
FREMONTIA

A JOURNAL OF THE CALIFORNIA NATIVE PLANT SOCIETY



IN THIS ISSUE:

CHAPTERS OF THE CALIFORNIA NATIVE PLANT SOCIETY: INSTALLMENT III 3

THE CNPS CONSERVATION PROGRAM *by David Chipping* 10

CNPS VEGETATION PROGRAM:

A FRESH LOOK BACK AND A NEW LOOK FORWARD

by Todd Keeler-Wolf and Julie M. Evens 18

THE CONSERVATION OF TWO SONOMA COUNTY MANZANITAS

by Greg Wablert and Phil Van Soelen 24

IN MEMORIAM: SCOTT SUNDBERG, 1954-2004 *by Aaron Liston* 31

40TH ANNIVERSARY OF CNPS

FREMONTIA

VOL. 33, NO. 3, JULY 2005

Copyright © 2005

California Native Plant Society

Linda Ann Vorobik, Editor
Bob Hass, Copy Editor
Beth Hansen-Winter, Designer
Vivian Parker, Jake Sigg &
David Tibor, Proofreaders

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 32 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.

Fremontia logo (by L.A. Vorobik) reprinted from The Jepson Manual, J. Hickman, Ed., 1993, with permission from the Jepson Herbarium, UC. © Regents of the University of California.

CALIFORNIA NATIVE PLANT SOCIETY

CNPS, 2707 K Street, Suite 1; Sacramento, CA 95816-5113

(916) 447-CNPS (2677) Fax: (916) 447-2727

cnps@cnps.org

MEMBERSHIP

Membership form located on inside back cover;
dues include subscriptions to *Fremontia* and the *Bulletin*

Mariposa Lily	\$1,000	Supporting	\$75
Benefactor	\$500	Family, Group, International . .	\$45
Patron	\$250	Individual or Library	\$35
Plant Lover	\$100	Student/Retired/Limited Income .	\$20

STAFF

Sacramento Office:

Executive Director Pamela C.
Muick, PhD
Development Director Cari Porter
Membership Assistant Christina
Neifer
Finance Manager Lois
Cunningham
Bookkeeper Suzanne DaVirro

At Large:

Fremontia Editor Linda Ann
Vorobik, PhD
Senior Conservation Botanist
Ileene Anderson
Rare Plant Botanist Misa Ward
Senior Vegetation Ecologist Julie
Evans
Vegetation Ecologist Anne Klein
East Bay Conservation Analyst
Jessica Jean Olsen
Legislative Advocate
Vern Goehring
Legal Advisor Sandy McCoy
Website Coordinator
John Donaghue
Bulletin Editor vacant

BOARD OF DIRECTORS

David Diaz, Vern Goehring, Steve
Hartman (Treasurer), Diana Hickson,
Lynn Houser, Lynne Kada, David L.
Magney, Sandy McCoy (Vice Pres-
ident), J. Spence McIntyre, Carol
Witham (President)

PROGRAM DIRECTORS

CNPS Press Holly Forbes
and Gail Milliken
Conservation David Chipping
Horticulture Peigi Duvall
Posters Bertha McKinley
and Wilma Follette
Rare Plants Ann Howald
Vegetation Todd Keeler-Wolf

CHAPTER COUNCIL

Alta Peak (Tulare) Joan Stewart
Bristlecone (Inyo-Mono)
Sherryl Taylor
Channel Islands Lynne Kada
Dorothy King Young (Mendocino/
Sonoma Coast) Jon Thompson
East Bay Joe Willingham
El Dorado Amy Hoffman
Kern County Laura Stockton
Los Angeles/Santa Monica Mtns
Betsey Landis
Marin County Bob Soost
Milo Baker (Sonoma County)
Reny Parker
Mojave Desert Tim Thomas
Monterey Bay Robert Hale
Mount Lassen Jim Bishop
Napa Valley Marcie Danner
North Coast Larry Levine
North San Joaquin Gail Clark
Orange County Sarah Jayne
Redbud (Grass Valley/Auburn)
Marie Bain
Riverside/San Bernardino counties
Katie Barrows
Sacramento Valley Diana Hickson
San Diego Dave Flietner
San Gabriel Mtns Lyn McAfee
San Luis Obispo Charles Blair
Sanhedrin (Ukiah) Chuck Williams
Santa Clara Valley Judy Fenerty
Santa Cruz County Casey Stewman
Sequoia (Fresno) Warren Shaw
Shasta Dave DuBose
Sierra Foothills (Tuolumne, Calaveras,
Mariposa) Patrick Stone
South Coast (Palos Verdes)
Barbara Sattler
Tahoe Michael Hogan
Willis L. Jepson (Solano)
Allison Fleck
Yerba Buena (San Francisco)
Mark Heath

MATERIALS FOR PUBLICATION

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

Printed by Business Point Impressions, Concord, CA

CONTENTS

GUEST EDITORIAL: TRIAGE AND THE CONSERVATION ETHIC	2
--	---

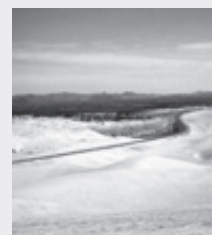


CHAPTERS OF THE CALIFORNIA NATIVE PLANT SOCIETY: INSTALLMENT III	3
---	---

This third in a series of four articles celebrates members and local chapters which make up our Society, and includes those from the central part of the state: the Tahoe, El Dorado, Marin, Willis Linn Jepson, Yerba Buena, East Bay, Santa Cruz, and Santa Clara Valley chapters. Summaries of the remaining CNPS chapters will appear in the next issue of Fremontia.

THE CNPS CONSERVATION PROGRAM <i>by David Chipping</i>	10
---	----

David Chipping (Professor of Geology at Cal Poly, San Luis Obispo) has headed the conservation program since 1997. At the close of his tenure, the author reflects upon the Conservation Program of the Society, including an overview, how it relates to other CNPS programs, and some current challenges.

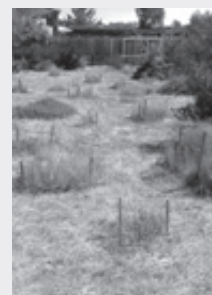


CNPS VEGETATION PROGRAM: A FRESH LOOK BACK AND A NEW LOOK FORWARD <i>by Todd Keeler-Wolf and Julie M. Evens</i>	18
--	----

This article highlights the history of the CNPS Vegetation Program from its inception, with a positive look at the present and towards the future. The program has benefited tremendously from the work of its committee members and chapter volunteers, and now advances to new projects with paid staff on board.

THE CONSERVATION OF TWO SONOMA COUNTY MANZANITAS <i>by Greg Wablert and Phil Van Soelen</i>	24
--	----

*Sonoma County is a hot spot of plant endemism in California, with 18 plant taxa known only from the county, including four species of manzanita. The authors tell the story of two such endemics: Vine Hill manzanita (*Arctostaphylos densiflora*) and Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*), and speak to both the challenges to their survival and conservation successes.*



IN MEMORIAM: SCOTT SUNDBERG, 1954-2004 <i>by Aaron Liston</i>	31
---	----

BOOK REVIEW	32
-------------------	----

THE COVER: High elevation region in the Mineral King area of Sequoia National Park. The white rock in the background is rich in marble and carbonate-loving endemic species. One of the jobs of the California Native Plant Society Conservation Program is monitoring management actions of federal agencies so that special places like these and the endemic species they harbor enjoy continued protection. Photograph by D. Chipping.

GUEST EDITORIAL: TRIAGE AND THE CONSERVATION ETHIC

Not enough money, not enough human resources, and not enough time! This lament is heard from anyone working in conservation. As I draw to the end of my tenure as conservation director, I will try to define an ethical basis for making choices about which conservation battles we should join or run from, one that reflects the ethical choices made in the battlefield triage of the wounded.

It is no easy thing to agree on the value of an at-risk plant or habitat. If a plant is long-lived (such as a redwood tree), is it more valuable in some way than a tree that lives a century, a shrub that lives a few years, or an annual plant? Is a plant of great beauty of greater value than a plant of nondescript appearance? Is the last little patch of native vegetation in the center of town where it is seen by hundreds of people on a daily basis more valuable than a thousand acres of native plant habitat in the distant corner of Modoc County on private ranchland? Is a plant community that contains a CNPS List 1B plant of greater value than one that does not, and how would the richness and health of the other species play a role in the decision? If we work hard because we value and respect all of life, why do we pull weeds?

Like so many, I fall back on the quote from Aldo Leopold: *"If the biota, in the course of eons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering."* But can we keep every cog when the California population grows by 560,000 per year? Clearly not, if current development in southern California continues apace. But the cogs and wheels are connected in the machinery of the ecosystem, and in my judgment, triage must reflect the degree to which a portion of the machine will cease to function. When we take out the cog, what dies with it?

As plants are the foundation of entire ecosystems, our value system must extend beyond the plants. We have butterflies, sparrows, and coyotes to consider. Under triage, is it worth a fight to the death over habitat for a plant species defined by one authority, but by another lumped taxonomically with a common species? If we have the resources we should fight for each and every subspecies and variety of plant, but if not, we must fight first for the "cogs and wheels" of greatest ecological importance.

David Chipping
CNPS Conservation Director

USEFUL WEBSITES AND CONTACT INFORMATION

California Native Plant Society (CNPS):

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

For updates on conservation issues:

Audubon Society www.audubon.org

Center for Biological Diversity
www.sw-center.org

Native Plant Conservation
Campaign www.plantsocieties.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

CHAPTERS OF THE CALIFORNIA NATIVE PLANT SOCIETY: INSTALLMENT III

This is the third installment of summaries of several of the California Native Plant Society (CNPS) chapters, and covers those from the middle part of the state. Each chapter summary has been authored by one or more representatives from that chapter. The first installment, covering chapters in the south, appeared in Fremontia Volume 33, No. 1 (January 2005); the next, covering chapters one step to the north, appeared in Fremontia Volume 33, No. 2, (July 2005). Summaries of the remaining CNPS chapters, those in northern California, will appear in Fremontia Volume 33, No. 4 (October 2005). What a joy it is to read about chapter activities all over our beautiful state. If you are not a member and are inspired to join us, a membership form appears on the inside back cover.

TAHOE CHAPTER

Size of chapter: Approximately 87 members

Website address: none

In 1982 a brief article in Tahoe area newspapers reported that a local chapter of CNPS was forming: *"The group will be non-pedantic, non-organizationally oriented, and will search out beautiful wildflower areas and enjoy readings of John Muir, alpine peaks, and the harmony of being with others*

who love Sierra wildflowers." At an evening meeting on Friday, December 3rd, 16 founding members assembled, elected officers including Julie Carville as president, and selected the columbine as the chapter's flower.

While the Donner Party didn't make it over the Sierra that night, Julie arrived in Berkeley the very next day and presented the required petition to the State Board. On December 4th, Tahoe became the 21st CNPS chapter. Dormancy over the

Map of the local chapters of the California Native Plant Society. The chapters summarized in the text include the Tahoe (10), El Dorado (11), Marin (12), Willis Linn Jepson (13), Yerba Buena (14), East Bay (15), Santa Cruz County (16), and the Santa Clara Valley Chapter (17).



Top: Tahoe Chapter members working on a plant survey using CNPS releve protocol at Pope Marsh, near South Lake Tahoe. • Right: Tahoe Chapter member wondering "what the heck is this?" while checking out the aquatic plant *Callitriche* on a survey of Taylor Marsh. Photographs by S. Matson.



winter was followed by cabin fever in early 1983, and the chapter quickly developed a full suite of activities including field trips, plans for recruiting additional members, and conservation issues it wanted to tackle including National Forest management, development proposals, and public education.

While the chapter's major focus over the last decade has been on our field trips, we have also worked with The Tahoe Regional Planning Agency and the Lake Tahoe Basin Management Unit of the US Forest Service to measure and monitor

rare plants and plant communities in the Tahoe Basin.

The minutes of the chapter's first meeting notes included the following goal: "*The founding members agreed the chapter would accent fun experiences in getting to know wildflowers and other native plants.*" True to our founders' wishes, we have been having a lot of fun for over two decades. The Tahoe Chapter is proud to be associated with the California Native Plant Society and wishes our fellow plant lovers a wonderful 40th anniversary.

EL DORADO CHAPTER

Size of chapter: Approximately 130 members

Website address:
www.eldoradocnps.org

Formed in 1994 as an affiliate working group of the Sacramento Valley Chapter, and chartered a year later, the El Dorado Chapter of CNPS marks its tenth year in 2005. The chapter is active year-round with

ten general meetings, two plant sales, and 20 field trips.

Although the El Dorado Chapter covers a small region, it contains a number of uniquely interesting botanical areas, including Pine Hill Preserve, Traverse Creek, and dozens of local lava caps. The Pine Hill Preserve consists of several units within 30,000 acres of gabbro soils, and is home to eight rare plant species that mainly grow in this area. Traverse Creek, a serpentine special interest area, has been largely cleared of Scotch broom (*Cytisus scoparius*) by members our chapter and the US Forest Service. The local lava caps, with their unique soils, also support unusual plants such as our chapter flower, the rare *Calochortus clavatus* var. *avius*.

Our plant sales accomplish three goals: providing the community with a source of hard-to-find native plants, educating the public about the importance of natives, and funding chapter projects such as the Clark Youth Fund. Named after George Clark, former president of CNPS and El Dorado Chapter

mentor, the fund provides grants to several local schools each year to support projects in which the students plant native plant gardens. In the last five years we've tripled the Youth Fund grants.

Field trips are a hallmark of the El Dorado Chapter. In recent years we've traveled from the ocean to the eastern Sierra, and from Lassen Peak in the north to Death Valley in the south. On our trips we educate the public, learn taxonomy, and search for plants we've never seen. Come join us!

MARIN CHAPTER

Size of chapter: Approximately 410 members

Website address:
www.marin.cc.ca.us/cnps

On the north shore of the Golden Gate, the Marin Headlands rise grandly from the ocean, green in the spring, golden in summer, presenting a spectacular welcome to Marin County. Almost 48% of the county is open space managed by government agencies or non-profits: part of the Golden Gate National Recreation Area; Muir Woods National Monument; Point Reyes National Seashore; seven State parks; over 15,000 acres of county open space; Marin Municipal Water District (MMWD) lands; city park lands; and Audubon Society and Nature Conservancy preserves. In this grand setting, in the spring of 1973, 23 charter members founded the CNPS Marin Chapter.

Over the years the chapter has provided testimony, data, and funds in opposition to real estate developments on fragile habitat. We have taken positions against proposed actions by various public agencies in Marin that we considered detrimental to native plants and their habitats: herbicide use by Caltrans; sowing grass seed after burns; creating

Below: El Dorado Chapter field trip to Grass Lake, Luther Pass, July 2001. • **Inset:** The El Dorado Chapter flower: *Calochortus clavatus* var. *avius*. Photographs by S. Perry.





Top: Marin County Chapter members botanizing the drying strand of Lake Nicasio, September 2004. • **Bottom:** Marin County Chapter members in 1992 enjoying a merry potluck after a series of walks. Photographs by K. Howard.

“fire breaks” by clearing wide swaths along trails and roads in MMWD and State Parks. We have also supported public acquisitions of threatened native habitat. We were among the original signatories and currently participate in the Marin/Sonoma Weed Management Area.

We have had regular weekend field trips in Marin and nearby counties, and extended camping trips farther afield. Since 1975 the chapter has sponsored weekday field trips from March through May throughout the county to educate our members and the public about our glorious native flora. Chapter members have also monitored rare plant populations and developed

plant lists for our public lands on alternate weeks.

Monitoring rare species is a continuing focus for the chapter. Since 1996, a group of members meets on Fridays from March through August to monitor known rare plant locations and search for others within Point Reyes National Seashore. Two species have been rediscovered, and three species new to Marin were found on these outings.

The chapter has assisted in the preparation of several native plant publications, including McHoul’s *Wildflowers of Marin* (1978); Shuford and Tomassi’s *Plant Communities of Marin* (1989); and Point Reyes National Seashore Association’s *Wildflowers of Point Reyes National Seashore* (1996). Since 1995 several members have been working with the California Academy of Sciences Botany Department on the updating of J.T. Howell’s *Marin Flora* which may be published later this year.

The CNPS poster project has had input from several Marin Chapter members. Wilma Follette initiated the project in 1979 and produced beautiful posters such as *Spring Wildflowers* and *Wildflowers of the Desert* (Gompers Saijo, artist); *Shrubs of the Coast Ranges* and *Wildflowers of the Coast* (Svetlana Buchli, artist); and *Wildflowers of the Red-*

wood Forest (Rosemary Bauman, artist). Kristin Jakob, our Public Programs Chair, was the artist for *Sierra Wildflowers* and the new *Native Grasses* posters.

Annual spring plant sales at the beautiful Tiburon Audubon Center have been a major source of income since 1975. Eight months of the year we publish the chapter newsletter and hold our general meetings. Our logo is the image of the rare *Calochortus tiburonensis*.

WILLIS LINN JEPSON CHAPTER/ SOLANO COUNTY

Size of chapter: Approximately 78 members

Website address:

www.cnpsjepsonchapter.org

Solano County is mostly rural. It is likely there are more sheep and cows here than people. Still, like many other chapters, we are dealing with increasing development in sensitive areas. We are located east of the coastal mountains and west of the Central Valley. From the Bay to the Delta, we have a variety of soils, wildlife (including several unique invertebrates), plants, and ecosystems. Our county is full of ecological wonders from vernal pools to salt marshes. There is

A Willis Linn Jepson Chapter member at the King Ranch in Solano County, where the chapter is doing restoration work for the Solano Land Trust. Photograph by M. Shaw.





Willis Linn Jepson Chapter members at the Botanic Garden in Benicia. Photograph by S. Dean.

something here for every nature lover.

We organize several activities and events throughout the county, including a semi-annual plant sale. Our propagation committee works on inventory for these plant sales as well as growing plants for restoration projects. We have two growing areas, one at Benicia State Recreational Area, and the other at the Vallejo Sanitation District where we irrigate the plants with recycled water. All of our efforts have been successful (and some have been too successful: marsh plants, given a millimeter will take an acre, and when we repotted one, it took two of us and a crowbar to extricate the roots!).

Our environmental education program covers curricula from grades 2 through 5. Mary Shaw originated this program, got it funded, and has been running it successfully for several years now. The grade appropriate programs explore how the environment affects our lives: past, present, and future.

Last, but certainly not least, was a goal originally envisioned by chapter founder Forrest Deaner to create a botanical garden somewhere in the town of Benicia. After many

attempts and proposals, his widow Norma pushed the dream forward. With a grant from the Coastal Conservancy, the garden is now open to the public.

YERBA BUENA CHAPTER

Size of chapter: Approximately 595 members

Website address: www.cnps-yerbabuena.org

The Yerba Buena Chapter now includes San Francisco County and the northern half of San Mateo County, but it was formerly a part of the larger, four-county San Fran-

cisco Bay Chapter. In 1986 the chapter board (of what is now the East Bay Chapter), recognized that members on the west side of the Bay rarely participated in chapter activities and encouraged us to form our own chapter, which we did. Choosing a name and logo was easy: until the United States invaded in 1846, San Francisco was known as Yerba Buena, in tribute to the “good herb” of the mint family, *Satureja douglasii*. The formative group was unanimous in choosing the same plant as its chapter name and logo.

Social, transportation, and planning issues dominate public attention in our densely-settled area, and biological awareness is not common. Therefore we made education a

Yerba Buena Chapter members on San Bruno Mountain for a winter hike led by Jake Sigg (to the left, with walking stick). This mountain is a richly diverse area and has been at the center of development battles for many years. In the distance is San Francisco. Photograph by M. Bors.



chapter priority, and take pride in our heavily-attended member programs, well-edited newsletter, and our networking with a number of diverse groups. Our chapter photography group exhibits in many venues, and the annual plant sale is very popular. Recognizing that the future of plant protection lies with today's young people, involving them is uppermost in our minds, which is why we are currently attempting to revitalize our education committee.

The main impetus for starting a plant sale ten years ago was to make available plants propagated from the local genetic stock, and that is exclusively what we sell. While it is difficult for many chapters to do this because they cover such large and diverse areas, we are lucky in that respect, as our chapter covers only about 100 square miles.

Listening to other chapters at state CNPS meetings report on their struggles with unsympathetic commissions and boards, we feel lucky to be spared that kind of pain. However, we have our own set of problems. We are an urban area and our wildlands are highly fragmented, tiny parcels that are heavily impacted, subject to multiple and competing uses, and infested with weeds. As functioning ecosystems they need assistance. Nevertheless they are cherished as refuges for wildflowers and other native plants, as wildlife habitat, living museums, outdoor classrooms, and open spaces, and their protection and restoration has been a high chapter priority from its inception.

For instance, we persuaded the San Francisco Recreation and Park Department to acquire natural areas remaining in private hands and to manage them and its other parcels for their natural values. The department created a Natural Areas Program, currently staffed by eight, and our volunteers work alongside paid staff. In addition to conducting our own weekly work

parties, we have encouraged other community groups to care for local areas. Our newsletter currently has contact numbers for 39 different projects that are caring for the land in our area, many of which were either spawned or assisted by CNPS. San Bruno Mountain, included by E.O. Wilson as one of his 18 world biodiversity hotspots, is a de facto island completely encircled by cities in our chapter area. It is the site of the first Habitat Conservation Plan and its health is declining; as a consequence, attempting arrest of that decline will consume much of our energy.

We think biological diversity is important to people's lives, but recognize that this component is frequently overlooked by those working toward healthy surroundings. Therefore we help organizations to enhance their agenda or mission by including biodiversity, we keep environmental justice on our radar screen, and we try to attract and encourage environmentally-caring local residents to join CNPS, support CNPS causes, and share in the work of preserving our remnant local biotic communities for future generations.

EAST BAY CHAPTER

Size of chapter: Approximately 1215 members

Website address: www.ebcnps.org

The CNPS East Bay Chapter was so named in 1986, but its roots go back to the beginning of the Society, which was formed 40 years ago in the Bay Area by a handful of dedicated native plant enthusiasts. One of the first endeavors of the Society was to try and save the native plant garden in the East Bay at Tilden. The campaign was successful: it thrives today as the East Bay Regional Parks Botanic Garden, and is one of the few public gardens to be totally dedicated to na-



East Bay Chapter member standing in a sea of milk thistle (*Silybum marianum*) at the site of a recently removed dam. Photograph by B. Case.

tive flora. It wasn't until several other chapters had been formed that the San Francisco Bay Chapter began in 1973 with 200 members, and covered Alameda, Contra Costa, San Francisco, and San Mateo counties. In 1986 the chapter split, with San Francisco and San Mateo counties forming the new Yerba Buena Chapter and Alameda and Contra Costa counties forming the East Bay Chapter. Since then the East Bay Chapter has grown in number to over 1,200, and we are able to support many activities to help educate the public about rare plants and aid in their protection.

For example, our Vegetation Committee trains volunteers on the CNPS protocol for data collection. This information is used in vegetation classification and mapping efforts in the East Bay. Our Rare and Unusual Plants Committee now has a table display of our A1-ranked rare and unusual plants that includes information on their location, habitat, and last date seen at each site. A team of volunteers monitors these sites and provides timely feedback to the committee chair. The results of the data gathered by these two committees make it possible for our

newly hired part-time conservation analyst to provide public comment on vital conservation issues.

Among other chapter activities, we hold plant sales and field trips, and cooperate with other groups to help remove problem invasive plants from the East Bay. Recently we were invited to have a seat on the Bay Area Open Space Council, and have also been investigating a conservation easement in Oakland. Our updated website now lists all A1 and A2 plants in our area, contains copies of chapter newsletters and updates on committee work, and also features information on our field trips and special events.

One of the East Bay's most treasured botanical spots is the Springtown Alkali Sink area. This area contains one of the last seven populations of palmate-bracted bird's beak (*Cordylanthus palmatus*) and has the most genetically diverse population known in the world. It is being threatened by development (again). We are recruiting local volunteers/members to help increase public awareness of the botanical devastation this development would cause.

We also support the non-profit group, Save Mt. Diablo. One of their newest acquisition projects is the 207-acre Mangini Ranch. Protection of the Ranch is critical in the long campaign to keep urban development from engulfing the borders of Mount Diablo State Park. The Ranch is the location of the 1936 collection of the rare Mount Diablo buckwheat (*Eriogonum truncatum*) by Mary Bowerman as well as a number of other rare species.

We operate two native plant nurseries, one which sells year-round and has a restoration focus, the other which grows year-round and houses our plant sale. Both have dedicated volunteers who diligently work to ensure a wide variety of native plants are available to our local communities.

SANTA CRUZ CHAPTER

Size of chapter: Approximately 324 members

Website address:
www.cruzcnps.org

Located on California's central coast south of San Francisco and perched on the northern (sunny!) side of the Monterey Bay, Santa Cruz County is home to a diverse assemblage of vegetation communities, geologic features, and dedicated CNPS volunteers. Our Mediterranean coastal climate, coupled with diverse soil types and topography, has resulted in a complex and varied array of habitats from chaparral to coastal prairie grasslands, redwood and mixed evergreen forests to coastal scrub, and freshwater and salt marshes. Perhaps the rarest vegetation communities in the county are the inland sand hills of Ben Lomond and Bonny Doon, and the wet alkaline grassland of Soda Lake, both of which contain numerous endemic plants.

In the sand hills, the combination of a relatively humid coastal climate coupled with a coarse, nutrient-poor soil composed of ancient, uplifted marine sand deposits has resulted in a unique assemblage of rare and endangered plants, many of which are endemic, such

as the silverleaf manzanita (*Arctostaphylos silvicola*) or Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*); other species here occur as disjunct from the immediate coast, for example sea thrift (*Armeria maritima*) and beach sage-wort (*Artemisia pycnocephala*). Still others are usually found in montane habitats far inland, for example ponderosa pine (*Pinus ponderosa*) and pussy paws (*Calyptidium umbellatum*).

At Soda Lake occurs the only alkaline grassland community in the entire Santa Cruz Mountains bioregion. At least seven to eight genera and 13 species occur there which are found nowhere else in Santa Cruz County, including the rare saline clover (*Trifolium depauperatum* var. *hydrophilum*) that was previously presumed extinct.

Our chapter volunteers are highly dedicated, passionate folks with a love of nature and a sense of stewardship. Our Conservation Committee works to save the above-mentioned natural communities from destruction by quarry expansion. Our habitat restoration program takes volunteers from ages 8 to 80 on biweekly



Above right: Sand hills, Bonny Doon Ecological Reserve, Santa Cruz County. Photograph by J. Hillman. Below: CNPS Habitat Restoration Program and the Girl Scouts Troup of Monterey Bay, pulling invasive beachgrass (*Ammophila arenaria*) at Sunset State Beach. Photograph by D. Susoy.



work parties to remove invasive species from our State parks. Our chapter Flora Committee has been working since 1998 to create a flora of Santa Cruz County which will be published in fall of 2005. In addition, our plant propagation folks diligently grow a vast array of native plants for our twice yearly plant sale. As you can see from these various activities, we love this land and are dedicated to its preservation and continued ecological integrity.

SANTA CLARA VALLEY CHAPTER

Size of Chapter: Approximately 844 members

Website Address: www.cnps-scv.org

The Santa Clara Valley Chapter was formed in 1972, and covers all of Santa Clara County and most of San Mateo County. It includes miles of San Francisco Bay and Pacific coastline, redwood and mixed evergreen forests in the Santa Cruz Mountains, chaparral, serpentine grasslands and oak woodlands in the foothills, and the wilderness of the Mt. Hamilton Range. The area contains 140 rare or endangered plant species, including several narrowly distributed endemics.

The members of the chapter have fought long and hard to preserve open space and vital native habitats in an area that is rapidly becoming urbanized. The serpentine grasslands and foothill habitat remnants that make up Edgewood County Natural Preserve in San Mateo County were saved from becoming a golf course thanks to chapter members recognizing the irreplaceable value of this 467-acre park, which contains nearly 500 plant species. Significant habitat restoration efforts have continued since the park was preserved in 1993. Although a large part of the park had been invaded by pests such as yellow star-thistle (*Centaurea*

solstitialis) and teasel (*Dipsacus sativus*), these species are on retreat, thanks to the long-term dedication of volunteer weed warriors.

Our chapter has many active subgroups, including Gardening with Natives, devoted to increasing public awareness of California's amazing flora by bringing plants into the home garden. The Going Native Garden Tour, an annual event supported in part by CNPS, features private and public gardens designed and planted with native plants, and has been tremendously popular in its first three years.

Every spring the chapter holds a two-day wildflower show featuring plants from throughout central California. The chapter also maintains a nursery and holds two plant sales a year to bring native plants to local landscapers and homeowners. We also bring people to the plants, with numerous day hikes and camping trips throughout the year to all areas of the state.

Other chapter activities include six program meetings per year, participation in two county weed management areas, photography and keying groups, publication of our newsletter *The Blazing Star* six times per year, graduate student scholarships, and numerous invasive removal projects. We maintain an office in Palo Alto to further our numerous conservation activities, including our involvement in the Santa Clara County HCP/NCCP and our efforts to protect the Coyote Ridge

serpentine area. The recent completion of the multi-year vegetation assessment project for Coyote Ridge was a major accomplishment for our chapter.

Each chapter summary was authored by one or more representatives from that chapter.



Top: Display of native grasses at the bi-annual Santa Clara Valley Chapter plant sale. By the end of the day, all the grasses were sold out. **Middle:** Native plant sale, Santa Clara Valley Chapter. **Bottom:** Santa Clara Valley Chapter wildflower show. All photographs by A. Kumar.



CNPS continues to fight to limit the impact of invasive plants on native ecosystems. CNPS Chapters and individuals have funded research on the biological control of Cape ivy (*Delairea odorata*), seen here invading a riparian corridor in Cambria, San Luis Obispo County. All photographs by the author unless otherwise noted.

THE CNPS CONSERVATION PROGRAM

by David Chipping

The California Native Plant Society (CNPS) is “Dedicated to the Preservation of the California Flora.” The goal of the CNPS Conservation Program is to achieve that preservation through as many tools as we can bring to bear. This is not an easy task in view of the recent drift away from a conservation ethic by both the federal and state government, powerful economic forces focused on development and wildland con-

version (not conservation), and recreational interests that favor uses of our public lands that result in habitat destruction.

Our conservation goals are first to inform decision makers, to either completely protect plant resources or else forge palatable compromises with development interests, to have meaningful conservation laws in place and implemented, and to be able to mount a legal defense of threatened resources

when needed. Where possible we work with like-minded fellow conservation organizations.

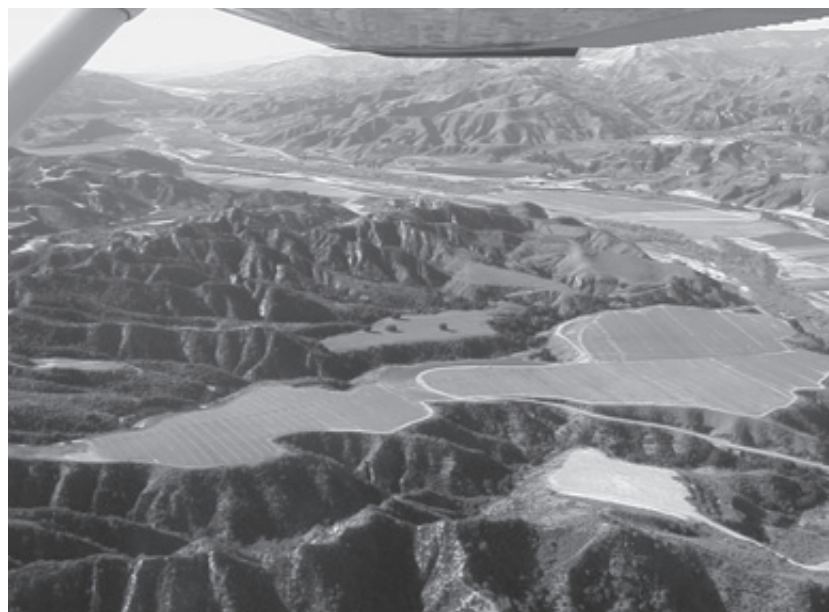
Incidentally, not the least of our problems lies within the definition of “conservation” which means different things to different organizations and government agencies. Funk and Wagnall’s dictionary defines conservation as, “the act of keeping or protecting from loss or injury,” which is the CNPS goal for our flora, but then continues with a

troubling second definition: “The preservation of natural resources such as forests . . . for economic or recreational use.” For CNPS, recreational and economic uses can be big headaches, and have put us in conflict with some other conservation organizations.

THE CURRENT CONSERVATION PROGRAM STRUCTURE

While just about everything that CNPS does could be called conservation, the program as defined within our administrative structure has been limited to an unpaid conservation director and two staff. As we go to press we have a director and one staff person, but when you consider that most chapters have at least one conservation position on their boards, this adds up to a lot of people throughout the organization who work directly on conservation issues.

The role of the director and staff at the state level has been to facilitate conservation actions that cannot be handled solely by an indi-



Top: Agricultural conversion of lands known to contain San Fernando Valley spineflower, soon after the species was rediscovered after being thought extinct. Photograph by D. Magney. • Right: Los Angeles-Santa Monica Mountains Chapter has worked very hard to save *Astragalus brauntonii* habitat from development. The plant is found in a narrow range of soils in Ventura, Los Angeles, and Orange counties. Of 28 populations, 12 have been extirpated and most of the others are at risk.



SUCCESS ON HEARST RANCH

Arroyo de la Cruz is a well known center of endemism. CNPS was concerned that the original conservation easement would allow construction of three homes within this important drainage. After CNPS testimony at public hearings raised this issue, botanists Malcolm McLeod and John Chesnut met with Hearst representatives and the proposed easement holder, Rangeland Trust, to provide them with vital species distribution information, and the home sites were moved away from the Arroyo.



View eastward along Arroyo de la Cruz. Photographs by D. Walters. • Inset: Arroyo de la Cruz mariposa lily (*Calochortus clavatus* var. *recurvifolius*).

WORKING WITH OTHERS

CNPS chapter members in San Luis Obispo County joined others in forming an independent non-profit organization to bring local, state, and federal agencies together. They cooperated to make land purchases that protected rare Los Osos coastal dune habitat. The consortium of agencies, "Partners for the Conservation of the Los Osos Coastal Dunes," received a commendation from the National Atmospheric and Oceanic Administration and from Vice President Gore.



Morro manzanita (*Arctostaphylos morroensis*) habitat protected as part of the Los Osos Greenbelt. • Inset: Morro manzanita.

vidual chapter, and to provide services such as advice on handling specific issues, such as a city's general plan revision. In many cases the state program will handle regional concerns such as the routing of a high-speed rail link through the Central Valley and by organizing committees to follow and respond to the issue. Committees have been formed to track changes in forestry regulation, management of desert lands, invasive plant control, wetland regulation, specific habitat conservation plans along with the general regulation surrounding such plans, and many similar issues.

Conservation also encompasses our Legislation Program, which responds mainly to state issues and to regulation changes coming from Sacramento in partnership with our legislative consultant.

THE RELATIONSHIP TO OTHER PROGRAMS WITHIN CNPS

The CNPS Rare Plant Program has maintained a well-deserved reputation as a scientific authority

on the rarity status of California plant species. More recently the CNPS Vegetation Program has been setting the standard in California for the classification of vegetation types. Both programs were born of conservation needs and are dedicated to increasing knowledge of plant species and vegetation types without advocacy.

This was a sensible position, adopted when CNPS was formed, to ensure that a scientific fact coming from CNPS was not colored by bias. By creating the *Inventory of Rare and Endangered Plants of California* and the *Manual of California Vegetation*, CNPS can point with pride to products of intense scientific peer review that have the power of scientific authority. These can then be used by the Conservation Program as critical references in arguments regarding the impacts of proposed political actions or development projects. Most recently we have been involved in the definition of areas of critical habitat for plants listed under the Federal Endangered Species Act, an action that requires both scientific program inputs on species needs, and conservation program inputs on the

means by which these needs can be met.

The CNPS Education and Horticulture programs also relate to conservation, by educating the public about the state of natural resources and generating an interest in native flora. Sometimes they blend with our Conservation Program goals, as in our efforts to get Caltrans to reject invasive species in their roadside plantings, or recent efforts to produce fire-safe but ecologically valuable wildfire buffers in southern California. Our Invasive Plants Committee and its chapter equivalents are frequently "gardening" in natural habitat by removing pest species.

The relationships between state programs vary depending upon the issue at hand. Currently all programs meet periodically to explore cooperative endeavors in a series of "cross-pollination" meetings. Such issues as the best plant science response to county-wide Habitat Conservation Plans—which are increasingly becoming a dominant de facto land-use planning tool for entire counties and cities—are high on the CNPS agenda list as they use generalized vegetation types as

the typical mapping unit, and this is not always the best strategy for the protection of plants.

Interestingly enough, it was a conservation need that resulted in the Vegetation Program being created. During the late 1980s the first regional federal Habitat Conservation Plan (HCP) and state Natural Community Conservation Plan (NCCP) were being developed in San Diego County. However, they were being designed around vegetation types (such as coastal sage scrub standing in as habitat for California gnatcatcher) and not individual plant species. When we realized that there were no good scientific standards for describing vegetation types, CNPS rushed to create some good science under a committee chaired by Dr. Michael Barbour (for more about the Vegetation Program, see pages 18-23).

HOW THE PROGRAM EVOLVED

From its inception, CNPS has been a conservation organization. CNPS started when the current East Bay chapter organized to fight



Above left: The management of mountain meadows by the Forest Service, particularly regarding summer season grazing, is deficient throughout most California National Forests. CNPS has been active in pressuring for better monitoring of meadow conditions. Grazed meadows seldom look as healthy as this beauty in Lassen National Park. • Above right: What was once a desert wash with desert willow (*Chilopsis linearis*) is now reduced to sticks and cow pies. While CNPS believes that grazing may be an appropriate management tool in less arid environments, experience shows that grazing in the hot deserts can seriously damage native plant populations.

a threat to botanical resources in the East Bay Hills. My own chapter in San Luis Obispo was formed shortly afterwards, in part to combat a proposed massive fuel break through a rare stand of Sargent cypress. Both situations requiring taking strong public stands against powerful interests.

A scientific evaluation of the rarity of elements of our flora was started by G. Ledyard Stebbins as a card index file, and was developing at a time when the first legislation to protect plants was being formulated. The CNPS Conservation Program was active in getting legislation passed to protect plants with

Sheep grazing in the area now included in Carrizo Plain National Monument. The timing and amount of grazing, the choice of animal, and other issues are of concern to CNPS regarding the impacts to native flora, particularly to those native species growing in association with aggressive Eurasian range grasses.





the California Native Plant Protection Act (1977) and the far superior California Endangered Species Act (1984), along with the federal Endangered Species Act of 1973, the latter addressing plants for the first time.

The first conservation staff position within CNPS was created in response to a mass revision of federal forest plans that took place in the late 1980s. Jim Jokerst was hired to review mountains of documents and to provide some scientific insight and guidance from CNPS to the Forest Service. After Jim's untimely death, our concern over the management of federal forest lands continued with Mary Meyer, and then with Dr. Emily Roberson. Dr. Roberson provided capable guidance to CNPS chapters, worked with many different conservation committees, forged a strong association with the Endangered Species Coalition, and concentrated on issues such as grazing impacts on forest lands and the need for staff botanists in Forest Service district offices. She also started the Native Plant Protection Campaign, a na-



The protection of rare desert plant associations such as those found with California palms (*Washingtonia filifera*) (left) and elephant tree (*Bursera microphylla*) (middle) or plants found in rare soil types such as the lone buckwheat (*Eriogonum apricum* var. *apricum*) (right) require special vigilance.

tional network of organizations that advocates for native plant species and community conservation, and left us in 2004 to build the Campaign as an independent entity. In the late 1990s CNPS hired Ileene Anderson as Southern California Regional Botanist. She addressed a series of Mojave Desert land-use issues that were overwhelming the Desert Committee, and has taken over coordinating actions in the four southern national forests. Ileene has been successful in stemming the impacts of limestone mining on carbonate endemic flora in the San Bernardino National Forests. She also works with the conservation committees of several southern California CNPS chapters, and has represented CNPS on such diverse issues as the planned Newhall Ranch in Ventura County, and the development of giant habitat conservation plans in the Inland Empire. She also played a strong role in building chapter strength in the region.

As you might guess, CNPS has never had enough staff to take care of all the threats to California's floral heritage that arise on a daily basis. However, our paid staff has always been of exceptional quality and extremely hardworking. The organization also intends to profes-

sionalize the Conservation Director position as soon as sufficient funds can be found. We are currently conducting a series of conservation meetings throughout the state aimed at envisioning what we want the program to be, but it is already clear that many chapters want the program to provide more consultative help with their local conservation activities.

WHERE ARE THE BATTLE LINES TODAY?

The extended debate that preceded enactment of the environmental protection legislation of the "green" 1970s took place during a time when the prevailing public attitude was to protect the "commons" of air and water quality and biological richness. Today, however, we are in a period where the concept of a "commons" seems to be vanishing, and many behave as if nothing exists but private property.

Consequently, despite the presence of various protection acts, CNPS is still forced to fight as actively as ever to protect native habitat due to an unprecedented level of attacks on government regulation

by politicians and development interests. Thus a very large amount of our time is spent fighting direct assaults on the protection of individual species, and on the other wholesale exemptions regarding the application of the Acts to certain agencies and activities.

THE WAR IN THE WOODS

We have continued to actively engage the US Forest Service on a national and local level, although the work of many decades is rapidly being undone by an administration that seems to be more concerned with resource extraction than conservation. CNPS is working with several national conservation organizations on issues such as reduced opportunities for public review of forest plans and failure to monitor the impacts of grazing on forest resources. A current hot issue is the adoption of illegal off-highway vehicle trails into the trails system. We are also trying to get more CNPS volunteers to monitor and comment on the planning processes within their local National Forest or Ranger District as part of local chapter activities.

Regarding issues of forests on state and private lands, Greg Jirak recently tried to build an inter-chapter network to review timber harvesting plans and forestry regulations, but was unable to find sufficient volunteers or funding. Part of this work is being carried on by Jen Kalt and Vivian Parker, but much more help is needed. CNPS finds fault with the current process, particularly the lack of meaningful review by trustee agencies and the



blanket approval of harvesting programs that fail to identify the locations of rare plant populations through field surveys or sufficiently mitigate damage. This minimal oversight is partly due to funding reductions in state agency budgets, and thus is an issue for our Legislative

Above right: CNPS continues to monitor and comment on changes in Forest Service management policy, including the misuse of the so-called Healthy Forests Initiative to log more commercial lumber rather than increase fire safety around communities. Such policies are also being instituted within Sequoia National Monument and have been protested by the California Attorney General. • Right: The beautiful harlequin lupine (*Lupinus stiversii*) is one of many species threatened by massive development pressures in the Sierra Nevada foothills.





Program. CNPS has also been working with the California Oak Foundation on several issues, including proposed massive removals of oaks in the Sierra foothills and proposed massive herbicide applications to eliminate native flora in favor of timber plantations.

DESERTS

Our greatest problem seems to be the growing sympathy shown to extractive industries and to active recreation users of the desert at the expense of desert habitat. An ongoing battle continues in the protection of plants from off-highway vehicles in the Algodones Dunes. Steve Hartman is maintaining a watch on invasive plants, particularly some nasty mustards that are invading Joshua Tree National Park. Cindy Burrascano and the San Diego Chapter continue to monitor activities in Anza-Borrego State Park.

URBAN PLANNING AND THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

Soon after CNPS was formed, the California Environmental Quality Act (CEQA) of 1970 became the legislation that has affected plant conservation on private and state lands like no other. It was supported strongly early on by the CNPS Legislative Committee, and remains an area of great concern. Every year the conservation community and the anti-regulation forces clash on minor and major changes to language, both in the

Act itself and in the all-important CEQA Guidelines by which the Act is implemented.

CNPS maintains a Legislative Consultant, Vern Goehring, who is backed by a Legislative Committee that waxes and wanes in size. We are trying to beef up our letter writing output throughout our membership concerning legislation, and welcome people who could write a letter or two each month as the need arises in support of CNPS positions. Go to the CNPS web site to join our "alert list," or contact your chapter's conservation chair.

"Working" the legislature can be like stepping on eggshells, and sometimes puts CNPS—with its species-centered philosophy—at odds with other green organizations that favor recreation, high-speed rail lines, and generic multi-use open space.

While the legislation end of things is taken care of by the state CNPS Conservation Program, most of the battles are fought by chapters on individual projects. This is an ongoing, never-ending activity that requires amazing dedication on the part of volunteers in reading voluminous environmental impact reports, writing letters, testifying at long and often boring meetings, and sometimes asking help from other chapters and the state. Some people such as Corky Matthews of the Monterey Bay Chapter have been doing this great service for decades.

It is in the realm of abuses of CEQA and poor mitigation of impacts to native flora that CNPS most often finds itself in court, where most issues are resolved in settlement. I regret to report that a number of California's counties and cities attempt to circumvent the spirit of CEQA at every turn. As these

Top: A fenced enclosure on the Algodones Dunes shows what might have been there in the absence of the off-highway vehicles that are present on all sides of the enclosure. CNPS has been protesting the degree to which agencies fail to protect floral resources in the dunes. • **Middle:** A highway delineates protected and unprotected habitat in the Algodones Dunes. CNPS is working to maximize protection of the dune flora from off-highway vehicles. • **Bottom:** After much pressure on agencies, the off-highway vehicle destruction above Afton Canyon in the Mojave Desert has been halted.



Martis Valley, adjacent to Truckee, has wetlands and sagebrush steppe that are threatened by changes in the Placer County General Plan. Such large scale developments can overwhelm the conservation resources of our smaller chapters.

often coincide with an unsympathetic local judiciary and small chapters with no volunteers to face up to the developers, there are still lots of holes in our program.

Tangled with CEQA is the constantly evolving framework of General Plans, Specific Plans, and Land-Use Ordinances that govern future land use. In the coming years, CNPS will be working on producing more tools for chapter members to help them better understand and influence this process.

THE HABITAT CONSERVATION PLAN PROCESS

Perhaps the greatest concern of CNPS is the regional conservation plans that are often countywide or larger. These frequently disregard science, contain insufficient research on the distribution of species, and are unresponsive to changes in future conditions. Above all, mitigation in these plans is frequently poor and based on flawed feasibility estimates. It is critical that CNPS fol-

low each of these plans, especially since they sometimes encompass an entire county, are used to decide which areas will be developed or conserved, and generally replace land-use review under CEQA once they are in place. In many cases *plant* conservation is given only passing consideration in plans driven by the protection of animal species.

One such issue is the conservation of vernal pools within the entire Central Valley. Carol Witham has taken a leadership role on these wetland issues, but the current US Fish and Wildlife Service administration appears to place economic interests far higher than those of the species it is meant to protect. We would welcome more legal experts on wetland protection, endangered species protection, and the legal implications of flawed regional planning efforts.

ECOSYSTEM INTEGRITY

Another statewide issue concerns the control of invasive plants.

A small but determined committee generates cooperative action with the California Invasive Plant Council and with the state's network of Weed Management Areas. Most weed control programs operate at the chapter level, but state and federal policy issues are addressed by the state Conservation Committee. A current "hot button" issue regarding invasive plants is the role of herbicides in weed control.

A FINAL WORD

I will be stepping down shortly as conservation director, although I will remain active in the program. Having been in the position since 1997, it is now time to step aside. It has been a great experience, and I will never cease to be amazed at the dedication shown and the thousands of hours given by our volunteers. They work for the most noble of causes.

David Chipping, 1530 Bayview Heights Drive, Los Osos, CA 93405. dchippin@calpoly.edu



Plant communities such as Engelmann oak woodlands are being documented and defined by CNPS staff and other biologists for scientific and conservation purposes. Photograph by J. Evens.

CNPS VEGETATION PROGRAM: A FRESH LOOK BACK AND A NEW LOOK FORWARD

by Todd Keeler-Wolf and Julie M. Evens

The inception of the CNPS Vegetation Program occurred 15 years ago when a select team of CNPS visionaries got together to advance a new model for conserving the state's native plants through plant communities. Unlike the 11th hour species-by-species approach that was the standard, but was frustrating to all those involved in conservation work, this new approach advocated for conserving the larger habitat in which rare and endangered species were found. This community-based approach allows biologists to recognize and document plant occur-

rences at a much broader scale than the individual species, taking into account the set of plant species that occur together in an area along with wildlife that goes with the plants. In addition, this new approach allows biologists to identify the most important sites for conserving our nation's biodiversity, including those that contain rare species occurrences as well as those that represent the many ecological regions in the state.

Thus, the CNPS Long-Term Planning Committee identified "plant communities" as the biggest neglected opportunity in the orga-

nization at that time. They wrote a white paper in which they spelled out the following tenets of plant conservation:

- We realize that in order to conserve species it is most effective to conserve the habitat around them.
- The most realistic way to conserve habitat is to translate it into discrete plant communities that can be clearly identified and thus quantified.
- Beyond the individual plants within these communities, there are also other values that will be

conserved when these entities are protected, including the communities themselves and the wildlife that depends on them.

- Some plant communities are, in and of themselves, rare or threatened and should be protected as a means of preserving a portion of our natural floristic heritage.
- Common as well as rare communities need to be protected and properly managed, with an understanding that the common types precede legal protection for the rare.
- Laws should be enacted to conserve the communities themselves.
- The most effective way to conserve communities is to develop a means to decisively identify them and catalog their distributions, such as through classifications of their existence and maps of their extent.

Out of those basic ideas sprang the CNPS Plant Communities Committee in 1991. The team requested that Dr. Michael Barbour, one of the foremost plant ecologists in the nation and a long-term advocate of native plants and vegetation conservation, serve as the first chair of the new committee.

Dr. Barbour developed a veritable who's who of plant ecologists, vegetation experts, and chapter members to volunteer as members of the committee. These included members of academia, scientists from state and federal agencies, experienced members of the ecological consulting community, and the visionary CNPS members who started the whole process (Keeler-Wolf 1993; Hillyard 1999).

Initially, the committee decided to focus on two main goals: 1) developing a data collection procedure for inventorying and protecting rare and threatened plant communities, and 2) developing an effective system to classify plant com-

munities into vegetation types that can be recognized easily by different biologists and that could be identified systematically for conservation purposes.

DATA COLLECTION PROCEDURE

By the spring of 1992, the committee set forth a standard sampling protocol that was effective yet simple enough to be used by any interested professional or amateur who knew how to identify plants. The protocol, the CNPS Point Intercept Sampling Technique (see Sawyer and Keeler-Wolf

1995), involves the collection of valuable data on a plant community in order to define and inventory it quantitatively. The data collected include floristic, environmental, and site information. The data records are then analyzed quantitatively by ecologists using multivariate statistics to develop clear definitions of the vegetation assemblages comprising these communities and how they differ from similar communities.

This procedure was first used to quantify the definitions and extent of several of the rarest and most threatened vegetation types in the state, as identified by the California Natural Diversity Database's Natu-

Table 1. Partial list of surveys done per region or habitat over the past 15 years using the point intercept, relevé, or rapid assessment methods for purposes of plant community identification.

Location	Transect Point Intercept	Relevé	Rapid Assessment
North and Central Coast Ranges (including serpentine)	82	712	766
Mojave Desert	5	1,510	3,767
Colorado Desert (including Anza-Borrego, Northern & Eastern Colorado, and Joshua Tree)	4	1,318	30
Great Basin Desert	7	548	0
Desert Transition (including alluvial fan scrub and Tehachapi scrublands)	181	250	0
Sierra Nevada (including foothills and montane)	21	4,206	3,296
Valley habitats (including sink scrub, valley oak, and sycamore)	127	150	0
South Coast and Ranges (including coastal sage scrub and chaparral)	126	203	6,211
Salt Marshes (including coastal marshes and Suisun Marsh)	135	199	220
Grasslands (including vernal pools and coastal terrace prairie)	220	1,791	0
Subtotal per Method	908	10,887	14,290

ral Communities Program. These included Sycamore Alluvial Woodland (Keeler-Wolf et al. 1994), Riversidian Alluvial Fan Sage Scrub (Barbour and Wirka 1997), and Southern Maritime Chaparral (Hogan et al. 1996). More than 900 data transects were collected over the course of five years, especially by chapter members in various ecological regions. These have furthered our understanding of many plant communities in the state (see Table 1 on page 19).

These definitions were immediately used in certain cases involving regulatory measures to defend the validity of these plant communities, and to support solutions of either strict mitigation or avoidance of any disturbance to these natural areas. A case in point is the Sycamore Alluvial Woodland, a

Sycamore alluvial woodlands have been sampled systematically across California to better describe the variation and distribution of these rare riparian woodlands. Photograph by T. Keeler-Wolf.



rare riparian woodland that mainly encompasses the intermittent creeks surrounding the southern half of the Central Valley. The definition and mapping of the individual sites where this plant community is located, along with the conservation priority ranking of these sites, has led to the protection of the highest quality locations of these woodlands at Los Baños Creek and Orestimba Creek. Further, this work has alleviated the imminent threat of inundation by proposed off-site storage or flood control dams.

VEGETATION CLASSIFICATION AND MAPPING

While these projects on rare plant community sampling and defining were going on, other members of the Plant Communities Committee were developing a new compendium of all known vegetation and plant communities in the state—one based on surveys of the quantitative literature, quantitative data, and expert opinion. This project started with the best existing classification of natural communities in the state (Holland 1986) and attempted to translate these communities into more floristic and standard terms. This new basis for inventory was being done in a systematic and scientific classification, so that the existence of the plant communities could be defended in site-specific conservation or management plans and within laws such as the California Environmental Quality Act.

In the fall of 1994, the committee completed the first draft of this classification system, which included detailed descriptions of the known plant communities. It was extensively reviewed by members of the committee and outside experts, and CNPS agreed to publish it. In the fall of 1995, the first edi-

tion of *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) was released, and Todd Keeler-Wolf took the chair position of the Plant Communities Committee.

The development of the classification system was vetted and reviewed, in part, by means of a series of symposia held through the American Academy for the Advancement of Science (AAAS). The first of these occurred in 1993 on the campus of the University of California, Santa Barbara, where speakers discussed the methods of quantitative analysis to be used in the classification and the broader over-arching rationale for developing a conservation-based classification of plant communities (Barbour 1995).

A second symposium was held in early 1996, immediately following the release of the book. In this symposium, participants discussed the successes and shortcomings of the contents of the book and the classification, along with the system's future development and use (Keeler-Wolf and Barbour 1997).

A Manual of California Vegetation (MCV) quickly became regarded as the new state standard for vegetation classification. However, experts also recognized that it was far from complete. Almost as soon as it was published, information began pouring in from the academic, agency, and consulting communities about new vegetation types that had yet to be defined. This was actually a positive development, for it contributed to the collection of valuable quantitative data and expert information needed before new plant communities could be defined in the MCV. The publication is regarded as a work-in-progress that will need to be continually refined and updated as new information becomes available on plant communities.

In 1996, only a few months following its publication, new agency



Figure 1. In the past ten years, fine-scale mapping projects have codified specific locations of many vegetation types at the alliance and association levels. Map produced by the California Department of Fish & Game. A color version of this map can be seen at www.cnps.org/images/figure3.jpg.

projects began in California, which evolved into a combined effort of sampling, classification, and mapping the vegetation. These combined, comprehensive efforts have been implemented for purposes of resource management in many of the largest federal and state natural areas in the state. Further, these projects used the MCV system as the primary basis for vegetation classification and mapping. Specific locations of many vegetation types have been codified in associated sampling and mapping projects at fine-scale alliance and association levels (see Figure 1).

In these and other projects that have occurred since then, we have realized the great value of combining baseline sampling, classification, and mapping to accurately define and adequately depict vegetation. We also have refined the sampling methods over a period of several years, and the Vegetation Program has now adopted two additional standard protocols: the relevé and

the rapid assessment methods. These methods have been tested and refined during various sampling projects in the state, including the Northern and Eastern Colorado Desert and Point Reyes National Seashore projects. Additional projects are using the relevé method to catalog the diversity of plant associations in uniquely native habitats of California, such as vernal pools from San Diego County to Modoc and Mendocino counties (Robert Holland, pers. comm.).

These types of projects also have been occurring simultaneously throughout much of the nation. The result has been a renewed national focus on vegetation classification (Grossman et al. 1998), culminating in the ratification of the National Vegetation Classification System (NVCS) by the Federal Geographic Data Center. In many ways, these national efforts have mirrored what CNPS and other organizations have been doing in California.

In 1998, the CNPS Vegetation Committee initiated plans to develop a second edition of MCV to incorporate all new information

gathered on vegetation since the first edition. The original authors, John Sawyer and Todd Keeler-Wolf, have envisioned a more detailed discussion of the distribution of vegetation, and the relationships between the vegetation alliances and the ecological situations that lead to their existence. This has included disturbance information with support from the Federal Joint Fire Sciences Council in a series of five state-wide workshops held between 2000 and 2002. The workshops brought together experts in vegetation and fire ecology to assist in revising the descriptions for the second edition.

The final manuscript of the second edition is slated to be published in late 2006. It will treat twice as many vegetation alliances (previously called "series") as the first edition. It also will incorporate new ecological information on fire and other disturbance ecology, distribution maps, introductory information on the uses of vegetation for conservation, and an extensive photographic catalog of the vegetation types in the state.

Vernal pools are being sampled across the state to identify the unique floristic assemblages that occur in these habitats, such as this location in Sacramento County. Photograph by J. Cox.



VEGETATION PROGRAM STAFF

During the first eight years of its existence, the Plant Communities Committee operated as a separate committee within CNPS that was independent of any particular program. However, in 1999 CNPS officially created a Vegetation Program with the hiring of staff. The first task was to hire a part-time vegetation assistant to help integrate information from the MCV workshops and develop formal descriptions for new vegetation types.

This task first fell to the able

Public training sessions are being taught jointly by the California Native Plant Society and Department of Fish and Game. Participants of the first vegetation workshop in the Sierra Nevada in 2001 learn the ins and outs of sampling vegetation for classification and mapping purposes. Photograph by J. Evens.



hands of Jeanne Wirka, a recent graduate of the UC Davis masters program in the Graduate Group in Ecology. In her year with the program, Jeanne developed a series of tables relating vegetation and species composition to specific plant life history, fire, and disturbance traits.

In 2000, two part-time staff took Jeanne's place. Sau San was hired to continue refining the MCV information tables, and to help coordinate and organize three of the workshops for the integration of new MCV information. She also worked diligently on developing descriptions for many new plant associations that arose from the classification work in several of the California national parks, including Point Reyes, Golden Gate Recreation Area, Joshua Tree, and Yosemite. Mehrey Vaghti also was hired in 2000 by CNPS to act as its first temporary field vegetation ecologist. She worked specifically on completing the Suisun Marsh Vegetation project, a detailed classification and mapping project at the association level.

By the end of 2000, the Vegetation Program had attained a high degree of credibility, and the Chapter Council made the decision at its December state board meeting to hire a permanent full-time vegetation ecologist for an initial term of two years. Julie Evens was hired in 2001, a recent graduate of the Humboldt State University masters program. Primary roles were to coordinate efforts in the state classification sys-

tem and to coordinate vegetation workshops and projects for chapters and the public.

Since the spring of 2001 and continuing to the present, Julie has conducted chapter workshops on vegetation sampling methods. Most workshops were first offered to chapters located in areas that contained habitats lacking detailed vegetation descriptions. For example, we began sampling in poorly-described serpentine habitats, such as Coyote Ridge with the Santa Clara Valley Chapter.

By the fall of 2001, the program also spearheaded training sessions for the public, in which the first participants were taught the new rapid assessment method in the Sierra Nevada amongst the aspen, conifer, and meadow stands. For the past three years, the program has facilitated efforts to have our standard sampling and classification system used by hundreds of chapter members, agency personnel, consulting biologists, and the like.

The program has also initiated pilot projects in ecological regions or counties to establish a vegetation type model of categorizing habitats floristically and cataloguing existing vegetation in maps. CNPS has begun model projects in western Riverside County, central San Diego County, western San Benito County, and now in the Sierra Nevada foothills to test these approaches. We have hired additional full-time and part-time vegetation staff through grants or contracts for these pilot projects, including Anne Klein and Jeanne Taylor.

THE VEGETATION TYPE MODEL

In practice, how does this new vegetation model work? In each region, we collect surveys of plant patterns that recur at multiple locations. We identify the plant species

and their abundance values in the surveys along with site environmental factors, and the information is entered into computer databases. Then we analyze relationships of species occurrences to identify and describe repeated plant associations across the landscape. This information provides the scientific rigor to support delineation of vegetation in detailed maps. The comprehensive vegetation data also support modeling efforts at various scales, including modeling for wildlife and plant species, habitat monitoring, fire effects, land conservation and easements, mitigation, restoration, and many other purposes.

Our goal is to continue establishing the vegetation type model as the standard practice for habitat assessment, monitoring, and conservation purposes. By accurately depicting plant communities in a detailed scientific approach, we can provide synergism in conservation efforts to represent and conserve biodiversity at both the species and ecosystem levels. Thus, we continue to seek new opportunities and support for detailed mapping of vegetation across the state, including a comprehensive map at the alliance and association levels. We expect to complete future editions of *A Manual of California Vegetation* based on this new vegetation model, with sampling and classification progressing concurrently with mapping.

We also think further supplements and guidebooks will be useful to identify local vegetation types and rare plant assemblages, and various CNPS chapters are taking on projects to identify regional variation. In these efforts, we want to facilitate volunteer and public participation in training and implementation of relevé and rapid assessment sampling. These plans will support better statewide recognition of the plant communities that occur in California's diverse ecological regions, and they will im-



The California Native Plant Society supports many efforts in sampling and mapping vegetation with staff and volunteers involved, such as in the Sierra Nevada foothills. Photograph by J. Taylor.

prove conservation decisions as all plant communities are becoming identified and represented.

REFERENCES

- Barbour, M. 1995. The story behind the *Manual of California Vegetation*. *Fremontia* 23:19–22.
- Barbour, M.G. and J. Wirka. 1997. Alluvial scrub vegetation in Southern California: A case study using the vegetation classification of the California Native Plant Society. Contract #FG5638-R-5, US Fish and Wildlife Service Section 6 Program. Unpublished report on file at the California Department of Fish and Game. California Natural Diversity Database, Sacramento, CA.
- Evens, J.M. 2000. Vegetation in watercourses of the eastern Mojave Desert. *Fremontia* 29:26–35.
- Grossman, D.H. et al. 1998. International classification of ecological communities: *Terrestrial vegetation of the United States. Volume I. The National Vegetation Classification System: Development, Status, and Applications*. The Nature Conservancy, Arlington, VA. Available at: <http://www.natureserve.org/publications/library.jsp>.
- Hillyard, D. 1999. A short history of CNPS Vegetation Committee and plans for the future. *Fremontia* 27:7–11.
- Hogan, D., J. Sawyer, and C. Saunders. 1996. Southern maritime chaparral. *Fremontia* 24:3–7.
- Keeler-Wolf, T. 1993. Conserving California's rare plant communities. *Fremontia* 22:14–22.
- Keeler-Wolf, T., C. Royce, and K. Lewis. 1994. The definition and distribution of Central California sycamore alluvial woodland. Unpublished report on file at the California Department of Fish and Game. California Natural Diversity Database, Sacramento, CA.
- Keeler-Wolf, T. and M.G. Barbour. 1997. Conservation and classification of vegetation in California: A symposium. *Fremontia* 25:17–27.
- Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento, CA.

Todd Keeler-Wolf, 1416 9th St., 12th Floor, Sacramento, CA 95814. tkwolf@dfg.ca.gov; Julie M. Evens, 2707 K St., Suite 1, Sacramento, CA 95816. jevencnps.org



The Vine Hill Preserve in Sonoma County. Photograph by D. Graber.

THE CONSERVATION OF TWO SONOMA COUNTY MANZANITAS

by Greg Wablert and Phil Van Soelen



Editor's Note: Portions of this article about the Vine Hill manzanita were previously published in an article by Van Soelen in Pacific Horticulture (2004) and are used with permission by the publisher.

“From the era of collaboration between Milo S. Baker and Alice Eastwood, Sonoma County has been established as a center of endemism for *Arctostaphylos*” (Wells 2000). Indeed, the diversity, endemism, and beauty of

the 18 species and varieties of *Arctostaphylos* found in Sonoma County has long attracted the attention of botanists.

Four species of manzanitas are endemic to Sonoma County: Vine Hill manzanita (*Arctostaphylos densiflora*), Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*), Baker's manzanita (*Arctostaphylos bakeri* ssp. *bakeri*), and The Cedars manzanita (*Arctostaphylos bakeri* ssp. *sublaevis*). All four manzanitas are listed by the California Native Plant

Vine Hill manzanita (*Arctostaphylos densiflora*). Photograph by D. Graber.

Society (CNPS) as rare, threatened, or endangered. Baker's manzanita and Vine Hill manzanita are listed by the California Department of Fish and Game as Rare and Endangered, respectively.

For over 20 years, CNPS Milo Baker Chapter volunteers and preserve stewards have worked hard to conserve the Vine Hill manzanita and the Rincon manzanita. Each has its own small preserve that the chapter actively manages. The Vine Hill Preserve, located near Forestville, is owned outright by CNPS. At the Southridge Preserve on Rincon Ridge in Santa Rosa, the chapter was granted a conservation easement "for the protection and conservation of certain rare and endangered plant species." Over the years, chapter volunteers have monitored these preserves, removed invasive plants, propagated and planted out the rare manzanitas, developed management strategies, and educated local homeowners. Continued vigilance by Milo Baker Chapter preserve stewards and volunteers will be required to ensure the survival of these beautiful plants and the habitats they grow in.

THE VINE HILL MANZANITA

When Santa Rosa Junior College botanist Milo Baker first described the Vine Hill manzanita in 1932, he stated that it was "probably a relict in a region where natural vegetation is fast disappearing through an intensive system of agriculture" (Baker 1932). By that time, according to Baker, the Vine Hill manzanita had been reduced in population to about 100 individuals along a narrow strip of Vine Hill School Road, and about six plants on nearby Vine Hill Road. There may have been a single individual, or a very small population, in the Freestone area eight miles to the southwest (the locality of the 'James



The lower portion of the Vine Hill Preserve showing plantings of propagated Vine Hill manzanita (*Arctostaphylos densiflora*). All photographs by G. Wahlert unless otherwise noted.

West' manzanita; see Van Soelen (2004) for an interesting account of this cultivar). However, no one has found those plants, or any other Vine Hill manzanitas growing outside of the immediate vicinity of the preserve in recent decades.

James Roof, former director of the East Bay Regional Parks Botanic Garden in Berkeley, was much taken by the beauty of *Arctostaphylos densiflora* and writes in flowery prose of his first visit to the location of this taxon's first collection (type locality):

"My first view was on a winter day in 1940. The manzanitas were in rose-colored bloom, and complementing this were the sky-blue flowers of *Ceanothus foliosus* var. *vineatus*. Most of the *Ceanothus* though, was in bud, the red flower-bracts blending enchantingly with the blue flowers. Low shrubs both, in places the two species sprawled into one another, making a mix of colors in the sunlight that was too gorgeous to take. The warm air hummed with legions of bees at bumble. The roadside strip was then about fifteen feet wide and several hundred feet long.

The road's north-facing flank was a long sand slope, and the plants tumbled down it in blooming profusion, ending only at the cultivated margin of a vineyard a hundred feet below. The last remnant of the Sonoma Barren was a very lusty remnant indeed." (Roof 1972a).

This reference to what is referred to by locals as the "Sonoma Barren" reflects Roof's observation that the habitat of the Vine Hill manzanita shares many similarities with that of the pygmy forest barrens of coastal Sonoma and Mendocino counties. The sandy clay soils of Vine Hill are pale yellow to nearly white and are distinctly acid. The Vine Hill manzanita often grows widely spaced with moss and lichens growing on the ground between plants, much as *Arctostaphylos nummularia* grows in the Mendocino Pygmy Barrens. At least two other species growing in association with *A. densiflora* link it with the Pygmy Barrens: bear grass (*Xerophyllum tenax*) and salal (*Gaultheria shallon*).

In James Roof's subsequent visits to the Vine Hill School Road he



Above: A chaparral "barrens" on Rincon Ridge. • Left: Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*) and Rincon ceanothus (*Ceanothus confusus*) are usually found growing together.

witnessed numerous assaults to the roadside flora. He writes of a visit in 1947: "Though the manzanitas were in full bloom, there were no bees working the shrubs for honey. The strip had overnight become an ecological disaster area. Sonoma County road crews had dripped used crankcase oil over the road margin in an experimental program designed to employ used oil as a 'control for roadside weeds and brush'. The oiling had been done the day before; the black sludge still oozed from some of the rose and blue flowers. No savages would have been so heedless of beauty; it was an act of morons" (1972a).

Work crews of the WPA at one point completely denuded this same roadside of vegetation and after

World War II it was bladed by bulldozer at least once. A protest from the Santa Rosa Junior College and growing neighborhood awareness of the rare manzanita slowed the destruction somewhat. Subsequently, the driveways of two newly constructed country homes wiped out another portion of the colony, and in 1957 the farmer owning the land removed a wide swath. All of this so negatively affected the population of Vine Hill manzanita that by 1963, Roof notes that there were only "two shrubs left and one not a good one." Returning in 1967 Roof was "agreeably astonished to discover 14 two- and three-year-old shrubs on the slope that, a long time back, had been so much disturbed" (1972a). This regeneration occurred on the bare soil exposed by the 1957 incident, ten years earlier.

It appears that, to a point, *Arctostaphylos densiflora* thrived on the denuded roadside and hill. Scraping by heavy machinery probably scarified dormant seeds lying in the soil seed bank. This response has

also been observed for Rincon manzanita on Rincon Ridge in Santa Rosa. Neither manzanita sprouts from a burl or lignotuber, but instead relies on seeds cached in the soil seed bank to germinate after fire or disturbance.

On his first visit to Vine Hill, Roof observed, "The sand between the plants was open, clean, and nearly weed-free," indicating plants that had germinated in cleared soil. In his species description, Baker wrote: "Since these road banks are apparently not very old, one wonders where this species maintained itself before the present banks were graded" (1932). Perhaps burning by Native Americans or the lack of fire suppression maintained the necessary ecological and physiological conditions for the Vine Hill manzanita to regenerate.

THE VINE HILL PRESERVE

After visiting the Vine Hill School Road site in 1971 and noting a modest recovery of *Arctostaphylos densiflora* (45 plants), Jim Roof devoted the May 1972 issue of *The Four Seasons* to the history, evolution, and biology of the Vine Hill manzanita. In that issue, he made an eloquent plea for the permanent preservation of the Vine Hill man-

Yard waste smothering Rincon ceanothus (*Ceanothus confusus*).



zanita through the creation of a preserve. It was this act that led to the purchase of the property by The Nature Conservancy and the deeding of the property to CNPS for the creation of the Vine Hill Preserve, home to the last remaining population of *Arctostaphylos densiflora*.

Roof made several suggestions for its management, including the introduction of the very rare local endemic annual *Clarkia imbricata*, a federally listed species. Following his suggestion, members of the Milo Baker Chapter introduced the rare clarkia to the preserve. This was done in the lower portion, an area at the time dominated by weedy non-native grasses and old grapevines, where it has persisted and thrived despite competition with exotics. Also occurring on the preserve is the Vine Hill ceanothus, *Ceanothus foliosus* var. *vineatus*. CNPS lists the Vine Hill ceanothus as rare, but it is not yet listed by state or federal agencies. Until very recently, it was thought that the range of the Vine Hill ceanothus was entirely within the bounds of the preserve. However, in January of 2004, Van Soelen discovered a new population nearby in Sebastopol.

In 1982, acting as preserve steward, Van Soelen took cuttings from many individuals of *A. densiflora* on the preserve, rooted them at California Flora Nursery where he is co-owner, and planted them out from gallon containers the following winter. Mounds remaining from grape cultivation were used to plant on and plantings were typically made in November or December after soaking rains. The new plantings sometimes received a little watering at planting time, but never again. Since the lower portion of the preserve has good sun exposure and has been free of manzanita pathogens, the plantings have thrived. Currently some of those early plantings, now 20 years old, are 15 feet across with a lovely bell-

shaped center and a broad skirt of prostrate growth.

Since the early 1990s, Milo Baker Chapter member Jay Pedersen has been preserve steward at Vine Hill. He has organized chapter volunteers in the ongoing removal of coast live oak (*Quercus agrifolia*) and Douglas-fir (*Pseudotsuga menziesii*) to maintain the barrens and to prevent the conversion of the site into a mixed-evergreen forest. Total eradication of Spanish broom (*Spartium junceum*) has almost been achieved. The propagation and planting of cutting-grown young Vine Hill manzanitas is an ongoing effort.

In the early 1990s Bart O'Brien, Director of Horticulture at Rancho Santa Ana Botanic Garden, delivered to Van Soelen several plants of *Arctostaphylos densiflora* propagated from the Rancho Santa Ana Botanic Garden living collection. The parent plants were the result of cuttings taken at Vine Hill decades earlier when the species was con-

siderably more threatened, and they may represent the reintroduction of genetic material previously lost at the preserve. They were subsequently planted at the preserve where they have thrived. This is one of the few times that rare plants from a living botanical collection have been successfully repatriated.

It is somewhat ironic that one of the most endangered species of *Arctostaphylos*, the Vine Hill manzanita, has given rise to so many useful and adaptable progeny. That *Arctostaphylos densiflora* is an adaptable plant is not fully true: it is the hybrids that are unusually disease resistant, garden tolerant, and widely adaptable. Plants of *A. densiflora* are healthiest when growing in their native sandy soils of the Sebastopol-Forestville area and often "sulk" elsewhere. Popular clones and hybrid cultivars derived from *Arctostaphylos densiflora* include *A. densiflora* 'James West', *A.* 'Howard McMinn', *A.* 'Sentinel' and *A.* 'Harmony' (a detailed

Propagated plants of Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*) and Rincon ceanothus (*Ceanothus confusus*) with deer cages at the Southridge Preserve.



account of the various cultivars is given by Van Soelen 2004).

THE RINCON MANZANITA

The Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*) is another Sonoma County endemic that the Milo Baker Chapter actively manages for conservation. The first mention of this subspecies of *A. stanfordiana* was in 1939 when McMinn writes, "In Sonoma County in the Rincon Ridge and Vine Hill districts this species often becomes much reduced in size and often has a sprawling habit" (McMinn 1939). One year later, in his treatment of the genus, Adams writes, "In the

Vine Hill and Rincon Ridge areas near Santa Rosa, Sonoma Co., this species becomes a much depressed shrub, often cascading over road banks" (Adams 1940).

Apparently, both botanists failed to differentiate the yet-to-be-described Rincon manzanita from the Vine Hill manzanita. In 1980, Roof states, "... there is still an odd, erect form of *A. stanfordiana* near the Vine Hill School, despite early-day reports that the species never occurred there." However, substantial populations of the upright *A. stanfordiana* ssp. *stanfordiana* and the sprawling *A. stanfordiana* ssp. *decumbens* do not presently occur in the immediate area of the Vine Hill Preserve.

Roof originally described Rincon manzanita as a variety of the nominate species *A. stanfordiana* var. *repens* (Roof 1972b). In 1988, Wells demoted it to *A. stanfordiana* forma *decumbens*, a name which was rejected by the editors of *The Jepson Manual* (Wells 1988). A few years later, Wells again changed the sta-

tus of Rincon manzanita to the name that is now generally accepted: *A. stanfordiana* ssp. *decumbens* (1992). Regardless in which infraspecific rank this manzanita is recognized, it is a unique entity with a very limited distribution.

Other populations of this manzanita have been reported from the Bradford Mountain area, above Dry Creek Valley west of Healdsburg. However, these plants are best described as aberrant, semi-spreading individuals of the erect *A. stanfordiana* ssp. *stanfordiana* (Wahlert, personal observation; Roof 1972b). In other locations where *A. stanfordiana* ssp. *stanfordiana* occurs, it is common to see low-growing, stunted individuals on road cuts, firebreaks, and extreme rocky soils mixed in with erect shrubs. Such mixed populations can also be found in Lake County near Lake Pillsbury and French Ridge just north of Upper Lake in the Mendocino National Forest. At an old quarry at Buzzard Peak, Sonoma County, *A. stanfordiana* ssp. *stanfordiana* has been observed in the same stunted condition, rooting at the nodes where branches come into contact with the rocky substrate. However, it is on Rincon Ridge in northeast Santa Rosa that the Rincon manzanita reaches its best development.

On the red rhyolite soils on top of the ridge, Rincon manzanita is found in an open, dwarfed chaparral also reminiscent of a barrens. This low-growing chaparral is dominated by Rincon manzanita, Rincon ceanothus (*Ceanothus confusus*), and wavy-leaved ceanothus (*C. foliosus*). Other associates found on the margins of these "chaparral barrens" include Cushing's manzanita (*A. glandulosa* forma *cushingiana*), common manzanita (*A. manzanita*), coyote brush (*Baccharis pilularis*), chamise (*Adenostoma fasciculata*), and interior live oak (*Quercus wislizenii* var. *frutescens*).

Rincon Ridge has long been



Left: The median strip of Fountain-grove Parkway landscaped with Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*) and Rincon ceanothus (*Ceanothus confusus*). • Below: Native vegetation, including Rincon ceanothus, was scraped away to bare soil at the Southridge Preserve.



known for its unique flora. It is the type locality for Rincon manzanita, Rincon ceanothus, and Sonoma manzanita. Sadly though, most of the natural vegetation, rare plants, and wildlife of Rincon Ridge has been eradicated to make room for office parks and hundreds of new houses.

THE SOUTHRIDGE PRESERVE

In the early 1970s, development plans for Rincon Ridge (known locally as the Fountaingrove Ranch) were being drawn up. This prompted Betty Guggolz, CNPS Fellow and the chapter's former Rare Plant Coordinator, to secure a preserve that would protect both the Rincon manzanita and Rincon ceanothus. After wrangling with developers for many years, a small 4.2-acre conservation easement was granted to the Milo Baker chapter in 1988. Initially there were only three individuals of Rincon manzanita at the site (along with perhaps 200–300 Rincon ceanothus individuals).

Unfortunately, the Southridge Preserve is shaped like a donut and has a very high perimeter-to-area ratio. This type of preserve design does not allow for a buffer area between disturbance and rare plants. Furthermore, only about a third of the preserve is suitable habitat for the Rincon manzanita and Rincon ceanothus.

Over the years, effective management of this tiny urban preserve has been a challenge for the chapter's preserve steward and volunteers. Disturbances from adjacent homeowners continually impact, and sometimes kill, rare plants on the preserve. It is common to see yard waste dumped on top of the rare plants, smothering and killing them. Deer take refuge in the preserve and heavily browse the vegetation. Invasive exotic plants such as French broom and aggressive

natives like Douglas-fir and coyote brush continue to threaten the rare plants at Southridge Preserve.

Chapter volunteers have sought to mitigate these disturbances through yearly work parties and regular monitoring by the chapter preserve steward. Numerous attempts have been made to educate local homeowners about the unique land around their homes and to foster a sense of stewardship. Cages to prevent browsing by deer are constantly being installed and maintained over the rare plants. In 1989 a work party removed all of the Douglas-fir on the preserve, thereby preventing the conversion of the chaparral and black oak woodland to Douglas-fir forest.

Even though this preserve is monitored closely, it continues to be degraded and impacted through outside disturbance. During the summer of 2004, a contractor killed about half of the Rincon ceanothus plants on the preserve by constructing a firebreak in response to the devastating wildfires in southern California in the summer of 2003. While the Rincon manzanitas were

spared, a large portion of the preserve was scraped to bare soil with heavy machinery, leaving it vulnerable to erosion and invasion by exotics. The management of the Southridge Preserve has always been accompanied by a sense of frustration in the face of disturbance by contractors and indifference of local homeowners.

Since the preserve's creation, volunteers have established about 50 new Rincon manzanita plants on the preserve (as well as about 40 Rincon ceanothus). Many of these were propagated from parent material that has since been extirpated. Some Rincon manzanitas propagated by California Flora Nursery have also been planted on the preserve. Despite its delicate beauty, the Rincon manzanita has yet to enter the horticulture trade.

Several years ago, the median strip of Fountaingrove Parkway on Rincon Ridge was landscaped with a few hundred Rincon manzanitas grown from cuttings. These plants represent a starting point for selection and trial of potentially valuable cultivars as some mature plants are

A firebreak was cut through the center of the sensitive plant area at Rincon Ridge Park in 2004.





CNPS volunteer Lynn Houser surveys the Hadley Hill site, a highly valuable remnant of chaparral barrens that may soon be developed.

decidedly more decumbent than others. In the last couple of years California Flora Nursery has made Rincon manzanita available for sale to the public.

The best hope for the conservation of the Rincon manzanita is a new City of Santa Rosa Park. This City park, situated less than a mile from the Chapter's Southridge Preserve, is unique in that it contains a one-acre sensitive plant area that is one of the few remaining patches of Rincon manzanita and Rincon ceanothus. About a quarter of a mile away is another undisturbed remnant of chaparral barrens, but it is not yet protected.

Given Milo Baker Chapter's experience at its small preserve at Southridge, chapter volunteers are in the unique position to influence City of Santa Rosa officials to ensure that this remnant will be properly managed. In the absence of ecological processes that maintained the Rincon manzanita in the past, an intensive management program will be required indefinitely. The Milo Baker Chapter has entered into the "Adopt-A-Greenspace" program with the city. This will involve developing management plans with the

city, monitoring the site, and offering occasional tours for the public, led by chapter volunteers.

Because the city does not have experience with ecological management, the Milo Baker Chapter is working closely with city officials to ensure the proper steps are taken to conserve not only the Rincon manzanita, but also the chaparral habitat. Acting on advice from the Chapter, the city has already removed about 100 Douglas-fir trees that were encroaching on the chaparral and threatening to dominate the entire area. The other main threat to the preserve is browsing by deer and trampling by humans. After many years of planning, the city has recently installed a six-foot high fence around the sensitive plant area that will create a physical barrier to disturbance.

INTO THE FUTURE

The long-term survival of the Vine Hill manzanita and the Rincon manzanita will depend greatly upon the efforts of Milo Baker Chapter preserve stewards and volunteers. While the Vine Hill Preserve is free from intense impacts found in an urban setting, a catastrophic event such as a fire or pathogen could seriously reduce or even extirpate the only remaining population of Vine Hill manzanita.

On Rincon Ridge, where the final stages of development are now occurring, the chapter is still advocating for the conservation of Rincon manzanita. In addition to the ceanothus killed at the Southridge Preserve, a firebreak was constructed at Rincon Ridge Park. This firebreak cut a 30-foot swath through the heart of the sensitive plant area, wiping out about 50-100 plants each of Rincon manzanita and Rincon ceanothus. The park was meant to serve as the major site of protected rare plant habitat as mitigation for development on

Rincon Ridge, yet this small remnant continues to be greatly impacted. There are enormous challenges to ecologically managing an inherently flammable habitat in an urbanized setting.

Clearly, the Milo Baker Chapter has to intensify its cooperation with City officials and contractors to prevent such destructive practices in the future. While there are hundreds of Rincon manzanitas growing in both the Chapter's Southridge Preserve and adopted green space at Rincon Ridge Park, volunteers must remain vigilant to guard against a slow degradation of the last wild plants growing on Rincon Ridge.

REFERENCES

- Adams, J.E. 1940. A systematic study of the genus *Arctostaphylos* Adans. *J. Elisha Mitchell Sci. Soc.* 56(1): 1-62.
- McMinn, H.E. 1939. *An Illustrated Manual of California Shrubs*. J.W. Stacey, San Francisco, CA.
- Baker, M.S. 1932. A new species of *Arctostaphylos*. *Leaflet West. Bot.* 1(4): 31-32.
- Roof, J.B. 1972a. Detective story: Our "lost" Sonoma Barren. *The Four Seasons* 4(2):2-16.
- Roof, J.B. 1972b. A new variety of *Arctostaphylos stanfordiana* from Sonoma County, California. *The Four Seasons* 4(2):16-17.
- Roof, J.B. 1980. A fresh approach to the genus *Arctostaphylos* in California. *The Changing Seasons* 1(2):2-32.
- Van Soelen, P. 2004. The Vine Hill manzanita. *Pacific Horticulture* 65(1): 34-42.
- Wells, P.V. 1988. New combinations in *Arctostaphylos* (Ericaceae): An annotated list of changes in status. *Madroño* 35:330-341.
- Wells, P.V. 1992. New infraspecific taxa and combinations in *Arctostaphylos*. *The Four Seasons* 9(2):54-59.
- Wells, P.V. 2000. *The Manzanitas of California, Also of Mexico and the World*. Published by the author.

Greg Wabliert, 2166 35th Ave., San Francisco, CA 94116. gwabliert@sfsu.edu

IN MEMORIAM: SCOTT SUNDBERG, 1954-2004

Editor's note: Scott Sundberg was a Jepson Manual author and collector in California, and loved the part of Oregon that is part of the California Floristic Province: Josephine and Curry counties. He was a personal friend of mine, and like Jim Hickman and myself, a University of Oregon alumnus. In forging ahead with work on a new flora of Oregon, he followed in Hickman's footsteps. His work is being carried on by his wife, Linda Hardisan, and others.

Scott D. Sundberg of Corvallis, Oregon, died 30 December 2004 of cancer. An Oregon native, Scott's interest in the plants of the state began as an undergraduate at the University of Oregon. He was a botanist for the Bureau of Land Management, Coos Bay District from 1978-1980. He received

Scott Sundberg, Oregon Flora Project Director. Photograph by D. Wolverton, courtesy of *The Oregon Stater*.



OREGON PLANT ATLAS ON-LINE

The Oregon Flora Project announces the launching of the Oregon Plant Atlas, the first comprehensive on-line mapping tool for Oregon plants. Over 385,000 data points representing 4,337 taxa are derived from the Atlas specimen and observation databases, and virtually all information associated with each data point is accessible to the user by clicking on the dots. Information is continuously updated through the efforts of avid field workers and Oregon Flora Project staff. The Oregon Plant Atlas can be accessed through the Oregon Flora Project website at www.oregonflora.org. The Atlas is partially funded by National Science Foundation grant BRC-0237459, and by donations from individuals and plant-oriented societies including the Native Plant Society of Oregon.

his PhD in botany in 1986 from the University of Texas at Austin, where he studied the taxonomy of plants within the Compositae. After post-doctoral studies in Ohio and several years of research and botanical consulting in Seattle, Scott returned to Oregon to oversee the integration of the University of Oregon and the Oregon State University Herbaria.

In 1994, Scott initiated the Oregon Flora Project, with the goal of writing a new flora of Oregon. He served as director for that project until his death, supervising over 60 students, several professional employees, and directing over 230 volunteers. Along with a new flora he envisioned the establishment of the Oregon Plant Atlas, the Oregon Vascular Plant Checklist, the Oregon Flora Photo Gallery, and the *Oregon Flora Newsletter*.

Scott's 29 scientific publications include taxonomic papers (descriptions of new species, nomenclatural changes, and new classifications), laboratory-based investigations in plant systematics, and treatments for checklists, field guides, and floras. The majority of his publications concern the composite family. In addition, Scott has con-



Scott Sundberg in September 2004. Photograph by M. Sundberg.

tributed numerous articles to the *Oregon Flora Newsletter* (www.oregonflora.org). A complete list of his scientific publications will appear in that publication.

Memorial gifts in Scott's honor can be made to NPSO—Oregon Flora Project, and mailed to P.O. Box 402, Corvallis, OR 97339.

Aaron Liston, Department of Botany & Plant Pathology, Oregon State University, 2082 Cordley Hall, Corvallis, OR 97331.

BOOK REVIEW

Plants and Landscapes for Summer Dry Climates of the San Francisco Bay Region. 2004, East Bay Municipal Utility District, Oakland, CA. 336 pages, soft cover, \$34.95.

Once again the East Bay Municipal Utility District (EBMUD) has produced a wonderful reference guide to selecting plants suited to the Mediterranean climate of the San Francisco Bay Area. The book is a design achievement and is supported by vivid photographs of the plants selected. Non-native plants do dominate the book, but when one must select plants from local nurseries, having this book on the shelf is a requirement. In fact, the purist could easily create a garden

by restricting their choices to the 124 natives listed which comprise trees, shrubs, grasses, perennials, annuals, biennials, ferns, and vines.

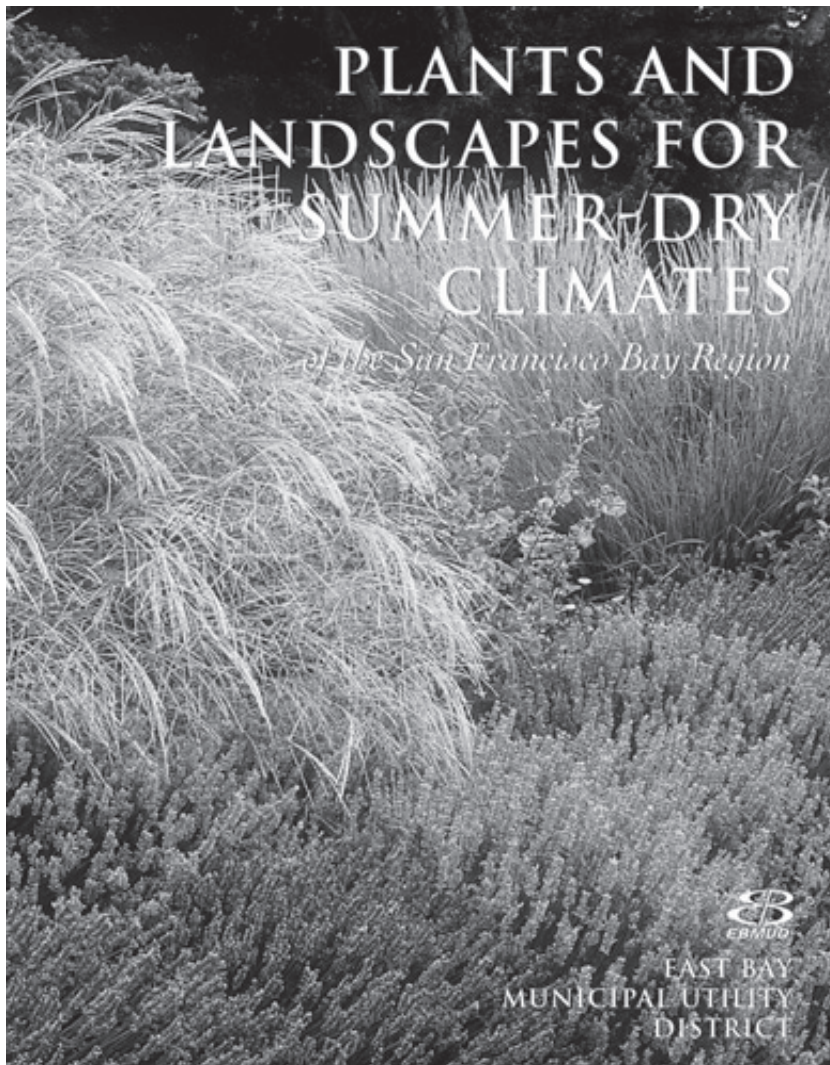
This gardening reference is also a sound primer for the general reader on local plant communities, characteristics of drought tolerant plants, weather and climate unique to the Bay Area, general design principles, and water conservation. Several pages are devoted to healthy soils, a topic often overlooked in other similar books. Borrowing a feature found in the *Sunset Western Garden Book*, special sections detail plant choices for attracting birds and butterflies (but overlooks much needed pollinators,

reptiles, and amphibians), clay soil-tolerant plants, plants for ground covers, tree selections in three sizes to meet individual circumstances, and choices for hedges, screens, wind-breaks, dry shade, and hot exposed locations.

Individual plant descriptions are well written in a comfortable, flowing style, include cultivars available in the trade, and give horticultural tips when appropriate. EBMUD's entry into the horticultural landscape realm began in 1986 when they published *Water Conserving Plants and Landscapes for the Bay Area*. A popular favorite, this publication was designed more as a ready reference guide and featured the plants together with all their cultural requirements. The latest book requires the reader to flip back and forth between the plant catalogue and the cultural requirements found in the section "Plants At A Glance." This change in format is cumbersome and at times annoying, but the diligent gardener will persevere. (Let's hope the binding holds out.)

This latest book also lacks the irrigation principles found in its predecessor, an omission I found surprising in an agency that provides water to 1.3 million customers. However, their attention to California natives as recommended plants is noteworthy. Overall, natives comprise 36% of their listings compared to only 17% in their first publication. Of particular interest is the broad list of references that highlight California native plants, local gardening, and regional natural history. Even though the number of plants featured in this publication is similar to its predecessor, the book tops out at a whopping four pounds, four times heavier than the original. There are over 345 specific plant entries with 520 color photographs, making this a book that can serve as a fine guide to appropriate plant selection for the San Francisco Bay Area, as well as a beautiful visual reference to many native plants growing throughout our region.

Mike Koslosky
East Bay Chapter





Please Join Today!

CNPS member gifts allows us to promote and protect California's native plants and their habitats. Gifts are tax-deductible minus the \$12 of the total gift which goes toward publication of *Fremontia* and the CNPS Bulletin.

- | | | | |
|--|--|--|--|
| ☐ \$20 Limited Income | ☐ \$35 Individual | ☐ \$45 Family/International | ☐ \$75 Supporting |
| ☐ \$100 Plant Lover | ☐ \$250 Patron | ☐ \$500 Benefactor | ☐ \$1,000 Mariposa Lily |

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____

- | | |
|--|---|
| ☐ Enclosed is a check made payable to CNPS | Membership Gift: _____ |
| ☐ Charge my gift to ☐ Mastercard ☐ Visa | Added donation of: _____ |
| Card Number _____ | TOTAL ENCLOSED: _____ |
| Exp. date _____ | |
| Signature _____ | ☐ Enclosed is a matching gift form provided by my employer |
| Phone _____ | ☐ I would like information on planned giving |
| Email _____ | |

Please make your check payable to "CNPS" and send to: California Native Plant Society, 2707 K Street, Suite 1, Sacramento, CA 95816-5113. Phone (916) 447-2677; fax (916) 447-2727; www.cnps.org.

MATERIALS FOR PUBLICATION

Members and others are invited to submit material for publication in *Fremontia*. Instructions for contributors can be found on the CNPS website, www.cnps.org, or can be requested from *Fremontia* Editor, Linda Ann Vorobik, vorobik@rockisland.com, or c/o University and Jepson Herbaria, 1001 Valley Life Sciences Bldg. #2465, University of California, Berkeley, CA 94720-2465.

FREMONTIA EDITORIAL ADVISORY BOARD

Susan D'Alcamo, Ellen Dean, Kathleen Dickey, Phyllis M. Faber, Holly Forbes, Pam Muick, Bart O'Brien, John Sawyer, Jim Shevock, Teresa Sholars, Nevin Smith, Dieter Wilken, John Willoughby, Carol W. Witham, Darrell Wright

www.VorobikBotanicalArt.com*

quality botanical art at affordable prices

Originals, prints, and cards for chocolate lily, butterfly tulips, camas, maidenhair fern, other California native plants, and more.

New this month: Western sword fern 16 by 20 inch prints (edition 200) on Arches watercolor paper.

**My apologies to those who had tried to visit the site before and were denied access; the site has been updated and improved. Please try again! Thank you, Linda*



Western Sword Fern (*Polystichum munitum*). Pen & Ink with Watercolor.

PAID ADVERTISEMENT

FROM THE EDITOR

Welcome to the third of four installments of the celebration of the California Native Plant Society's 40th year. This issue's article on the Society's Chapters includes those from the middle-north section of state, west from the Bay Area east to and over the Sierra. Once again I am amazed by the varied activities and conservation work of the chapters. Can I be a member of every chapter? After reading about each of them, I want to!

In line with the 40th celebration theme for this year's *Fremontia* there are two articles on state programs. David Chipping, author of the Conservation Program article, has provided us with much more than his two

cents worth for his final days as director of this program, with his thoughtful overview, cover image, and thought-provoking editorial. The next article summarizing the Vegetation Program follows naturally in that many conservation goals are answered by the work of the Program. Consider this article, written by Todd Keeler-Wolf, director, and Julie Evens, senior vegetation ecologist, as the introduction to a special issue on California vegetation, slated for the January 2006 issue of *Fremontia*.

Greg Wahlert and Phil Van Solen remind us of why California is botanically such a fascinating state: they write of two rare manzanitas from Sonoma County, where there are no less than

18 county endemics, including four species of manzanitas. This issue ends with a farewell to Scott Sundberg, who passed away in 2004. Scott was a sunflower family specialist, author of the coyote brush treatment for *The Jepson Manual*, and at the time of his death, working towards the production of a new flora of Oregon.

A final note: keep a lookout for a new editor for *Fremontia*. My tenure as editor ends with the October 2005 issue, and I hope to help find someone for this position who will enjoy as much as I have this great society of botanists, conservationists, and those appreciative of flowers.

Linda Ann Vorobik
Fremontia Editor

CONTRIBUTORS

David Chipping is the director of the California Native Plant Society (CNPS) Conservation Program, but will be stepping aside this year.

Julie M. Evens is the senior vegetation ecologist for CNPS. She has directed projects and workshops to identify and define plant communities in the state from the Mojave Desert and Sierra Nevada west to the Coast.

Todd Keeler-Wolf is the senior vegetation ecologist with the California Department of Fish and Game. He has actively promoted the classification of vegetation in the state through vegetation sampling and mapping projects.

Aaron Liston is the director of the Herbarium at Oregon State University, Corvallis.

Phil Van Soelen is co-owner of California Flora Nursery in Fulton, Sonoma County, a past president of the CNPS Milo Baker Chapter, and for many years was the manager of the Vine Hill Preserve. His article on Vine Hill Manzanita appeared in the January 2004 issue of *Pacific Horticulture*.

Greg Wahlert is currently finishing a molecular phylogeny of *Arctostaphylos* for his master's degree at San Francisco State University. He has served as CNPS Milo Baker Chapter's preserve steward at Southridge in Santa Rosa for the last 15 years.



California Native Plant Society
2707 K Street, Suite 1
Sacramento, CA 95816-5113
Address Service Requested

Nonprofit Org.
U.S. Postage
PAID
Oakland, CA
Permit # 3729