March 2013

CALIFORNIA NATIVE PLANT SOCIETY

San Diego Chapter Newsletter

CHAPTER MEETING

Tuesday, March 19; 7 p.m.
Room 104, Casa del Prado
Balboa Park

The California Native Landscape – an Introduction to the New Book

by Greg Rubin and Lucy Warren

Whereas most native books have emphasized plant selection, this work is unique in its emphasis on native horticulture and design. In addition, this book emphasizes a Southern California perspective, with all its challenges. Success in our drier climate should translate well to the more moderate conditions north of us. Subjects include soil biology, design techniques, garden styles, landscape installation, irrigation, maintenance, pests and diseases, and fire risk reduction. Be prepared to throw everything you were ever taught about ornamental horticulture out the window. Book signing will follow presentation.

Greg has been working as a design/build native landscape contractor for over 19 years in southern California, with more than 600 installations to date. His work has been featured in many publications and media outlets. Lucy Warren is a Master Gardener and well known regional gardening professional/author involved with many horticultural organizations and events. She was past editor of *California Garden* magazine.

6:30 p.m. Natives for Novices: Clayton Tschudy - Wildflowers in the Garden.
7:00 p.m. – refreshments, book browsing, socializing.
7:30 p.m. – presentation.

Chapter meetings are free and open to the public. They are held in the Casa del Prado, just west of the San Diego Natural History Museum in Balboa Park.

SPRING PLANT SALE

The spring plant sale and membership day will be held at **Tree of Life Nursery on Saturday, March 16, 2013, from 9:00 am to 4:00 pm.** The nursery is located at 33201 Ortega Highway, 92675, 7 miles east of San Juan Capistrano on the Ortega Highway (Highway 74).

Tree of Life Nursery is situated in a grove of large trees and specializes in growing California native plants. Areas on the nursery grounds are landscaped with native plants, allowing visitors to experience an environment that preserves the look and feel of a native landscape. The nursery has a large selection of plants in several sizes. Bring your friends and introduce them to the beauty of native plants while they learn about CNPS. CNPS members from the San Diego and Orange County chapters will be available to help people choose plants and provide free native plant gardening and landscaping advice.

CNPS speakers for the day include:
Connie Beck: Natives for Wildlife, a discussion of native plants that attract wildlife, including birds, butterflies, bats, and bees.
Amy Huie: Plants for Shady Areas.
Rob Moore: Accent plants.
Greg Rubin: *The California Native Landscape: The Homeowner's Design Guide to Restoring Its Beauty and Balance*, coauthored with Lucy Warren.

CNPS members receive a 10% discount to celebrate membership day. Join or renew your membership the day of the sale.

For more information, contact Tree of Life Nursery at www.californianativeplants.com or 949-728-0685, or the CNPS San Diego chapter at www.cnpssd.org.

ADVANCED PLANT LOVERS' FIELD TRIPS

March 3, Sunday, 1:00-3:00 p.m.; Tecolote Canyon Coastal Sage and Succulents; Jim Roberts, leader.
CNPS member Jim Roberts, who has been studying the flora of Tecolote Canyon for years, will help inform a walk on the wild side of Tecolote Canyon. A trail on the south-facing slopes of Tecolote Canyon will allow us to see annuals, perennials, sun-loving shrubs, cacti and succulents, which start to flower when rains soak the soil and the days lengthen.

Meet at the trailhead on the north side of Tecolote Creek, at the corner of Gardena Ave and Cross St (Thomas Guide 1268 G2). We will take the trail system that leads across the small alluvial plain and then up the steep south-facing slope of the park below September Street. After we return to the trailhead we will walk to another trailhead at the end of Goldsboro Street, and will follow a small trail to a lovely array of native cacti.

The route is less than a mile but includes some steep hill climbs.

March 10, Sunday, 9:00 a.m. – 1:30 p.m.: Torrey Highlands and Crest Canyon; Fred Roberts, Leader.
These two nature preserves in the Del Mar area protect relict populations of the flora that used to carpet the coastal hills and valleys of San Diego County. Torrey Highlands Preserve is located adjacent to McGonigle Canyon and is linked by trails to other natural preserves near SR-56 east of Del Mar. Our second destination, Crest Canyon, divides coastal Del Mar, south of the San Dieguito River estuary. **Fred Roberts**, the San Diego Chapter's Rare Plant Botanist, will share his knowledge of the common and unusual species that we will find on this field trip to these two botanical treasure houses.

Meet at Westview High School on Wolverine Way, off of Camino Del Sur (Thomas Guide 1189 B3). We will caravan to the trailhead that Fred has chosen to access Torrey Highlands Preserve. After exploring this preserve for a couple of hours, we will return to our cars and caravan west a couple of miles to the trailhead for Crest Canyon, where we will enjoy our picnic lunches (bring your own), and then spend an hour or so in Crest Canyon.

The route of two-plus miles in the morning and one-plus in the afternoon will include some hill climbing. Bring lunch.

March 24, Sunday, 9:00 a.m. - noon: Native and Exotic Plants of Wrights Field, Alpine. No Leader (yet!). Wright's Field was dedicated to conserve the native flora and fauna of this mid-elevation native oak savannah around twenty years ago when adjacent property was developed. This 230-acre site is treasured by Alpine residents as a respite from the noise and bustle of suburban life. It is a haven for the wildlife that relies on this remaining natural plant community to provide for all its needs. We will help each other observe and learn the plants that we encounter, and expect to discover why Wright's Field is so well-loved. We expect to see exotic species as well as native species, and will challenge ourselves to identify the grasses, among other herbaceous plants.

Meet along Tavern Road in front of or near MacQueen Middle School (Thomas Guide 1254 A1). We will walk along the school's northside fence about 1/4 mile to a spot that opens onto Wright's Field Preserve. The walk will be easy and relaxed. After the walk you are welcome to join those of us who plan on buying lunch somewhere in Alpine.

General guidelines for field trips: Wear good hiking shoes with tread that can provide stability on steep trails, long pants to protect from scratches, a notebook, sun protection, and bring water. A plant list will be provided to the first twenty participants to arrive; we will share copies if more attend, and arrange for lists to be sent by email later. Questions? Contact Kay at fieldtrips@cnpssd.org

PLANT WALKS FOR EVERYONE

March offers some exciting opportunities to learn some of the more common coastal plants. Wonderful introductions to the native flora of San Diego, these hikes are intended for nonmembers, but CNPS members are welcome as well

March 9, **Saturday, 10:00 a.m. - noon. Black Mountain**. **Michael Murphy** and **Adrienne Heinzelman** lead. Meet at the Black Mountain Open Space parking lot for the Miner's Ridge trail. Exit Highway 56 at Black Mountain Road and go north. Turn right (east) on Carmel Valley Road and continue ¾ mile to the park entrance on the right. (The entrance road is paved. If you're on a dirt road, return to Carmel Valley Road and use the next entrance to the east.) Rancho Penasquitos. Thomas Guide 1169 E6. 858-663-1497.

March 30, 9:00 - 11:00 a.m. San Diego National Wildlife Refuge. Paul Hormick and **Lisa Cox** lead. Go east on SR-94. SR-94 east eventually turns into a road that leads you into the Rancho San Diego area. Continue straight past the big shopping centers (you will now be on Hwy 54, or

Jamacha Rd.). Turn right onto Willow Glen Drive. Make the first right onto Steele Cyn. Road. Make the second right onto Par 4 Drive. Drive to the end of the road and park in the residential area; be careful not to block anyone's driveway. The trailhead is up on the left side; the Cottonwood Golf course is on the right. Jamacha. Thomas Guide 1272 C6. 619-297-2957.

TECOLOTE CANYON NATURAL PARK

March 3; 9 a.m. to noon.
A relaxed opportunity to learn plant lore of this coastal natural reserve from a CNPS member. Meet at the Tecolote Nature Center. Wear sun protection and comfortable walking shoes, bring water. Rain at 8 a.m. cancels the walk Directions: exit I-5 at Seaworld/Tecolote exit. Go east (away from Mission Bay) on Tecolote, past the ball fields, along the driveway to the very end. Free and open to the public, and parking is also free. The walk is repeated the first Sunday of each month.

CONSERVATION
The Irresponsibility Complex

I'll admit I have a fondness for conspiracy theories. It's not that I particularly believe any them, but they can be entertaining in small doses. Sometimes I like to speculate whether some of the things we see on the conservation committee are evidence of a conspiracy, or just bad copies of bad ideas. Suboptimal memetic mutants, if you will. I'll leave it for you to decide.

Two things inspired this thinking. By the time you read this, CNPS will have commented extensively on the execrable Vegetation Treatment Program EIR, with various fireworks and alarms certain to follow. I talked about it last month, and indeed I've been dealing with it, on and off, since December. The basic idea of the VTP is to protect California vegetation from fire by burning, herbiciding, bulldozing, and otherwise mutilating over 100,000 acres of wildlands into the indefinite future. They state they can't follow state Air and Water Quality laws in doing so, because that would limit how much land they could clear, so they're mostly ignoring those laws, while shamelessly calling the VTP the "Environmentally Superior Alternative." I should point out that maximizing cleared acres is not one of the goals of the VTP, and their cavalier dismissal of anything that gets in the way of defoliation gives one an idea of how they intend to treat California's native plants and plant communities.

There's something similar at work up on Cuyamaca State Park, as many of you know. State Parks has used the flimsy excuse of an emergency CEQA exemption from the last fires up there to bulldoze 1800 acres. Their theory is that the "brush" (aka nitrogen-fixing ceanothus) is keeping the trees from growing, and anyway, they got some money from someone (possibly Disney or Pepsi) to sequester carbon in trees as a carbon offset. So they're going to plant lots and lots of trees, after getting rid of the brush and making sure that all the carbon currently in the shrubs goes back into the sky. Never mind that they're having trouble getting pine seedlings to survive in the moonscape they are creating. Never mind that the ceanothus may be the best nurse plants to protect the conifers while establish their roots. Never mind how much carbon the Ceanothus will sequester in the soil as part of nitrogen fixation.

A few decades ago during the Yellowstone fires, there was this pained national sigh as America's most famous national park burned, a lament that we'll never again see them in our lifetime, and then a lot of really cool science (some of which made it to TV) about how Yellowstone recovered after the fires, all the neat new things people were seeing. In the 1980s and 90s, it was cool and interesting, practical even, to let nature to take its course. Now, in the postmodern, post-recession 2010s, science doesn't matter. All that matters, apparently, is that someone thinks people in San Diego must have their pine trees, and that, as in the 1920s, some managers believe they can bring those pines back faster by paying someone to tinker with things.

Yeah... Well, it takes a 100 years to grow a century-old tree. The best you can do is to make sure your future forest monarchs don't die as seedlings, so that they can eventually shade out the ceanothus. On Cuyamaca they don't seem to have figured this out.

But it makes me wonder. Why throw large amounts of money at bulldozing and other forms of mechanized maceration? Why forcibly ignore the science? For that matter, why should managers ignore laws like CEQA that ask them to be responsible? Aren't managers supposed to be responsible in the first place?

This is where I wonder about XXX-industrial complexes. We're all familiar with the Military-Industrial Complex, and many of us know of the Prison-Industrial Complex. It's a great idea: in the name of security from some grave threat, industry and bureaucracy hook up in a mutually beneficial relationship. The government pays, the industry grows, some basic level of service is provided to keep the scheme rolling, and all the people hurt by it are swept under the rug in the name of keeping "the public" safe and happy.

Since we've got the biggest military and biggest prisons in the world, it's a seductive meme for copycats. I wonder if we're seeing people trying to set up similar things: the Fire-Industrial Complex, or perhaps the Sequestration-Industrial Complex. While on the surface these may seem like good ideas—who doesn't want huge anti-fire projects and huge carbon sequestration projects?—in practice they're little short of disaster. We can't really afford the military or prisons we have now, and the fact that these wannabe complexes avoid science, monitoring, and transparency suggest that they're really looking for eternal welfare for bulldozers, not that they're concerned with actually accomplishing anything beyond a basic, inefficient, level of protection. Think TSA, not Special Forces.

While calling them the –Irresponsibility Complexes is snarky at best, it is apt. Say what you will about the Military-Industrial Complex, they use science, and they do care very much about achieving their primary results. They study many things, occasionally even collateral damage. The schemes that State Parks and the Board of Forestry (among others) are proposing don't even bother to monitor their results to see if their goals are met. They're effectively money pits, and that's what's so sad about them.

Is this a conspiracy by a few wealthy industrialists? Possibly, but it doesn't really matter. Public-industrial complexes are simply the wrong meme for dealing with fire or global warming. There are better models out there, ones that involve local groups, boring, non-mechanized stuff like public planning, and that currently detested adjective, responsible managers and landowners. It's terribly old-fashioned, but the best way to protect some land is for people to actually care about it enough to learn what it needs and take care of it. Profits and careerism too often get in the way.

~ Frank Landis, Conservation Chair

RARE PLANTS

Robinson's Peppergrass, A Rare Plant Refugee?

With the publication of the 2nd edition of the Jepson Manual, a number of formally recognized plants seemingly have vanished from the flora. One such plant is Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*).

Not many of you have probably seen or perhaps even heard of Robinson's peppergrass. It is a mostly low, delicate, white-flowered member of the mustard family (Brassicaceae). Or at least *was*. According to Ishan A. Al-Shehbaz, the author of peppergrasses (*Lepidium*) in the Jepson Manual, Robinson's peppergrass is no more. He states "Generally divided into many varieties based on poorly defined, inconsistent characters." And unceremoniously, Al-Shehbaz lumps *L.v.* var. *robinsonii* into an expanded concept of *L. virginicum* subsp. *menzeisii*, which occurs virtually all over western North America. Traditionally, *L.v.* var. *menzeisii* was restricted to the beaches of British Columbia and Washington.

A more in depth discussion is presented in the Flora North America vol. 7, which the Jepson Manual follows, penned by, you probably guessed it – Al-Shehbaz. FNA states "As for var. *robinsonii*, it is based solely on being shorter plants with or without divided leaves. We believe that delimitation is artificial; such plants occur sporadically in the ranges of the two groups above." The authors also describe the pedicels (the stalk between the stem and the flower) in the newly organized *L.v.* subsp. *menzeisii* as flattened.

The story might end then and there but for one detail. Robinson's peppergrass is treated as California Rare Plant Rank (previously CNPS) 1B.2 plant. Rank 1B plants trigger survey requirements and mitigation for impacts. According to the online Inventory, 134 occurrences have been reported from San Diego County north to Santa Barbara County and a number of the Channel Islands. Many are based on old herbarium specimens. It is reported to occur from sea level to 885 meters (2,885 feet) in coastal sage scrub and chaparral. It especially favors hot and dry, somewhat open coastal sage scrub covered slopes in San Diego and Riverside Counties, where it is often in clayish soils.

Robinson's peppergrass has always been a bit of an enigma. If you have worked as a botanist in the consulting industry, almost certainly there was a point in your career where you saw this name and wondered if you would have any idea of what it was if you saw it. There are few rare plants with such a lack of familiarity. I have reviewed EIR after EIR where the name is mentioned religiously followed by "not observed on site". And yet, it is not really all that scarce compared to many sensitive species, especially in San Diego County, and likely did occur within some of these project footprints.

There are a few things working against Robinson's peppergrass. Peppergrasses as a whole are not especially showy, most species are low, which means they draw less interest. Peppergrasses can be confusing as identifying characters are often not clearly described. It is an annual. During subpar years, it often does not germinate, or germinates in low numbers and is easily overlooked. It is best sought in February through early April, a bit early as compared to other rare plants. Once it dries out and is in poor condition, it can be impossible

to separate from other peppergrasses without a lot of effort.

As it happened, I had the opportunity to become familiar with Robinson's peppergrass conducting surveys for the San Diego Multiple Species Conservation Program many years ago. Ever since then it has been a goal of mine to teach people how to identify it. I have grown very comfortable with the characters and believe they are consistent. The primary characters for identification are 1) mostly erect (young plants less so), often delicate annual, 2) pinnately lobed to dissected basal leaves, 3) stem leaves are pinnately divided to deeply lobed, and 4) slender, hairy pedicels which are *rounded or slightly flattened in cross-section*. The Type specimen is housed at the California Academy of Sciences in San Francisco and was collected by M.E. Jones (#3050) in San Diego on March 10, 1882 and it is a good match.

So back to the Jepson Manual and FNA. Al-Shehbah describes the characters of leaf as inconsistent. However, leaf form is one of the primary characters that Andy Sanders (UCR) and I use to separate this variety from others, at least in San Bernardino, Orange, Riverside, and San Diego County, in part because, *it is consistent*. I cannot say that this is the case in Los Angeles County or other parts of the American west. According to Dave Bramlet (my co-Rare Plant Chair in Orange County), the situation may not be as straight forward there but here there is geographic corrulation. If you look at *L.v.* var. *pubescens* and *L.v.* var. *virginicum*, the leaf shape is very different, especially on the stem, where the leaves are not pinnately lobed or deeply divided. These plants also are more robust (*P.v.* var. *pubescens* is described as "sturdy" in Rollins (1993)) and have larger flowers. A good example of *L.v.* var. *virginicum* looks as if it should be a different species entirely. *L.v.* var. *pubescens* and *L.v.* var. *virginicum* are more typically found at higher elevations. *Lepidium v.* var. *virginicum*, which is essentially a weed here, is a bit more random but still tends to be inland and at higher elevations. There are some specimens, especially in foothill and mountain areas where characters do blend between taxa, but these are varieties after all and integradation where forms are in contact is expected.

According to Al-Shehbah, our plants all belong to subsp. *menziesii*, which is described in FNA as having "fruiting pedicels *flattened* (or at least proximal [near to] to apex)". This is an especially interesting character. In our plants a rounded pedicel is the first character I teach people to look for. Using the new keys, you are likely to end up with *L.v.* subsp. *virginicum* in coastal San Diego County even though you were supposed to end up with *L.v.* subsp. *menzeisii*. For me, that is an immediate red flag.

The new treatment may simplify *L. virginicum* at the continental level but it does not reflect what we see on the ground in southern California. Considering Robinson's peppergrass has conservation status, I would stay with the old treatment. Ultimately, the fate of Robinson's peppergrass as a conservation concern lies with the Rare Plant Forum and its CNPS and agency moderators.

In one respect, we have suggested change. Many familiar with Robinson's peppergrass believe it is a valid taxon, but also believe that it is perhaps too common for its 1B rank. A rank of 4.2 is probably more appropriate. However, here is where the poorly known plant element comes back into the picture. Of the 134 southern California occurrences, only a dozen have habitat quality rankings and only eight are considered excellent or good. With so few rankings, especially with only eight at excellent or good, there is resistance to reduce the taxon from 1B to 4. Ideally, 122 occurrences need a field visit. Volunteers?

~ **Fred Roberts**, Rare Plant Botanist

BOARD MEETING

Wednesday, February 6, 6:30 - 8:30 p.m., monthly CNPS San Diego Chapter board meeting, 4010 Morena Blvd, Suite 100, San Diego (Thomas Members are welcome to attend as observers. If you want to discuss an issue, please ask to get on the genda by sending an email to president@cnpssd.org.

NATIVE GARDENING

Gardening Committee

The Gardening Committee continues to meet monthly-February's meeting was at the home of Sue Marchetti. The committee is focused on a couple of key projects: one is the upcoming publication of Greg Rubin and Lucy Warren's new book, *The California Native Landscape: The Homeowner's Design Guide to Restoring Its Beauty and Balance*. We will have copies and a talk by Greg at the chapter meeting in March (see p. 1). Additionally, we will have a Gardening Committee book party for Greg in April. The date and details will be announced. So, plan on helping us to celebrate this new gardening book that has a distinctly Southern California flavor.

Additionally, Dave Flietner and Clayton Tschudy are working on the Demonstration Garden project - as soon as we get preliminary approvals to move forward, we'll publish more details. Next month, we will start to look for funding and volunteers to help. Please join us if you are interested in helping with a high-concept design native garden here in San Diego.

We are also continuing the Natives for Novices talks - the monthly half-hour sessions that precede the chapter meetings. These seem to be well-received. Future topics will probably include "gardening for butterflies," Jake Sibley's gardening experience in North Park, Will Johnson helping us with Irrigation Maintenance issues, and others. Please let Sue Marchetti know if you have ideas for, or can volunteer to talk at, "Natives for Novices" - send an email to gardening@cnpssd.org.

Please join us for our next meeting on March 13 at 6 p.m. at the home of Will Johnson, 7983 San Carlos Drive, San Diego, CA 92119. His home is three-quarters of a mile west of SR-125 and one block south of Navajo.

~ **Susan Krzywicki**, Native Gardening Chair

Work Parties

Old Town Native Plant Landscape Work Party, Saturday, March 9, 1:00 to 3:00 p.m.

Can You Identify That Native Plant Seedling?

The Old Town landscape should be sprouting a lot of native seedlings from all the seed we have broadcast, if the rains cooperate. Whatever has come up, we will coach the work party participants on how to gently liberate these little native seedlings from adjacent exotic weeds that could overwhelm them. Another project in March will be to keep the vigorous colony of chaparral mallow within bounds by judicious spading.

We will also find and transplant/spread some sturdy little gumplants and blue-eyed grass, and pot up some coast live oak seedlings that are among the first babies from the oaks that we planted five years ago. These potted small oaks will be offered for sale at an elderberry pancake fund raiser we are planning for early summer in the native plant landscape.

This small park of California native plants includes many of the plants that were used by the Native Americans who lived in this region before contact with Europeans. In years to come, these plants will provide materials for workshops on edible food harvesting and basketry.

The landscape is located at the northwest corner of Old Town State Park, at the corner of Taylor and Congress Streets. If you come by bus, trolley, or train, just cross at the corner and follow the path to where we will be gathering near the Sycamore Trees. If you drive, you can park in the lot at Taylor and Calhoun, or park in the CalTrans parking lot across Taylor Street - cross at the Juan Street traffic light and walk a couple hundred feet south along Taylor Street to join us.

Wear sun protection and bring gloves and weeding tools if you have them. If not, we have some to share. Bring bottled water if you prefer that to the drinking fountain. If it rains, some of us will come anyway, wearing good raingear, and you will be welcome. Restrooms are nearby. Questions? contact Kay at fieldtrips@cnpssd.org .

Point Loma Native Plant Garden: March 2 and 17, 9:00 – noon. Rain cancels; bring water; no facilities; tools/supplies provided. Usually the first Saturday & third Sunday of each month. Contact Richard@sandiegoriver.org for more info.

Local Water Districts Invite Customers to

Showcase Water-Wise Landscapes California–Friendly® Landscape Contest

Entries due April 5

One of the most effective ways to make a sustainable future in San Diego a reality is by creating a landscape that is water efficient. After all, as much as 50 percent of a residential homeowner's water use is for irrigation. Now comes the perfect opportunity for those who have already made the move from grass to California-Friendly® plants to showcase such water-wise and imaginative endeavors. Several local water districts invite customers to enter their landscapes in the *Water Agency California–Friendly® Landscape Contest*. One winner will be chosen from each district and will receive a $250 gift certificate and recognition on the agency websites and in newsletters.

JoEllen Jacoby, Supervising Landscape Conservation Designer for the City's Water Conservation Program, offers a few suggestions to enhance the chances of having a winning landscape. "The judges need to see the big picture and the details. Provide pictures that show both the landscape and some or the entire house to give a sense of proportion and scale. Look before you shoot! Are there trash cans in the sight line? Are tools, weeds or nursery pots visible? Be careful to angle your shots to avoid the neighbor's parked car or other less than inspiring elements that you have no control over."

"Focus on special design 'vignettes' such as a little sitting area, streambed or sculpture," continued Jacoby. "Does your landscape frame your door from the street? Be sure to show that in a picture. Finally, include close-ups of plant combinations that show the color, texture and variety of your plant palette. Remember to eliminate weeds and make sure your

landscape has a mulch cover over any open soil. These pointers will make your front yard picture perfect and make you proud."

The deadline to enter is April 5, 2013. Each water-wise landscape entry will be judged for overall attractiveness, appropriate plant selection, design, appropriate maintenance, and efficient methods of irrigation. This contest is open to customers of the city of San Diego, California American Water, Helix Water District, Olivenhain Municipal Water District, Otay Water District, Padre Dam Municipal Water District, San Dieguito Water District, Sweetwater Authority, Vallecitos Water District and Vista Irrigation District. For official contest rules and an application form, visit: www.landscapecontest.com. For questions, contact Mike Ismail with the City of San Diego at (619) 533-5312 or your local water agency.

For ideas, expert advice, exhibits and classes, visit the Water Conservation Garden, located at 12122 Cuyamaca College Drive West in El Cajon, or go to www.thegarden.org.

The City of San Diego's Water Conservation Program reduces water demand through promoting or providing incentives for the installation of hardware that provides permanent water savings, and by providing services and information to help San Diegans make better decisions about water use. For more information about Water Conservation, visit www.wastenowater.org or call (619) 515-3500. Complementary programs that support wise water use through water reuse include the City's Recycled Water Program and the Water Purification Demonstration Project. For more information on those programs, contact (619) 533-7572 or visit www.sandiego.gov/water/recycled or www.purewatersd.org.

Land of Perpetual shade

Thomas A. Oberbauer

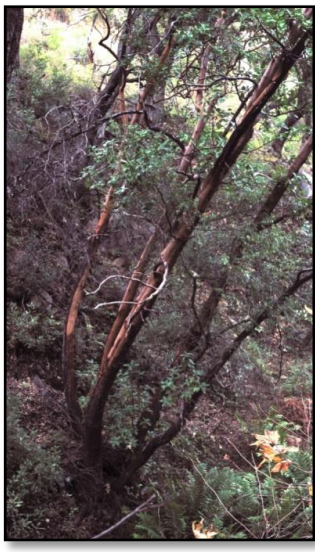
My interest in the Pacific madrone (*Arbutus menziesii*) began in 1973 when I went with my family on a trip to San Francisco, stopping at Big Basin Redwoods State Park and driving through Felton and Los Gatos. I had seen them before but on this trip they really sparked my interest. Pacific madrones, with avocado-like leaves and red smooth bark, are far different than anything I normally saw growing wild in San Diego County and were prevalent in the woodlands and forest. Later, I spent nickels and dimes xeroxing the San Diego State University Library copy of Ethel Bailey Higgins "Annotated Distributional List of the Ferns and Flowering Plants of San Diego County, California" put out by the Natural History Museum in 1949. I was pleasantly surprised to see madrones were known in San Diego County, from Castro Canyon off the side of the Agua Tibia Mountains, Roderick Mountain and reportedly from Pauma Creek. In the mid 1970s, I participated in a seminar class on forest trees in San Diego County taught by Paul Zedler and each of the students picked or was assigned a tree to study. One of our guides was Griffin and Critchfield's Forest Trees of California. In that book, there was a reference to an article by Meyer from 1931 describing the madrones from Roderick Mountain as being on a steep north slope. My tree was sugar pine, but I was very interested in the madrone and offered to help the student who received it. Castro Canyon is a deep gorge in a nearly inaccessible area; Roderick Mountain that had been renamed by USGS to Rodriguez Mountain was also very remote. So we walked down Pauma Creek below Doane Pond on Palomar Mountain as far as we could in one day and did not find it. That is the day that I learned the value of checking one's self for ticks and making sure that there are no holes near the inseam of Levis button-fly jeans.

I reexamined the Meyer article many times and observed Rodriguez Mountain from the north, noticing that a great cliff several hundred feet high topped off the mountain, creating an area that appeared to never have sun. A clear view of the magnitude of the cliff can be obtained from the pull-out on Palomar Mountain's South Grade Road. In 1931, Meyer mentioned that there are "a great many madroños, several hundred in number..." He described the slope below the ledge as follows: "On this slope growing at an altitude of 2,000 to 3,000 feet, are a number of clumps and patches of madroños. The largest of these are found near the base of the rock ledge mentioned, and in the larger ravines of the slope, smaller clumps of smaller trees being scattered in the chaparral. The madroños of this area are all stump sprouts, as far as I have observed: the region has evidently been burned over repeatedly. A number of trees arise from each stump forming rounded clumps, the individual trees of which are slender in form. The trees I saw near at hand ranged from mere saplings to trees about thirty-five feet high, with trunks up to ten inches in diameter at the base; but I was unable to get to the more centrally located groups in which the trees may well be forty to fifty feet high, judging from afar, comparing them with the trees seen near at hand. Indications are that much larger madroños grew here at an earlier time, the size of some of the stumps suggesting a possible diameter of two feet."

I schemed over the years how I could get there to look for madrones. I worked with the Bureau of Land Management (BLM) on parts of the County and thought maybe we could get there by helicopter. I had even hiked to the top of the ridge west of Rodriguez Mountain while doing biological surveys for the County Parks Department. I looked at the

long flume along the San Luis Rey River that went from near Hellhole Canyon Preserve to the slope far below the cliff, contemplating walking the 8 miles each way along it to the base, balancing on the narrow channel, but that would still not get me to the major tree area described in Meyer's article. Additional information on the madrone came up when a new population was discovered near Crosley Saddle on Agua Tibia Mountain (Banks 1999), and a collection mentioned by Meyer of two trees in a canyon near the Nellie Post Office (north end of Bailey Meadow Road) on Palomar Mountain in 1905 was catalogued as existing at the Berkeley herbarium.

I had pretty much given up on the idea of looking for the trees and had not thought about it for a while until the spring of 2012 when drawing a vegetation map for western San Diego County following the CNPS Sawyer Keeler-Wolf method for AECOM, my place of work. We had recent satellite imagery and the Google Earth images were very good. From looking at the images and mapping the vegetation, I identified a potential route on publicly owned County and BLM managed land to get from Hellhole over the saddle west of Rodriguez Mountain and over to the base of the cliff. This was only possible because of the 2003 Paradise Fire and the 2007 Poomacha Fire. Part of the chaparral on the south and north sides of the mountain west of Rodriguez burned in both fires and it was growing in soil derived from black granite or gabbro. Gabbro has high concentrations of magnesium and iron that inhibit some plant growth and provides a less dense vegetation cover. The north-slope below the cliff face burned partially in the Poomacha fire. That fire crept in strips up the side of the deep canyon, spreading as it rose up toward the cliff but mostly below the oak groves. As mentioned, Meyer's article stated that he was only able to collect in the lower part of the canyon near the flume because the vegetation was impenetrable up higher, but he could see entire groves of madrone above where he was forced to stop. With the effect of the fires making the vegetation temporarily less dense, I thought that there may be a window of opportunity to hike to the groves. If one waited a couple of years, I am certain that the area will be impassable on foot.



The Forest Service Silvics Manual (McDonald and Tappeiner 1990) is a good source of information on Pacific madrone and is summarized here. *Arbutus* is a genus of about 14 species including large shrubs and trees from the Mediterranean area, Europe and North America. The European species include the ornamental strawberry tree (*Arbutus unedo*) and *Arbutus canariensis*, endemic to the Canary Islands and associated with

e.

More recent studies have indicated that the European members may be more closely related to the genus *Comarostaphylos* and that Pacific madrone may be one of the older members of the shrubs and trees in their particular branch of the Ericaceae (Heath) family (Hileman et al. 2001). North American *Arbutus* species are centered in the American southwest, Mexico and Central America with the Arizona madrone (*Arbutus arizonica*) growing in the sky island mountains of southeastern Arizona and northern Mexico's Sierras, *Arbutus glandulosa* from central and southern Mexico, *Arbutus tessellata* from Chihuahua southward in Mexico, , *Arbutus xalapensis* from the desert-like conditions of Texas, New Mexico, and Mexico, and *Arbutus peninsularis*, which I have actually seen, endemic to the mountains of the Cape Region of Baja California. It seems interesting that the majority of the relatives are from Mexico with some semi-tropical and even desert connection while *Arbutus menziesii* is an indicator of temperate moist forests all the way to Canada.

Fossils of *Arbutus* with the appearance of *A. menziesii* have been found dating 12-26 million years ago (Chaney 1925) from Nevada. At one time when the climate was more moist- temperate, they were undoubtedly more widespread over the west. Average rainfall of the modern distribution ranges up to 118 inches per season growing in a variety of vegetation communities including Douglas fir-tanoak forest, Douglas fir-hemlock forest, Port Orford cedar, redwood, Ponderosa pine, and a variety of oak forests. Madrones are also important for wildlife because their bumpy textured berries make up a large part of the food source for birds, such as band-tailed pigeons, and deermice. Madrones are thought to live up to 500 years. The largest tree known is ten feet in diameter (298 cm.) and 79 feet (24 meters) tall. The above ground portion of the trees is usually killed by wildfire because of the thin bark, but the trees rapidly resprout from a basal root system. Seed reproduction is not generally abundant except for bare mineral soil and locations such as road cuts.

After putting off the exploration of the Rodriguez Escarpment while the weather cooled down last summer and other events transpired, Jonathan Dunn, Lance Woolley and I embarked on the trip on a cool January morning in 2013. Lance is an ultramarathoner and Jonathan thinks he is part mountain goat. He prefaced the morning with a general question of whether it is more energy efficient to follow switch backs or climb straight up when hiking up a steep mountain since he prefers the latter. We climbed up through chamise (*Adenostoma fasciculatum*), sweet lavender-soap-scented Cleveland sage (*Salvia clevelandii*) and hoaryleaf ceanothus (*Ceanothus crassifolius*), traversing deep ravines and clambering over a large boulder field, finally reaching the saddle between Rodriguez Mountain and the gabbro ridge to the west. The first glimpse of the Rodriguez Mountain cliff up close and the dropping chasm below makes one think twice about going further. It has a National Monument type of grandeur. The cliff is composed of cream colored granodiorite that fades to grey in the

shadows. Sheets of ice adhered to the lower face of the cliff and open areas below it. The rock escarpment is spectacular. We realized it was not going to be a simple task to proceed because we would be clinging to large *Ceanothus* and oak shrubs as we climbed through them along the cliff base. I recalled reading somewhere that California condors and golden eagles were known from the area and likely nested on the cliff face in the past. One can easily visualize them soaring overhead. We saw a couple of small deciduous oaks with a few yellow-orange dentate leaves. They were the oracle oak (*Quercus X morehus*), a hybrid between black oak (*Quercus kelloggii*) and interior live oak (*Quercus wislizenii*). While this hybrid is not recognized in the Jepson Manual, it is a neat deciduous shrub.

We took off along the base of the cliff, grasping on to the shrubs as we went. Once you begin, it is not frightening, just time consuming to concentrate on holding on, swimming, stepping and climbing through the large shrubs and over boulders, taking care not to fall. Some areas had significant exposure where a misstep would be serious. Scanning to the north across the chaparral below, a patch of shrubs appeared to be more of a bright green color and the leaves were clearly larger than those on other nearby shrubs. They were Pacific madrones that were resprouting following the Poomacha Fire. Based on Meyer's description I had naively expected to see a grove of trees and hoped that the madrones were some of the trees missed by the fire, but here they were, large 5-year-old shrubs. They were about 6 to 8 feet tall and regrowing from sizable blackened burls. More than a half dozen were at this location at an elevation of 3,100 feet. With their big, bright, exotic leaves, they looked like a semi-tropical ornamental plant, such as the rubber plant (*Ficus elastica*), rather than a southern California native. A Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*) skeleton was standing in their midst. Plants growing with them were mountain mahogany (*Cercocarpus betuloides*), scrub oak (*Quercus X acutidens*), honeysuckle (*Lonicera subspicata*), hairy ceanothus (*Ceanothus oliganthus*), toyon (Heteromeles arbutifolia), white-flower currant (*Ribes indecorum*) and sugarbush (*Rhus ovata*).

I was taking it all in when a raven flew overhead with its wing beats audible as the feathers cut through the air and a wrentit called. Envision standing at the base of a tree rather than along-side a shrub and imagine a complete grove of trees as Meyer saw in 1931. From the Fire History Map (McKinsey 2004), it appears that this area burned sometime between 1930 and 1939, so they may not have been as large as the trees observed by Meyer but would have been of significant size even prior to the Poomacha Fire.

What is a component of redwood and temperate rainforests doing growing in the midst of chaparral in San Diego County? It is in an area of nearly perpetual shade. During winter, the sun shines in this area probably less than a half an hour a day, though in summer it would be longer. Our presence at this spot coincided with the short period of winter sun that beamed across the tops of the shrubby madrones. If one looks at aerial views of this site, it is rare that the images are visible since the shadow cast by the cliff face is so prolonged. However, while these resprouts are not growing as fast as the three feet a year that they do in northern ranges, they do appear to be growing faster than their chaparral associates and will create a woodland patch before too long. They will need a long time without fire to grow to substantial tree size.

We peered down the canyon far below with binoculars and spotted the unmistakable light green color of the top of a madrone in the midst of a canopy of large coast live oaks (*Quercus agrifolia*). We climbed steeply down and entered a world where deep shade was continuous. The poison oak (*Toxicodendron diversilobum*) was bare clusters of sticks. We passed leafless dogwood (*Cornus nuttallii*) with the characteristic capsule structures on the stems and last year's pink-orange leaves on the ground, still edged with hoarfrost as we dropped deeper and deeper down into the canyon. The air smelled of moist leaves. Raspberry (*Rubus ursinus*) with its red and green leaves became a vegetative cover both tangling one's feet with the serrate-spined sinuous branches and obscuring deep rock holes below. We passed one large madrone with a recently dead trunk still holding leaves, but saw that it had already resprouted a three meter tall replacement. Finally, we came to the tall tree we saw from above at roughly 2,100 feet of elevation, a multi trunked, 40-foot tall individual. It had a pronounced lean to the north. Nearby were a few others including one bending across the stream bottom. A little further downstream, a grove of incense cedar (*Callocedrus decurrans*) grows. Giant chain ferns (*Woodwardia fimbriata*) extended a half a dozen feet up from the narrow stream bed. We could not really get too close to the trees because the stream appeared to be nearly bottomless with very steep, loose banks.

After having dropped a thousand feet into the canyon, we scrambled and stumbled out of the canyon and back up on a ridge, wading through six-foot tall hairy ceanothus and charred rigid stems of resprouting Eastwood manzanita (*Arctostaphylos glandulosa*). Low growing, spearmint-scented thickleaf monardella (*Monardella hypoleuca*) was carefully avoided as we ascended 1,100 feet in a third of a mile, grabbing branches for balance as we climbed. From there, we had a clear view of more trees up the canyon below the escarpment and at least one additional tall tree that had a branched canopy reminiscent of something from a Lost World movie. Of course, I was the slowest. Long skinny legs have a leverage disadvantage while climbing steep slopes. As the sun set, we stepped back down the

other side of the steep ridge into Hellhole Canyon.

We saw dozens of madrone trees. In addition to the patch of resprouting trees we observed up close, there are other patches visible on the north-slope and as mentioned, a number of trees in the canyon. From our brief visit it is difficult to tell if the numbers are as great as Meyer stated. One may wonder if there has been any real reproduction in the last centuries since they resprout so readily and vigorously. Have these individual specimens been growing and resprouting there since the Pleistocene when precipitation levels would have been double their present levels? These trees are living representatives of a prehistoric era when forests were lush and moist and saber toothed cats, ground sloths and dire wolves roamed the area along with California condors, grizzly bears and mountain lions of more recent times. In this location, the rainfall may be roughly 25 inches per season, but the nearly perpetual shade factor no doubt has a great influence on the amount of moisture available for the plants. These trees withstood the hypsithermal period approximately 5,000 years ago when it was warmer and drier than present. Of course, there always is the idea that these trees could be the product of long distance dispersal.

The name of Palomar, the Spanish term for pigeon roost, was applied to what was formerly Smith Mountain to reflect the presence of high numbers of band-tailed pigeons, native birds with, as mentioned, a great fondness for madrone berries. Palomar Mountain is less than 5 miles away from the madrones, as the pigeon flies. However, it is not too likely that these trees would have been dispersed and established farther south to the drier end of their range in this manner. Furthermore, madrones are rare south of San Luis Obispo County so either a pigeon would have had to fly a long way with a seed in its belly or it would have had to fly from one of the more isolated stands of the trees to Rodriguez Mountain to drop a seed. It is more likely that they are remainders from a wetter period. Pacific madrone is not the only species in San Diego County remaining from a prehistoric era, but that will be a topic of future articles. Finally, there have been reports in Wiggins Flora of Baja California that madrones occur in the Sierra Juarez and Sierra de San Pedro Mártir but no one has ever seen or collected them there. This group on the north-slope of Rodriguez Mountain is the farthest south that Pacific madrones are known to occur.

I have been fortunate to have seen the Sistine Chapel, climbed Half Dome, walked on Antarctica, been among the first to visit Islote Toro at Guadalupe Island and now I have seen *Arbutus menziesii* on Rodriguez Mountain in San Diego County. I would like to acknowledge Jonathan Dunn and Lance Woolley for their keen eyesight and route finding capabilities in helping make a success of this mini-expedition. I would like to thank Scott Jones for reconnaissance of parts of the route and Pam Beare who was the student in the Forest Ecology class at San Diego State University who as far as I know has not seen *Arbutus menziesii* in the wild in San Diego County. It only took me 39 years to do so myself.

Tom Oberbauer, with a madrone (*Arbutus mensiesii*).

References

Banks, D. L. 1999. A vascular flora of the Agua Tibia Mountains, southern California. Rancho Santa Ana Botanic Garden Occasional Publications number 4. 108 p.

Ethel Bailey Higgins.1949. Annotated Distributional List of the Ferns and Flowering Plants of San Diego County, California. San Diego Society of Natural History Occasional Papers 8. 174 p

Griffin, J. R. and W. B. Critchfield. 1972. The distribution of forest trees in California. Author: Griffin, James R.; Critchfield, William B. Date: 1972. Source: Res. Paper PSW-RP-82. http://www.treesearch.fs.fed.us/pubs/28747

Hileman, L. C., M. C. Vasey and V. T. Parker. 2001. Phylogeny and Biogeography of the Arbutoideae (Ericaceae): Implications for the Madrean-Tethyan Hypothesis. *Systematic Botany* (2001), 26(1): pp. 131–143

McDonald, P. M. and J. C Tappeiner. *1990. Arbutus menziesii* Pursh Pacific Madrone in Silvics of North America, vol 2. Hardwoods ; Agriculture handbook no. 654. Washington, D.C. : U.S. Dept. of Agriculture, Forest Service. http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/arbutus/menziesii.htm

McKinsey, D. 2004. Fire History of San Diego County. Center for Earth Systems Analysis Research (CESAR). San Diego State University. http://mappery.com/map-of/Fire-History-of-San-Diego-County-Map

Meyer, C. V. 1931. Southward extension of range of *Arbutus menziesii*. Madroño 2: 41-42.

Sørensen, P. D. 1987. *Arbutus tessellata (Ericaceae*).

Madrones in Horticulture

Most would argue that madrones (*Arbutus menziesii*) are the most beautiful broad leaved evergreen tree native to California. However, they have proved to be almost impossible to sustain in San Diego, as most of the mother stock comes from more northerly sections of the state. The species is native all the way up to British Columbia, where it is actually quite common. I have had to settle for a similar effect by using a beautiful but completely non-native *Arbutus* called "Marina". This tree, introduced by the Saratoga Horticultural Foundation, is a hybrid of two European varieties that mimics the look and feel of our native tree while being much easier to use in cultivation. To me, finding a madrone actually indigenous to San Diego is the Holy Grail of native landscaping! We don't have that many evergreen trees to select from, so finding one adapted to our special climactic zone meant that I could finally expand this limited

pallette and expose people down here to its exquisite beauty.

I had heard legends over the years that there were mystical groves located in the county, but had never been able to get anywhere near the supposed sites. Furthermore, I was afraid that if they had existed, as noted in accounts from 75 years ago, the ravages of all too frequent fires might have destroyed any remaining stands. So you can imagine what a delight it was to hear that Tom and his team had discovered an extensive grove of them growing in the Pala area. The thrill was akin to hearing that a literal "lost world" had been found in our own back yard. And from Tom's description, it appears that was exactly what he encountered. A place so difficult to reach and therefore protected from the ravages of humanity that a pre-historic population had been able to persist, even thrive, in such a southerly latitude. And it was with considerable relief that Tom reported that, despite burning in the Poomacha fire, the population was rebounding with vigor. My hopes for the future are that we can propagate this southern version, and within a few years, introduce it to the trade. This is really a spectacular find, a rare event worth celebrating!

~ **Greg Rubin**, Board Member

OTHER ORGANIZATIONS

Anza-Borrego Desert State Park Botany Society. March 11, 10 a.m. at the Anza-Borrego Desert State Park Visitor Center on Palm Canyon Drive in Borrego Springs. San Diego writer-photographer Richard W. Halsey will outline the threat of huge wildfires to California's deserts in a talk to the Botany Society in Borrego Springs. The public is invited; free.

San Elijo Lagoon Ecological Reserve. Events are free and open to the public. Details at www.SanElijo.org.

- March 9, 9:00 – 11:00 a.m. Wildlife Walk.
- March 16, 9:00 a.m. – noon. Coastal Sage Scrub Planting.
- March 23 – 24, 1 – 4 p.m. **Family Discovery Days: Springtime Eggucation.** San Elijo Lagoon Nature Center.
- Guided Nature Walks. Every Saturday 9–11 a.m. San Elijo Lagoon Nature Center.
- Lagoon Platoon Stewardship Training, every Wednesday 9 a.m. – noon. Location varies. Email joel@sanelijo.org to join.

San Diego River Park Foundation

For these river cleanup days, be sure to dress for working outdoors in clothes that can get a little dirty. Wear closed shoes, no sandals or flip-flops allowed for safety reasons. A hat and sunscreen are highly recommended. Foundation will have all tools and supplies. For info call 619.297.7380 or email volunteer@sandiegoriver.org

March 9: River Cleanup at Big Rock Road and Mission Gorge in Santee 9 a.m.-noon. Meet in the field next to the Santee Equestrian center at 7980 Mission Gorge Rd. Groups and families are encouraged to join us. Community service hours verified.

March 23: River Cleanup at Rancho Mission Road 9 a.m.-noon. Meet in the 24-hour Fitness parking lot at 5800 Ward Rd. San Diego, CA 92108 under the trolley stairs.

March 23: Coastal Habitat Restoration Event 9 a.m.-Noon. Volunteers meet in the grassy area just inside the Dog Beach parking lot in Ocean Beach at the western end of Voltaire Ave. For more info call 619.297.7380 or email richard@sandiegoriver.org

Save the Date!
Seaside Native Plant Garden Tour
~ 11th Annual ~
April 21, Sunday, 2 p.m.

Sponsored by the Buena Vista Native Plant Club and the Oceanside Coastal Neighborhood Association. Go to BVAudubon.org or OCNA.info or call the Buena Vista Nature Center at 760-439-2473 for more information.

CNPS-SD Calendar for March 2013

3/2: Point Loma Native Garden Work Party, p.6
3/3: Tecolote Canyon Field Trip, p.2
3/6: **Board Meeting**, p. 4
3/9: Old Town Work Party, p.6
3/9: Plant Walk - Black Mountain, p. 2
3/10: Field Trip - Torrey Highlands & Crest Canyon, p. 2
3/16: **Native Plant Sale**, Tree of Life Nursery, p.1
3/17: Point Loma Native Garden Work Party, p.6
3/19: **Chapter Meeting,** p. 1
3/24: Field Trip - Wrights Field, Alpine, p. 2
3/30: Plant Walk - San Diego National Wildlife Refuge, p.3

Planning ahead for field trips:
4/7: Cedar Creek Gorge via Ant Mountain and McGee Flats (Cindy Buxton)
4/14: Ramona Grasslands or other site, tba
4/28: San Elijo Lagoon (David Varner)
5/5: Crestridge Ecological Preserve
5/12: Cottonwood Creek (Neil Bouscaren)
5/19: McCain Valley (Tim Cass)
Aug./Sept. date tba: Plants of Lake Henshaw & Warner Springs vicinity (Fred Roberts)

The CNPS-SD Newsletter is published 12 times a year. The newsletter is not peer reviewed and any opinions expressed are those of the author identified at the end of each notice or article. The newsletter editor may edit the submittal to improve accuracy, improve readability, shorten articles to fit the space, and reduce the potential for legal challenges against CNPS. If an article, as edited, is not satisfactory to the author, the author can appeal to the board. The author has the final say on whether the article, as edited, is printed in the newsletter. Submissions are due by the 10th of the month preceding the newsletter; that is, March 10 for the April newsletter, etc. Please send submittals to newsletter@cnpssd.org.

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___Student or Limited Income $25; ___Individual $45; ___Family or Library $75
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