alive on the screen. Charles Kuralt was my hero. I wanted to travel around and tell gentle stories about people. After graduating, I began working at a television station, where the work was totally stressful, requiring all kinds of hours at the computer.

I started volunteering at Fort Funston in 1988. It was great to go out there every other Saturday. I helped grow native plants in their teeny tiny nursery. Later, when I was even more miserable in my television work, I became a seasonal ranger on Alcatraz. It was a 60% pay cut, with no benefits. I was so poor, but I had so much fun. Alcatraz was a fascinating place to learn interpretation, to learn how to make connections with park visitors and help them see history or nature in a new way.

I then became a ranger at Fort Funston. It was glorious to combine teaching with hands-on work in the nursery. I really loved going to work, going out in the pouring rain, planting these little babies that you had nurtured and setting them free. It was great to be able to share that with other people, especially people who don't usually do that.

It's important to take skeptics seriously. We shouldn't be afraid of people who have the opposite opinion. It takes time to build trust with people. If you want people to help you, find out what they care about.

That's what stewardship is all about. You have to be open to other people's cares and concerns.

It's great when you can turn the negative into a positive. I remember talking with a bird enthusiast who was terribly upset about our weed removal work. She was afraid for the birds, and I could relate to that. Just by talking to her for a little while, she felt better. I told her that it's hard, but you just have to trust us. I told her we were being really careful, not working during nesting season. She was still a little skeptical, but as the months went by she began complimenting us on our work. She could see that we weren't just destroying things, that stewardship was a life-giving process. Her daughter even joined our work parties and created our gorgeous website as a volunteer.

Any time you're caring for something, that's stewardship, whether

you're caring for people, or animals, or the world. I feel sad for people who don't have that in their lives. It's wonderful to be connected to the earth, to feel the sand between your fingers. People have so many layers that separate them from this amazing earth. Stewardship helps peel away those layers, getting you back to your bare hands and feet.

Mary Petrilli with Pete Holloran, center, and Mark Heath, left (top). • Petrilli, center, facing left (bottom), leading volunteer training on San Bruno Mountain. Photographs courtesy of the California Native Plant Society.





Coastal prairie at Pt. Reyes National Seashore, Marin County. Photograph by L. Vorobik.

LISTENING TO CALIFORNIA'S GRASSLANDS AND THEIR STEWARDS

by Grey Hayes

California's grasslands have been called the most invaded, most endangered, and most altered ecosystem in the world. They have been ranked among the top ten most endangered ecosystems in the United States, alongside the more publicized Florida everglades and coastal sage scrub in southern California. All with good reason: many of California's rare, endangered, and threatened plant species occur in grasslands, including 90% of the plants listed in California Native Plant Society's *Inventory of Rare and Endangered Plants of California* (Sixth Edition).

Thanks in part to our diverse climates and soils, there are many

native grassland types in California. Most of them are in decline. Habitat conversion and mismanagement have destroyed most native grasslands in the desert, while urban sprawl has paved over vast stretches of coastal prairie. The Central Valley's moist grasslands—so vividly described by Thomas Jefferson Mayfield in 1850 as a “crazy quilt of color”—have mostly disappeared under the plow.

Millions of acres of remaining grasslands throughout the state are being overwhelmed by invasive species, including non-native thistles and grasses. The poor and sometimes toxic soils of serpentine grasslands, once thought safe from invasive plants, no longer provide safe

refuge. Nitrogen deposition from urban smog—mostly from automobile exhaust—is fertilizing serpentine soils, making them more amenable to invasion.

But we should not abandon hope. There are thousands, perhaps millions, of acres of grasslands throughout the state that still harbor a diverse mixture of native grasses and wildflowers. These areas share one thing in common: the need for stewardship. Without stewardship, almost any type of California grassland will degrade as it becomes overrun by shrubs, trees, or invasive weeds.

Grassland stewardship can mean many different things: ecologically-oriented grazing, prescribed fire,

mowing, weed removal, erosion control, and various other techniques. I witnessed some of the many types of grassland stewardship while working on my doctoral dissertation at UC Santa Cruz. For two springs, I drove northward along California's coast, following the coastal prairie spring from Morro Bay to Fort Bragg. Over the course of my studies in these coastal prairie remnants, I became convinced that stewardship is the only hope for many of California's rarest grasslands.

I have published the results of this work in scientific journals, where I illustrated the dramatic differences between grazed and ungrazed plots in adjacent grasslands, but here I want to share a few of the inspiring stories that I heard during my travels. In the pages that follow, we'll meet some of the people who are contributing to our growing awareness of the importance of grassland stewardship.

THE FIRST STEWARDS

It is inevitable that humans in California would develop grassland stewardship techniques, since grasslands blanket one quarter of California's landscape. For thousands of years, the vitality of those grasslands was closely linked to indigenous cultures and economies. California Indians cultivated an extensive list of grassland-dependent species that could only have been provisioned in concert with extensive and expert ecosystem management.

Kat Anderson's brilliant ethnographic research has provided convincing evidence of such widespread ecosystem management. More recently, Chuck Striplen, a member of the Mutsun band of the Ohlone of the Monterey Bay region, is extending Anderson's work through his doctoral research at the University of California at Berkeley, documenting grassland management

among California Indians. Piecing together traditional peoples' land management patterns is a slow process, integrating ethnographic work with pollen and opal phytolith analyses as well as investigation into early written records.

However, the landscape is much different now. We can't turn back the clock to the time before invasive species arrived. Nevertheless, given indigenous peoples' long history of grassland stewardship, they can teach us a great deal about sustainable land management practices. Dennis Rogers Martinez (see interview on page 10) has played a key role in translating traditional ecological knowledge into land management practices appropriate for the current ecology. He has

grasslands they depended on for sustenance, a new Californian grassland ecosystem came into being. Learning how to practice wise stewardship of these novel grasslands has presented numerous challenges.

Ranchers in the late 1800s encountered extreme drought, and having overstocked the land with cattle, California's economy was devastated. Some attribute widespread loss of native perennial grasses to this episode, making it not only an economic but also an ecological disaster. After the drought, the moister coastal grasslands became much more important. Always the most productive and diverse grasslands in California, coastal prairies became the home of extensive dairy operations,



Serpentine grasslands at Ring Mountain, part of the Marin County Open Space District. Photograph by L. Vorobik.

worked with many land managers in using fire to restore healthy landscapes and species.

LEARNING FROM THE GRASS

During the last two centuries, as invasive species became more dominant and the close ties broke down between California Indians and the

some of which gained fame among early sightseers for their wildflowers and beauty.

Peter Arvelas grew up on this beautiful coast amongst these prairies. Arvelas's father emigrated from Crete to northern Santa Cruz County in 1912 and brought with him generations of experience in stewarding Mediterranean grasslands. By the 1930s, Arvelas and his father were working alongside a



Peter Arvelas and his grandson Tommy on Santa Cruz County's beautiful north coast prairie. Much of what is left of those grasslands is because of this family. Photograph courtesy of P. Arvelas.

community of ranchers that maintained large intact ranches. Their economic viability as ranchers, reliant on the productivity of native coastal prairies, prevented row crop agriculture from expanding into the species-rich prairies.

The economics of California ranching has changed in recent decades. With the advent of large Midwestern feedlots and centralized technology-intensive dairies elsewhere in California, it has become less viable to run cattle in coastal prairies along the California coast. Consequently, during the last 40 years or so, ranches up and down the coast have closed down.

Many of these ranches have been saved from development using public funds, but their transformation into cattle-free public parks has not provided as much protection for native grasslands. Public agencies have fewer resources—and experience, in many cases—to practice grassland stewardship. Since the ranching economy collapsed, grassland stewardship has become much more variable, more expensive, and less sustainable. As a result, endangered coastal prairie species are disappearing.

But Peter Arvelas is a survivor.

He has outlasted most of the other ranchers in his area and is now a vital elder in the community of people working together to conserve these grasslands. Hundreds of people were once active in the grassland economy of Santa Cruz County, but Arvelas is one of only a handful that remains. Having lost so much stewardship expertise during the last two centuries, people like Arvelas are a rare and precious resource. Everyone in the community hopes that he is successful in passing his knowledge on, especially to those of his grandchildren who are enthusiastic about ranching, and that they will join in protecting these same grasslands.

LEARNING THROUGH SCIENCE

During the last few decades, Arvelas and other Californians who depend on grassland ecosystems have witnessed the twin powers of urbanization and increasingly mechanized agriculture working in tandem to remove from the land those who had been developing new traditions of grassland stewardship. Quite different forces are at work

among university scientists who study grasslands. There is a long tradition of grassland science in California, but the sum total of scientific research findings offer little compared to all of the traditional ecological knowledge accumulated over centuries by those practicing grassland stewardship.

One of the founders of plant ecology in the United States, Frederic Clements, visited California during the early 1900s. Already well-confirmed in his beliefs about ecological succession and climax communities, Clements made quite broad conclusions on the nature of pristine grassland structure and composition after observing bunchgrasses growing on railroad rights-of-way in an area of the Central Valley that had already been intensively managed for decades. Clements concluded that California's pristine grasslands were dominated by perennial bunchgrasses.

Following his lead, grassland studies during the rest of the 20th century focused mostly on a few species of widespread perennial bunchgrasses, mostly at only a half dozen research stations: the Jepson Prairie, near Davis; San Joaquin Experimental Range; Hastings Res-

Native bunchgrasses at Antelope Prairie Poppy Preserve, Kern County. Photograph by L. Vorobik.



ervation in northern Monterey County; and the Hopland Field Station in Mendocino County. More and more people are beginning to question the applicability of this bunchgrass-oriented research, but Clements's tentative suggestions still hold sway among many land managers, restorationist ecologists, and the public.

There are too few scientists with too few resources to answer the many stewardship questions facing California's grasslands. Nevertheless, The Nature Conservancy has attempted to address this problem by developing partnerships between scientists and traditional grasslands stewards to generate credible and precise information on methodologies for restoring grasslands.

Two Conservancy stewards stand out in particular: Peter Hujik and Jaymee Marty. Hujik stewards grasslands of the Lassen foothills in partnership with a community of local ranchers and firefighters. Together, they experiment with combinations of grazing and fire, while Hujik works with researchers such as Caroline Christian at The Nature Conservancy, out of Monterey, to monitor the effects. Jaymee Marty similarly works with grazing and fire, but in the very different vernal pool systems of the Sacramento Valley. Even though the grasslands where they work have the usual profusion of invasive species, these partnerships serve as templates for restoration that others in their region can turn to.

The work of stewards such as Hujik and Marty is documenting the varying responses of grasslands to different stewardship choices. By working in partnership with those with traditional knowledge and applying the few available grassland restoration tools carefully, they are convincing the most skeptical and cautious "hands off is safest" land managers, as well as other conservation organizations, legislators, and environmentalists.



Researchers working with Jaymee Marty. Photograph courtesy of J. Marty.

In many ways these landscapes are like libraries, and long-term stewards such as Hujik, Marty, and Arvelas have become their reference librarians. They are bringing traditional stewardship knowledge forward where it might otherwise have been lost, and in the process are inspiring new hope for maintaining the species of these beautiful grassland systems.

RANCHLAND STEWARDSHIP

George Work's family plays a similar role amongst dryland ranchers in California. Work's grandfather homesteaded land in southern Monterey County in 1890 and began the working ranch that now promises to support Work's grandchildren—that's five generations of Works. The 12,000-acre Work Ranch is an inspiration for the present generation of ranchers in California. The Works have collaborated with diverse conservation partners to develop grassland stewardship expertise that contributes to responsible land management.

The list of collaborators is extensive, including the California Native Plant Society, California Department of Fish and Game, Community Alliance with Family Farmers, and the local Resource Conservation District. Through these partnerships, the Work Ranch has managed to attain economic sustainability while improving water quality, decreasing soil erosion,

and restoring native grassland plants and animals including native perennial grasses, elk, quail, and deer.

One innovation the family has developed is ground-level water troughs that benefit wildlife. The Works have also participated in an experimental brush reduction program through the California Department of Forestry. The program mimics fire and reduces dangerous fuel loads while maintaining a level of disturbance upon which some species depend.

George Work takes the lessons he has learned to an expanding community of scientists, legislators, and land managers. He has been invited to speak to the Sierra Club, California Native Grass Association, Society for Ecological Restoration, American Association for the Advancement of Science, and the California Executive Council on Biological Diversity. He frequently hosts classes from Cal Poly, San Luis Obispo. The competitive 2003 National Cattleman's Beef Association Environmental Stewardship Award is just the most recent in a long list of accolades the Work family has received.

The Works have successfully combined many necessary stewardship elements, including economic sustainability, attentive work on the land informed by experience, outreach and education, and active participation in democratic institutions. The evidence of their effective stewardship is right there on their land, in plain sight of anyone who cares to look.

A SCIENCE OF LAND HEALTH

Aldo Leopold is often considered one of the founders of the modern stewardship movement. In his book *A Sand County Almanac*, Leopold reminded us that "the art of land doctoring is being practiced with vigor, but the science of land



George and Elaine Work, who are a portion of the many generations of their family that live more and more by the land, and for the land. Photograph by A. McMahon, courtesy of The Nature Conservancy.

health is yet to be born.” In its infancy, stewardship advocates wisely advised us to identify reference ecosystems to serve as templates for land health. Leopold suggested that wilderness areas “untouched by man” would best serve as these points of reference.

As our awareness of stewardship broadens, we have come to realize that the wilderness areas of Leopold’s time were the wild gardens of indigenous peoples. Now, with the invasion of so many non-

native species, California is clearly lacking untouched sites below 4,500 feet in elevation. Rather than searching for mythical pristine sites, we should consider using well-managed landscapes as our reference ecosystems.

Also needed is a tentative list of principles for grassland stewardship. Three come to mind. First, we need to cherish and honor traditional ecological knowledge as well as other sources of knowledge. We cannot afford to lose more grassland stewardship expertise, and we are in danger of doing so unless we begin spending more time with California Indians and ranchers like Peter Arvelas and George Work. The landscapes that generations have created are disappearing.

A second principle is that there is no substitute for familiarity with specific grassland sites. Each of California’s diverse grassland ecosystems deserves specific attention. Scientists have begun to learn what ranchers, and the native peoples before them, knew—that generalizations about grasslands don’t work.

A third principle is that stewardship is a community endeavor that works best when it brings together people with a wide array of

expertise and interests. We need mentors, and we need to experience first-hand what stewards can do for our grasslands. By engaging in this type of dialogue throughout the state, we can build a stewardship community that can learn by comparing diverse methodologies.

Every year California’s unique grasslands are burned, grazed, mowed, tilled, seeded, or left alone. Management is happening, even when the management decision is to do nothing at all. But stewardship is something different. Ultimately, grassland stewardship is about listening—listening to what indigenous peoples can tell us, to what people like George Work have to say, to what the grasslands themselves have to teach. If enough of us begin to listen, generations to come will be dazzled, like I have been, by wildflower-filled coastal prairies, mesmerized by the wind rippling through the native grasses, and intoxicated by the scent of tarplant filling the air.

Grey Hayes, Coastal Training Program Coordinator, Elkhorn Slough National Estuarine Research Reserve, 1700 Elkhorn Road, Watsonville, CA 95076. grey@elkhornslough.org.

Blue dicks (*Dichelostemma* sp.) flowering in a well stewarded eastern Mt. Hamilton Range meadow. Photograph by G. Hayes.



JOE MORRIS

Joe Morris lives on his family's ranch in the rolling hills of San Benito County. Grey Hayes interviewed Morris in January 2004, catching him between speaking engagements where he was helping to invigorate a discussion on land ethics.

Grasslands have affected me deeply since I was a little boy spending summers on San Benito County ranches. I have always loved the experience of space, the smells of the tarplants and horses, and the quality of light. There's nothing like the feeling of late spring when you can feel the warmth rising out in the hills or walking down a draw that is filled with buckeye and it absolutely tantalizes you with the smell—it's intoxicating. There's so much variation of sensation, the smells and sights, the plants, the wildlife, the wildflowers in spring. What excites me most is to see healthy plants: plants vibrant, vigorous, and regenerating. I love the perennial grasses: the wild rye, the *Leymus triticoides* in the swales, the *Nassella pulchra*, the California brome, and the *Danthonia* that I find around Elkhorn Slough. And then of course there's the oak trees, not just the old trees, but I like to see the young, middle-aged, and old. When I see a diverse age structure, it lets me know that there is a good effect of something that we are doing, and it's really exciting.

I grew up in San Francisco, but my family has been ranching for over 150 years in California. My grandfather loved the land, his animals, and the traditions of the vaquero, which helped inform his work with the land and the animals. He believed in the hard work that was required to live in concert with the land and animals while producing food. He believed that



Joe Morris with his children. Photograph courtesy of J. Morris.

the work should be done with elegance, which is why I treasure the tradition of the vaquero.

In our ranching business, we have a goal to be economically secure. That economic security includes the long-term health of our social community and the land; it can't be pursued to the degradation of either of those other two parts. And so we manage for the health of the land, monitoring the plant and wildlife communities and being mindful of how our use of animals affects those other members of the community. If we do it right, not only will we thrive, but so will they. As a result, we help to maintain a community of just and peaceful relationships and land

that is vigorous, beautiful, and diverse, while supporting an economy that provides enough for us to be secure with the kinds of lives we want to live.

We are becoming native to this place, observing what the native things are, how the animals live here, and how they go on living here forever in the way that they do—they become part of a community. Becoming native takes time, intelligence, and energy. We try to help our human community by provoking conversations about what becoming native means: what are their observations about this place, how we want it to be, and how we can live here forever while enhancing this place.



Native plants along the Batcheller Ranch fence line. All photographs by D. Leroy

MAKING ENDS MEET: COMMUNITY-BASED STEWARDSHIP ON PRIVATE LANDS

by Dan Leroy

While much of California's native plant life is protected in national and state parks, nearly half the state, some 50 million acres, is owned privately. These lands, which are overwhelmingly rural, support large-scale agricultural and forestry operations as well as native plant and animal populations. They are important as habitat corridors between larger protected areas and as refuges in areas dominated by urban development.

Over the last few decades, national, state, and local land trusts have spent billions of dollars acquiring land in order to protect the plants and animals that inhabit it. By some estimates, these groups now own more than 2.3 million acres in California. This is an impressive

accomplishment, but it still accounts for only 2% of the state. The local land trust in Yolo County, where I live, has purchased less than 1% of the county's 662,000 total acres. Here, where more than 90% of the land is owned privately, acquisition efforts, however important, will never be enough to protect the county's natural heritage. Promoting, supporting, and rewarding good stewardship on private lands is critical to protecting and enhancing natural resources in Yolo County and the rest of California.

We all benefit from the native plant and animal communities found on private land, yet we rely on landowners to devote the time and money necessary to protect them. These stewardship costs can be difficult for landowners to bear,

particularly for farmers and ranchers who are struggling to stay in business. Federal conservation incentive programs can pay for a portion of these expenses, but they often fall short of covering the true costs necessary to support successful private land stewardship.

During the last decade or so, conservation groups, government agencies, and private landowners have responded to this challenge by working together to protect and in some cases restore native ecosystems in ways that don't require landowners to sell their land or give up their rural way of life. In Yolo County, the local community has begun to bridge the gap between what federal programs provide and what it takes to successfully protect and restore native ecosystems.

According to Natural Resources Conservation Service (NRCS) field officer Stephen Jaouen, community groups “have helped landowners implement many of the conservation practices that are a burden in time, money, and know-how.” Over the last few years, I’ve participated in that effort and witnessed both the challenges and transformations that can occur when the public gets involved in stewarding private lands.

BETTER THAN HOUSES

Duane Chamberlain grows hay and straw on the valley floor along Willow Slough in Yolo County. By any standard, Chamberlain’s farm is big. It stretches across 3,000 acres and yields more than a million bales of straw and hay each year. Although he would hardly call himself a naturalist, Chamberlain appreciates the wildlife on his farm. He has seen more than 70 different bird species in his fields since he began farming here in 1965.

About eight years ago, his neighbor John Anderson, a former president of the California Native Grass Association and a local proponent of native hedgerows, convinced Chamberlain to plant locally native trees and shrubs along the edge of one of his alfalfa fields. Chamberlain hoped that the project would increase habitat for birds, beneficial insects, and other wildlife. To help pay for the planting, Chamberlain applied for and received a small assistance grant from the Environmental Quality Incentives Program, a federal program administered by NRCS. Staff from NRCS worked with the Yolo County Resource Conservation District to design the project and select appropriate native species.

The Environmental Quality Incentives Program is one of several federal programs administered by NRCS that encourage rural



landowners to plant and protect native species. All of them, including the Wildlife Habitat Incentives Program, the Wetland Reserve Program, the Grassland Reserve Program, and the Conservation Reserve Program, offer financial incentives and technical advice to farmers and ranchers willing to take or keep land out of production. The local NRCS field office has 154 conservation-related contracts with landowners in Yolo County for more than 20,000 acres. Of these, 715 acres have been planted with native species.

When I visited Chamberlain at his project site, I couldn’t help but notice the valley oaks. Even from a distance the oak plantings were visible as they shot upward along the edge of the field. Among the oaks we found red willows, coyote bush, mulefat, and healthy bunches of California wild rose. Most of these plantings were relatively healthy, but others were struggling. Some of the live oaks and toyons were stunted; the western sycamores were



Duane Chamberlain discussing agricultural and wildlife habitat issues with students from the Davis School for Independent Study.

barely hanging on. Eight years after the initial planting, only 30% to 40% of the plants remain.

Though Chamberlain is proud of the effort he has made, he is also discouraged by the mortality rate. “The trouble is,” he explained, “there’s no follow-up.” His team of workers did the initial planting, but maintaining the site turned out to be more work than Chamberlain expected. He didn’t have time to



The Batchellers' silver sedge lawn.

do the work himself, so he looked into hiring a private contractor to maintain the project, but couldn't afford it.

Chamberlain, who makes his living off of growing things well, gazed over the low row of shrubs with a look of resignation. "You can't just plant this stuff and walk away from it. And I just don't have the time to take care of it like it should be." As Chamberlain points out, that's because like most Yolo County farm-

ers, he is struggling just to stay in business. "For every single parcel that I own," Chamberlain says, "my taxes went up this year, even though all the crop prices were down."

Meanwhile, despite doing what he can to reduce chemical use and emissions, he is facing increasing pressure to make his operation more environmentally friendly. "I tell the environmentalists all the time, 'You know, if you guys make it too hard for us, we're gonna be gone, but there's gonna be houses out here.' To me, you're a lot better off with these alfalfa fields and cattle pastures. We may not be the best thing for the environment, but we're a hell of a lot better than houses."



AMONG THE SHEEP, BEYOND THE CLASSROOM

Four miles up Willow Slough from Chamberlain Farms, Dave and Linda Batcheller operate a much smaller agricultural operation on 30 acres. The sheep ranch consists of three rams and 50 brood ewes which, in an average year, produce 75 lambs. They too considered enrolling in the Environmental Quality Incentives Program. Then they heard about an opportunity being offered by Audubon California in partnership with the Yolo County Resource Conservation District (RCD).

The program, now known as the Landowner Stewardship Program, helps private landowners conserve and restore wildlife habitat on farms and ranches while preserving the economic conditions of local agriculture. Program staff provide technical and financial assistance for up to three years beyond the initial implementation phase. They also help landowners develop long-term conservation and restoration plans

Esparto High School students (left) planting native grasses at Good Humus Produce, another SLEWS (Student and Landowner education and Watershed Stewardship Program) partner in the Capay Valley. • A SLEWS student (above left) from Grant Union High School planting native grasses. • A SLEWS student (below) from MET Sacramento High School planting toyon near Putah Creek.





Students from Berkeley High School (above) restoring a riparian corridor on a ranch near Esparto. • SLEWS students from Berkeley High School (above right) after planting sedges and rushes.

and secure additional funding from NRCS and other federal and state agencies. For the Batchellers, the deal was too good to pass up.

Driving up the gravel road to the Batcheller Ranch, I saw the signs of a typical Yolo County ranch—old, rusty irrigation pipes, splintered fence posts, and beat-up machinery kept around for spare parts. Our tour began on the front lawn, if you can call it that. It looks like a lawn, even though there isn't a single blade of grass in sight. "I always promised Linda I'd give her a lawn. It took me 15 years, but I did it," Dave said.

He pointed to a dense stand of silver sedge bunches (*Carex prae-gracilis*) planted in orderly rows at one foot centers. "Want to know the best thing about this lawn? You don't have to mow it. And then if

you want to control the weeds, you quit watering it. The weeds die and the sedges keep going."

As we circled around to the back of the house, the Batchellers showed me the native bunchgrasses that they'd planted: red fescue, blue wild-rye, purple needlegrass, and a few others. "We're just playing around," Dave offered. "But what a great way to get to know your grasses." Then we walked behind the barn. From there we gazed over the 15-acre project area—a series of ponds, swales, berms, and wetlands, dotted with native trees and shrubs pushing out of their plastic tree protectors.

The Audubon-RCD program assisted the Batchellers with their project by equipping them with the inspiration and know-how to take on the project themselves. "It's



amazing what just a little hand-holding can do," Dave told me. "Then you go through the operation once and you get all kinds of confidence."

Audubon's initial plan called for hundreds of native trees and shrubs and thousands of native grass plugs—far more than the Batchellers could handle on their own. The grant paid for labor crews to assist with the planting, irrigation, and weed control. Rather than just hiring a regular field crew, Audubon partnered with the Center for Land-Based Learning (formerly FARMS Leadership, Inc.) to get the work done while building bridges between farmers and youth.

The Student and Landowner Education and Watershed Stewardship Program (SLEWS) is based on the belief that, in addition to providing a valuable service to private landowners, the restoration process can be a transformative experience for young people by

SLEWS students spend part of every field day recording thoughts and observations in their own nature journals.





Students from Davis High School embark on a journey to plant creeping wild-rye on an island at the Batcheller Ranch.

offering them an opportunity to engage directly with nature in a manner that addresses local environmental problems.

"You don't know how good it felt," Dave Batcheller said, "when I looked in that stack of paperwork and read that Audubon would assist with the planting of the trees and the shrubs. I didn't realize at the time that the assistance would come in the form of high school kids. I don't think you could work it out any better. That is such a good marriage."

On the first SLEWS day at the Batcheller Ranch, 30 students from Esparto High School climbed off a school bus minutes after a ewe had given birth. The twin baby lambs were still wet and clinging to their mother. The students marveled for a few moments listening to Dave tell them about birthing and baby lambs, and then spent the rest of

the day planting sedges, tules, and rushes along the edge of the newly-dug wetland. The more adventurous students were up to their knees in water, their smiling faces painted with mud.

Davis High School formally adopted the ranch the following year. From October to May the same group of students visited the site five times to work alongside the Batchellers. They planted over 300 native trees and shrubs, and over 10,000 creeping wild-rye plugs. They also installed drip-irrigation line, removed invasive grasses and yellow star-thistle, and planted sedges. In addition to their hands-on work, the students kept nature journals and played team-building games.

Schools from all over Yolo County and nearby Sacramento and Solano Counties work with other private landowners on habitat restoration projects. In the three years since that first field day at the Batchellers, the program has implemented over 30 projects with 15 different schools and engaged nearly 1,000 students in habitat restoration. As these projects mature they will literally transform their watershed.

Perhaps even more important than what the SLEWS students leave behind is what they take home with them. SLEWS staff work closely with participating teachers to make every project an exciting context for student learning, both in the field and in the classroom. And the students appreciate having the opportunity to learn outside the traditional classroom setting. "Text-books can only teach you so much about biology," one student told me. "We get to go out and see that the plant has seeds and rhizomes, and touch it." "It's a way to refresh ourselves," said another.

Students also value the opportunity to affect their local environment in meaningful ways. As one student explains, "With SLEWS, you can really see the results of your

work. So often the stuff you do is just fluff to put on your [college] applications. SLEWS is actually something real." The program benefits the land, the landowners, and the students simultaneously, and all three seem thrilled with the results. "You can't call this project anything but a success," Dave Batcheller said, looking over a dense stand of tules and spikerushes. "And it's more than just what's here. Just think of all the people that have been touched."

SLEW program organizers hope the students' experiences will make them care not just about the particular site they worked on, but also about larger issues pertaining to agriculture and native ecosystems in California. Practicing good stewardship now can lead to more support for good stewardship practices down the road. Such students may be more likely to make decisions that preserve farming and native species in the future.

All the landowners I have spoken to have told me that sharing their projects with young people—who are often disconnected from the land, agriculture, and native ecosystems—has become an important part of their own education. Duane Chamberlain believes that youth education programs could be the key to enticing more landowners in the county to undertake stewardship projects. "I think you can do a lot of these projects if you approach people in the right way," he said. "Everybody likes kids. Getting them involved is a good way to get farmers involved."

If Chamberlain himself is any indication, he may be right. Motivated by the opportunity to receive help from the SLEWS Program, he has initiated two new riparian hedgerow projects in the last two years.

Dan Leroy, The Center for Land-Based Learning, 5265 Putah Creek Road, Winters, CA 95694. dan@landbasedlearning.org.

DAVE AND LINDA BATCHELLER

Dave and Linda Batcheller live on a 30-acre sheep ranch near Winters in Yolo County. In January 2004 they talked with Dan Leroy about their involvement in an innovative partnership that brought local youth to their ranch to learn about ranching, habitat restoration, and land stewardship.

DAVE BATCHELLER

It's cool to be able use this restoration project for outreach, for workshops with high school kids, or just to inspire people. And it's really rewarding to see the wildlife. I walk it every morning. I get up at four a.m. to go for two or three loops around the perimeter of the site. You might think it's too dark to see anything, but that's not true. That's when I see the owls. Walking while it's still dark does have its advantages, because you don't get sidetracked.

What I find really intriguing, more so than having a favorite plant,

is getting to know the characteristics about the plants. It's really pretty cool to know that the Baltic rush doesn't flower at the stem, like a spike rush does. Or purple needle-grass—the seeds really are faint purple! Or buttonwillow—to know that these guys here were just sticks in water for the first 6 months of their life. They were submerged all winter and they still made it. They *love* the water! And then there's California fuchsia; I just love the color.

Up there is Edgar Peak. That's the beginning of the watershed we're in. Before doing this project, I had never thought of it like that. It makes a big difference. To say, we're a part of that Edgar Peak watershed, right here gives you a little bigger picture of the situation.

Before working on this project, we were thinking about moving out of the area. We were kind of frustrated. But now we're starting to realize that, after putting in all this



The welcoming entrance to Dave and Linda Batcheller's sheep ranch outside Winters.

time and effort, it would be kind of nice to pass it on, somehow, some way. I can't see living anywhere else. I'd just as soon die.

LINDA BATCHELLER

We were thinking about moving up north, out of state, even went and looked at some property. Then when this came up and we saw what you can develop, we said, "This is where we're going to stay. We're not moving. This is it. This is our project."

One of my favorite things to do here is to see the different wildlife and then to try and figure out what they are, if you don't know. Then when you do identify them, you can start to delve a little bit deeper into their habits. Like with those pied-billed grebes. When I first saw them, I knew they were a diving duck, but I would never see their head. Then when I read up on them, I found they swim like submarines.

It's fun to know what plants are around here, so that when you're going for a drive up to Lake Berryessa you are able to recognize what's out there. My Dad used to be able to do that and I always admired him for it. Blue blossom ceanothus is my favorite.

Dave and Linda Batcheller. Photographs by D. Leroy.



PETEY BRUCKER

Around 300 people live in the 500,000-acre Salmon River watershed in Siskiyou County. The US Forest Service or other public agencies own 98% of it. Petey Brucker, a cofounder of the Salmon River Restoration Council, recently talked with Pete Holloran about land stewardship in the watershed.

Petey Brucker, far right (top), on a field trip to Blue Ridge Lookout. • Petey Brucker (bottom) doing a fuels management photo point at his Godfrey Ranch home. Photographs courtesy of Salmon River Restoration Council.



I found my way to the Salmon River watershed in 1975. The economy in those days was logging, some mining, and a tree planting cooperative called Ent Forestry. In 1977, a forest fire burned up about 50,000 acres. After the fire, there was a logging boom and the Forest Service began spraying the burned areas with herbicide. One of the herbicides was 2,4,5-T, also known as Agent Orange. There was quite a reaction in the community. We formed a group called Salmon River Concerned Citizens, filed litigation, and eventually helped force the Forest Service to stop spraying Agent Orange.

In 1987 another forest fire burned 90,000 acres—and once again my house burned down to the ground. After that I became more involved in timber sale monitoring. We remembered the 1977 salvage logging; a lot of it was green timber, and we didn't want that to happen again. We got pretty creative at challenging the Forest Service.

The Salmon River probably has more runs of wild fish than any other watershed in the Klamath Basin. The agencies thought that up to half of our chinook salmon were being poached. So I wrote a grant to do an

educational workshop. I called it Salmon Ed; the agencies called it Poaching Prevention. I wrote a skit and put the agency folk in it. They were all fish.

That skit took away so much baggage, it just broke down all these barriers. There was conversation between managers and managees that was very relaxed. It was so magical. The fishing—or what other people called poaching—decreased by more than 80%.

Out of this partnering feeling came the Salmon River Restoration Council. We started as a very fish-focused group. But then we started realizing that fish are related to the world out of water. We collected native plant seed, helped run a nursery, started pulling Scotch broom and dyer's woad. Then someone found spotted knapweed, a state-listed noxious weed.

The Forest Service told us to get rid of this plant or they were going to start spraying herbicides again. One guy was great. He looked at our fields of knapweed along the river and said, if you guys don't like herbicide, if there's no plants, there probably won't be any spraying. We really took him up on that. People came out of the woodwork. Every time someone published something saying that hand-digging is going to fail utterly, it really inspired people. Since 1998 we have dug out more than 400,000 knapweed plants from nearly 250 populations. Volunteers have devoted more than 1,850 person-days since 1997.

The threat of herbicide spraying triggered all that work at first, but now it's gone beyond that. People are learning much more about native plants. We have a committee that's growing things with the kids in schools. We realize that a healthy native plant community is a healthy watershed.

CREATING A SENSE OF PLACE IN THE GOLDEN GATE NATIONAL PARKS

by Pete Holloran

The Golden Gate National Recreation Area, which features such well-known landmarks as Alcatraz, Muir Woods, and the Presidio of San Francisco among its 75,000 acres, is one of the largest urban national parks in the world. A few more superlatives: it is one of the most heavily visited national parks in the country and is supported by one of the system's largest supporting non-profit organizations, the Golden Gate National Parks Conservancy, which has raised nearly \$70 million for park programs since its founding in 1981.

It might not surprise you, then, to learn that its stewardship programs are among the largest and most admired in the entire national park system. A diversity of programs, some stretching back more than 15 years, routinely attract more than one hundred thousand volunteer hours every year. This success has

led to numerous articles about the park's programs, including profiles in *California Wild* and *Orion Afield*.

Late last year, I sat down with two people who have helped shape the park's stewardship programs during the last decade, Sharon Farrell and Sue Gardner. Our wide-ranging discussion, touching on the past, present, and future of stewardship in the park, raised more questions than it answered (for an excerpt, see the Gardner and Farrell profiles on pages 30-31).

As we continued our conversation in recent months, it became clear that there are many lessons to learn and stories to tell. And lots of storytellers too. Volunteers and leaders from throughout the park's stewardship programs—from Maria Alvarez, for example, who has led the Habitat Restoration Team since it began nearly 15 years ago, to Mia Monroe in Muir Woods—have important things to

say about the power and practice of stewardship.

In the pages that follow, you will hear from the most important group of storytellers: the volunteer stewards whose passion and enthusiasm have played such a critical role in making the park's stewardship programs so successful. The quotations are drawn from hundreds of interviews conducted during the last decade by Farrell and Gardner. Long-term stewards, retirees, junior high school students, first-time volunteers—all are represented here. The quotations are set among images that illustrate what the volunteers and staff working on the public lands of the Golden Gate National Parks have helped create: the beginnings of a culture of stewardship.

Pete Holloran, *Environmental Studies Department, UC Santa Cruz, 1156 High Street, Santa Cruz, CA 95064. peteh@ucsc.edu.*



Milagra Ridge in 1992 (above) and Milagra Ridge in 2003 (above right). • A Midpoint student working on Milagra Ridge with the Site Stewardship Program (right). All photographs courtesy of the Golden Gate National Parks Conservancy and the National Park Service.



"I find it amazing that there are six high school students out here volunteering. Even at a high school level, it's amazing for us to even be out here. I find that it's more than just pulling iceplants, it's all about community and diversity. You look at San Francisco, it's such a diverse city, and I get sad sometimes because the environment isn't as diverse as the community. Could you imagine a city this full of buildings and not anything else?"



Landscape following removal of iceplant and non-native trees, Fort Funston, ca. 1992.



Interns and staff, Presidio Park Stewardship Program, summer 1997.

"Stewardship means that the community will feel invested in the part of the environment it is caring for. After pulling pampas grass out of an area in Rodeo Valley, I watch it like a hawk. Multiply this feeling to more and more people . . . and we can save the environment."

"How has volunteering helped me? It has helped me get back to my roots. Growing up, I spent a lot of time outdoors and learned a lot from my dad and my uncles when we went out hunting and fishing. And as I got older, I got away from it and I'm getting back to that. It helps me be a better person. I feel better about myself, I'm not stressed. Friends who haven't seen me for a while notice how much happier I seem. On the whole, volunteering is something that I've decided I don't want to give up. I'm going to be working part-time and part of the reason I want to work part-time is because I want to continue my volunteer work. It's very important to me."



Dune swale, before planting, in former asphalt parking lot, Crissy Field, Presidio of San Francisco, November 1999.



Landscape following native plantings, Fort Funston, ca. 1995.

“‘Stewardship’ is a very bi-ased, white culture word. Other terms like ‘volunteer’ or just ‘helping to plant’ are more representative of cul-tures outside white upper-class America.”

“I’m a native of the Bay Area working in the health field. What I really like about working with the environment is that it gives me a break from the weekly routine. I enjoy the company of like-minded people who come out here and want to do something to preserve the beauty of the environment. It’s so beautiful no matter what grows, but when you know that it is native and natural, you really want to help that along. It gives me pride to walk through an area that I helped to maintain, that I helped to restore. The restoration process is continuous, so I know that each time I come back it’s changing and growing. I really enjoy that.”



Middle school students who won the competition for longest strand of ice plant removed, Crissy Field, Presidio of San Francisco.



Dune swale, April 2002.

“As more junior high school kids like me participate to fulfill volunteer hours required by school, more will return to it as adults as their volunteer activity of choice. More people should be able to work off parking tickets and misde-meanors in this way. Get city people into the countryside!”



"After awhile you figure out that there's only so much that you can do and the little work you do is very satisfying. If everybody would say, 'Oh, we can only do so little,' then nothing would be done. So I feel that every little bit helps and it gives me a lot of satisfaction."

City College of San Francisco students head up to Wolfback Ridge near Sausalito.

"I grew up in Oregon, live in Berkeley, and work for an insurance broker in San Francisco. During a company outing, we were able to go into an area that is off-limits to the public because of the restoration [work underway]. We were down on ground level pulling out non-natives and I was able, I think for the first time, to really see the beauty of the spring plants in California. I guess in my many years of hiking with the Sierra Club I'd simply passed it by because I'd been more interested in grand vistas and covering a lot of miles. I got a tremendous amount of satisfaction out of helping restore something, and was so captivated by the beauty and the enjoyment that I came back [to help out]."



It takes a village to take care of French broom (above). • An enthusiastic volunteer of the nearly 600 at the Presidio during Earth Day 1997 (right). • Students in the park's LINC (Linking Individuals with the Natural Community) program provide a valuable lesson on how to make park uniforms look "cool" (far right).

"I'm from San Francisco and I read in the newspaper every day about environmental destruction and I wonder, is there anything that I can do to help? Of course, writing to your congressman is important, but it doesn't really give me a hands-on feeling of accomplishment. So I was really glad when I found this habitat restoration program where I could go out and do field work, and actually see that I was pulling out alien species and replacing them with native plants."



"In an era of corporate downsizing and reengineering, when there's a tremendous amount of insecurity about the value of a person's job or their work or whether or not they'll even have a job, it's great to come out to a place where you're really needed. The parks need you, they want you. Budgets are cut, but they're willing to give you the support to do a job well."



Finding new uses for a weed wrench.

"When I first started volunteering, I never really got to work with people and I didn't get a sense of the big picture. I was just always yanking on this plant or that plant that was non-native and invasive. Once

I started working with a team and we started to go to the same place and work on different issues in that same place over and over, I saw the change, I saw the impact that my work had on that particular site. That's what I found most meaningful, and that's what kept me coming back. That's where I felt like I actually learned something, because I went below the surface, I wasn't just clearing whatever plant someone had pointed out to me, but I was clearing plants and seeing the impact that that had on the native plants' growth."

"It's an endless task, but someone's got to do it and heck, why not me?"

Students from Longfellow Elementary School (top right) amid the iceplant they'd just pulled at Fort Funston in San Francisco. • Hard-working students in the park's LINC program relax after a long day at the nursery.



STEWARDSHIP: GETTING INVOLVED AND LEARNING MORE

STEWARDSHIP. n. management of entrusted resources; from Old English *stigward*, "keeper of the hall"

In the land management context, we interpret stewardship to mean those practices that contribute to the conservation and restoration of biodiversity for the sake of future generations. The list of resources below (and additional ones listed at www.cnps.org) will help you explore the various dimensions of land stewardship and discover its special allure.

TO GET INVOLVED

Local parks and open space groups sponsor hundreds of volunteer workdays every month. Every large coastal wetland in southern California, for example, has an organized group of dedicated stewardship volunteers. There are often signs at trailheads with contact in-

formation for those interested in helping. Among the best sources of information about such groups are local park rangers, officers of your local CNPS chapter, and community newspapers.

In our experience, such groups have an intermittent and sometimes out-of-date presence on the Internet. Still, it's worth searching for them. A good place to start is Native Habitats' list of links at <http://members.aol.com/gstigall/calnat.htm>.

The Natural Resource Projects Inventory at the University of California, Davis, sponsors an online database of restoration projects at <http://www.ice.ucdavis.edu/nrpi>. The inventory includes many projects that don't offer volunteer opportunities, but it's intended to be comprehensive.

Internships with land management agencies often provide the best stewardship training. The Occidental Arts and Ecology Center also offers classes in wildland and agricultural stewardship that is focused on the central California coast but has broader applications. See their site at <http://www.oaec.org>.

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SUE GARDNER AND SHARON FARRELL

Sue Gardner has been director of the Golden Gate National Parks Conservancy's Site Stewardship Program since it began in 1993. Sharon Farrell led the Presidio Park Stewardship Program for the National Park Service from its inception in late 1993 until 1998, but has continued her involvement in Presidio stewardship activities since then in a variety of capacities. Gardner and Farrell spoke with Pete Holloran and Anouk Mackenzie on several occasions about their experience with community-based stewardship during the past decade—and where it might be headed in the future.

SUE GARDNER

There are some great drop-in programs in the park. The Habitat Restoration Team routinely has dozens of volunteers

at its Sunday workdays, and has for more than ten years. The Site Stewardship Program has found consistency of a different sort. We're going from a pure drop-in program to a place where almost all of our volunteer hours now come through long-term educational partnerships. Because they're scheduled well in advance, with numbers that we can count on, the consistency has helped our ability to plan stewardship activities.

That evolution came about not so much because of our inspiration or foresight. It really bubbled up from the grassroots, including two volunteers who were students at City College in 1994. They helped us see how important it is to address diversity in our programs, to reach broader audiences.

The big question I'm really grappling with is finding the right

balance between education and stewardship. How do we achieve our resource management goals for a site while also reaching new audiences? It's a grand experiment and we learn something new every year. But we can't stray too far from education and outreach. It's too critical. Some of our students are terrified to even go out into a natural area, so it's not even about getting work done at that stage. It's about making a long-term investment. In order for public lands to survive, we must make that investment! The demographics of California are changing so quickly.

There's definitely a niche out there. It turns out that kids in non-traditional educational environments do brilliantly in the field. So we've invested in all sorts of partnerships with educational institutions outside the mainstream. Over the years we've been able to figure out which partnerships stick and provide positive results for both parties.

Every year we'd see a few enthusiastic students bubble up in each partnership. We wanted to provide them with the next step. This past summer we took a step in that direction with a pilot program for high school students. Ten students joined us for a seven-week natural resources boot camp. We called it Linking Individuals to the Natural Community (LINC).

Each week had a different theme—invasive plant removal, nursery work, mapping, monitoring, trail work, environmental education. It was hard work for all of us, but it was very rewarding. We wanted to do authentic work, not just education.

We were fortunate to have a very talented credentialed teacher, Amanda Keroes, working with us every day. We learned so much from

Sue Gardner. Photograph courtesy of the Golden Gate National Parks Conservancy.



her. I've run all sorts of environmental education programs, but I still learned a lot about how to work with high school students. For Amanda, the summer experience left her feeling empowered enough as a steward that she's adopted a site as her own and will be helping lead workdays there. And she's already signed up for a second year with the LINC boot camp!

SHARON FARRELL

When I first started working at the Presidio ten years ago, my definition of stewardship was all about the land. It was about trying to find ways to nurture and revitalize a landscape that I had fallen in love with. As the program matured, I saw that people needed stewardship as well. I now see much more vividly how stewardship can transform lives as well as landscapes. Even in my wildest dreams I never envisioned that stewardship could be so transformative.

As the Presidio's program grew, the passion of its volunteers fueled its ability to undertake larger projects. We quickly realized that not every park visitor supported the transformations that were occurring. Removing invasive non-native trees for a restoration project became a lightning rod for a large number of concerned neighbors. At times the project was almost shut down. After two years of public education and outreach, it was gratifying to see that the opposition to tree removal wasn't implacable. One neighbor even took the time to write a letter to the *San Francisco Chronicle* expressing his initial doubt about the park's restoration project but that he had witnessed a wonderful transformation as the work progressed.

Some people will never change their positions, no matter what evidence you marshal to support your argument. But many people can

change their mind when they witness how landscapes can be shaped in positive ways by stewardship. It doesn't make sense to bring everyone into a single mindset. It's our job to highlight what stewardship can do for the land and then allow them to make up their own mind.

I've worked with lots of organizations and institutions on stewardship issues since leaving the Presidio. In nearly every successful program, pioneers have helped shape the direction and breadth of community involvement in watershed restoration. Their actions continue to be important in creating volunteer opportunities and laying the framework for community participation. When I first started, the park did not allow volunteers to participate in monitoring endangered species. Now, thanks to the efforts of several pioneering volunteers and interns, the park's monitoring program relies heavily on volunteer participation. Once those path-breaking volunteers had demonstrated their ability to collect good data and built strong relationships with park staff, it was easy for the park to shift gears.

I can't tell you how many times I've heard resource managers around the state say that "all volunteers can do is weed." There's often a big disconnect between their volunteer management actions—"let's have a workday so we can get some good press and let people feel good"—and their resource management objectives. Volunteer programs are seen as merely supplemental. Some have asked me, in

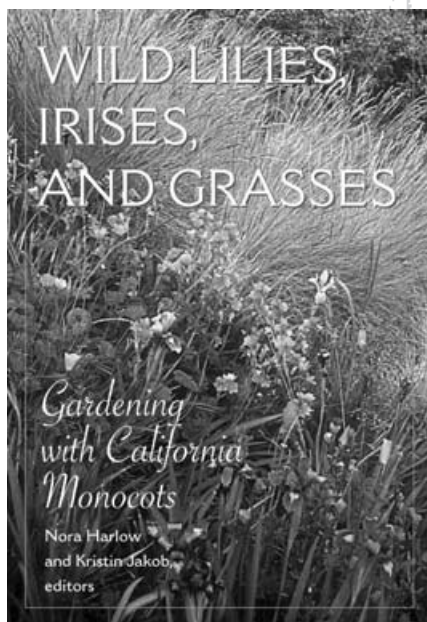


Sharon Farrell (right) planting native grasses with Kurt Delfino. Photograph courtesy of the National Park Service.

incredulous tones, "you trust volunteers to do that?!"

Absolutely, I have to say. In my experience, if you believe that people can do something, they will. That sounds corny, I know, but I've seen volunteers provide critical leadership and support in planning, revegetation, nursery management, monitoring, and even research. By offering broader volunteer opportunities the Golden Gate National Parks increased and diversified volunteer participation. The challenge comes in finding the right balance of field-based experiences, social interactions and celebrations, and educational and planning opportunities.

Managers throughout the state are having to gradually change their attitude toward volunteer stewards, in part out of financial need but also because they're beginning to recognize that there are high-quality stewards out there. So go out and be a pioneer! Help change some minds while transforming the land—and yourself.



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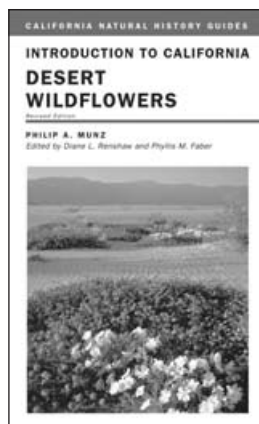
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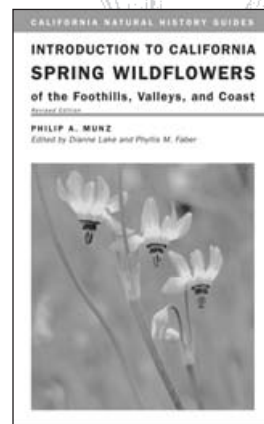
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FROM THE EDITOR

Could our local wildflower walks suffer from the tragedy of the commons? Will our children and grandchildren love and work for native plants the way we do? Pete Holloran, Convening Editor for this special issue on Stewardship, has assembled articles that reflect why we need to work to protect native habitats and how this is happening, along with a series of profiles of those who work as land stewards.

As an introduction to these thoughts, Peter Raven, one of the most well-known botanists of our time, who was raised and educated in California, presents an overview of the California flora, how it has changed

through time, and why we want to work to steward native landscapes, especially those in or near heavily populated areas. The articles of Grey Hayes and Dan Leroy let us know what it is like to work on stewardship jobs, the challenges to private landowners, and the experiences of kids who pitch in to make a difference in what will be *their* world.

In the last article, Pete Holloran introduces a collection of quotes and photos that portray those helping to dig weeds, plant native plants, of those who get down on their knees and dirty their hands to make a place better.

Scattered throughout the issue are

profiles of land stewards from a variety of situations (each profile is placed near an article that it relates to). In these profiles, each steward speaks his or her mind about their challenges, rewards, and treasured memories.

The California Native Plant Society is about the plants, but as a society, it is, foremost, about the people. It is my delight to share this issue with you, in that Pete has done a superb job portraying the people who work for the landscape, for the plants, and ultimately for the collective good of all of us who revel in the beauty of the wild.

Linda Ann Vorobik
Fremontia Editor

CONTRIBUTORS

Grey Hayes received his PhD in environmental studies from the University of California, Santa Cruz. He is now coordinator of the Coastal Training Program for the Elkhorn Slough National Estuarine Research Reserve near Monterey Bay.

Pete Holloran is a PhD candidate in environmental studies at the University of California, Santa Cruz. Because of his studies, he rarely has time for stewardship activities, but he hopes to resume this work soon.

Dan Leroy coordinates community-based restoration and education efforts for the Center for Land-Based Learning. He lives and works near Putah Creek, in Winters, California.

Peter H. Raven, PhD, a native of San Francisco, has been director of the Missouri Botanical Garden and George Engelmann Professor of Botany at Washington University in St. Louis since 1971. He is a strong advocate for conservation and sustainable development.

CALIFORNIA NATIVE PLANT SOCIETY,
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and their habitats.*



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