



# Edgewood Explorer

PRESERVE • EDUCATE • RESTORE

March 2016

Volume 23 Number 1

## Native Garden at the Education Center

by *Howie Smith*



*Howie Smith smiles over Edgewood's native garden. © 2016 Kathy Korholz*

Ken Himes and Howie Smith, with generous help from other Friends of Edgewood volunteers, have been leading an effort to establish a native garden landscape at the Bill and Jean Lane Education Center (Ed Center). The goals of this project are:

1. To landscape the area adjacent to the Ed Center;
2. To provide a selection of native plants with identifying labels that visitors can observe before starting a hike to see native plants in Edgewood Park and Natural Preserve; and
3. To provide a selection of native plants for visitors who do not have the time and/or the capability to hike the trails in the preserve to enjoy.

In addition, the garden has served as a teaching tool for visiting students wishing to learn about native ecosystems and the possibility of establishing a native garden/ecosystem at their school. A decision was made to source all the material for this native garden from Edgewood Park and Natural Preserve. In order to do this, all of the plants have been started from either seed or cuttings collected in Edgewood. The development of the garden will be an ongoing process, as we are learning how to propagate Edgewood natives as we develop the garden. Some of the native bulbs that we are starting from seed will take five or more years to flower. The San Mateo County Parks staff continues to be very helpful in providing the mulch, as the sheet mulching efforts have

expanded to the island around the parking area, in addition to the timely weed-whacking of non-native grasses and poison oak in the native garden area. We have been very fortunate to have Deanna Schiel, Laurie Alexander, Katherine Wright, and San Mateo County Parks

*(continued on Page 5)*

## Docent Training Program

by *Mary Wilson*

One day last summer, docent Sandy Bernhard joined a Bloomin' Hike and as we walked, she told me that she was interested in the Docent Training Coordinator position. I was so happy to hear that! I've been coordinating the Docent Training since 2006 and had begun to feel that I needed a break. Not a break from the training evenings and Saturday hikes, of course, (those are always fun) but from the organizing that precedes and accompanies annual Docent Training, especially copying and collating the Docent Manuals each year.

Sandy and I agreed that we would be co-coordinators this year and, in 2017, Sandy would be the Docent Training Coordinator on her own. She has so many good ideas that I know Docent Training will be better than ever!

Sandy also had a solution to a major problem that has bothered me every year. It takes a lot of time to copy and collate the Docent Manuals. Sandy formed a committee, as you'll read later in this *Explorer*, and solved the printing and collating problem. The committee also updated the manual contents, producing a very attractive binder.

I really cannot thank Sandy, Deanna Schiel, and Anita Stewart enough for the many, many hours they spent in meetings and at home working on the Docent Manual. They are a formidable and creative group and true friends of Edgewood! Thank you Sandy, Deanna, and Anita!!

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## The Smell of Rain *or*..... Fizzy Raindrops Propel Petrichor Potpourri

by Carolyn J. Strange



Soap Plant (*Chlorogalum pomeridianum* var. *pomeridianum*),  
Edgewood Preserve, after light rain © 2010 Laurie Alexander

Ah, the fresh fragrance of rain-washed air—especially the first rain after a long dry spell! Subsequent rains don't perfume the air the same way. What's up with that?

Rainwater itself has no smell. Rather than clearing the air, maybe rainfall is adding something to the air, stirring up familiar earthy smells when drops pelt the ground and other surfaces. For decades we've had a general understanding of the chemicals perfuming the air. More recently, scientists using high-speed cameras may have discovered how those chemicals become airborne.

Australian researchers showed in 1964 that the after-rain smell comes from chemicals in the soil. Steam-distilling rocks produced a yellowish oil that was responsible for the smell. They dubbed it "petrichor," from Greek words for stone (*petra*) and the blood of the gods (*ichor*).

(Interestingly, while the Australians were among the first to study the smell scientifically, they weren't the first to capture it. A small perfumery in India had already figured out how to absorb the scent—they call it *matti ka attar*, or "earth perfume"—into sandalwood oil. Yes, you can buy petrichor perfume and candles.)

Other work showed that those aromatic soil chemicals — mostly a large, diverse, and often strong-smelling class of organic compounds called terpenes — come from plants and soil bacteria. Plant terpenes are major components of resins and essential oils used in perfumery. Soil microbes contribute the familiar smell

of freshly turned moist dirt, geosmin (from the Greek words, for "earth" and "smell"). Like the organisms they come from, the particular chemicals and their relative amounts in the soil vary with ecosystem and season. Also, these chemicals undergo various environmental "aging" processes that alter them, both before and after they settle on rocks and in soil. Essentially, Nature creates a nuanced "potpourri of place" that collects on everything.

So, how does rain cause this petrichor potpourri to reach our noses? Here's where the high-speed cameras come in. It turns out that certain conditions favor fizzy raindrops that launch microscopic droplets, or aerosols, loaded with soil stuff. Scientists already knew that raindrops can trap and release aerosols when falling on water. Now we know that something similar happens on land.

Massachusetts Institute of Technology (MIT) researchers filmed a single water drop falling onto various surfaces. They simulated rainfall intensities by releasing the drops from different heights. (Higher, elevated, release results in faster impact speed.) From roughly 600 experiments on 28 types of surfaces (12 engineered surfaces and 16 soil samples), they discovered that raindrops flatten upon impact, and tiny bubbles sometimes form beneath, then shoot upward through the droplet.


With the right drop speed and surface properties, a "cloud of frenzied aerosols" disperses—hundreds of aerosol droplets in just microseconds. Once the aerosols soar above the relatively stagnant air layer on the ground, they're free to sail on any passing breeze, to our noses and beyond.

The Goldilocks conditions for generating the most aerosols occur when the rain is neither too fast nor too slow, and the surface is neither too wet nor too dry. (Heavy rain means high impact velocity, which leaves too little time for bubbles to form.) In other words, light to moderate rain on sandy or clay soils is ideal for launching aerosols, and petrichor.

In our Mediterranean climate, the long stretch between rainy seasons allows ample time for Nature's plant "emissions" to collect in their surroundings. When the first light to moderate rain arrives... (*sniff!*) ...Ah!

If a picture is worth a thousand words, a video (~90 sec) is worth even more. Check it out! <http://bit.ly/1B8rPdS>

Additional reference:

<https://news.mit.edu/2015/rainfall-can-release-aerosols-0114> 

# Wildflower Walks!

## Free guided tours at Edgewood Park

Take a moderate three-mile walk to explore the stunning spring wildflowers with docents from Friends of Edgewood. All ages welcome!

### 2016 schedule

**Saturdays & Sundays**  
**March 12 – June 5, 10am-1pm**

Meet at the Bill and Jean Lane Education Center near the park entrance off Edgewood Road

**Saturdays in April, 10am-1pm**

Meet at the Clarkia Trailhead parking area on Cañada Road



Frances Freyburg Blackburn

- ✿ Bring water, a hat, sturdy shoes, sunscreen, and a snack if you wish.
- ✿ Restrooms and water available only at the Education Center.
- ✿ Arrive early for parking.
- ✿ For groups of 10 or more, make a reservation with [Events@FriendsOfEdgewood.org](mailto:Events@FriendsOfEdgewood.org).





# Got Time to Make a Difference?

## Volunteer with Friends of Edgewood Natural Preserve!

### Got a minute?

Read the rest of this page to find out how you can help endangered species, educate park visitors, and protect Edgewood.

### Got a couple of hours every so often?



You can help prevent species extinction! Drop in on the **Edgewood Weed Warriors** and help re-establish the threatened Bay checkerspot butterfly, or protect plants found nowhere else. Or join the **Road Warriors**, cleaning up roadside debris to beautify I-280 right along Edgewood Park.



### Got 3.5 hours on a weekend?

Become an **Education Center host** (we'll train you!) and share your enthusiasm for of Edgewood with some of the thousands of folks who visit the Center each year.

### Got about 6 hours sometime?

Join the ranks of the **Wildflower Walks Docents** and inspire visitors to appreciate Edgewood's springtime wonders. Or become a **Junior Explorer Docent** and bring the miracles of nature alive to young school kids. **We'll train you!**



### Got 4 hours per month?

Come on Board! The Friends of Edgewood **Board of Directors**, that is. Help us fulfill our mission of protecting and celebrating Edgewood through stewardship and educational programs.

**Learn more at [FriendsOfEdgewood.org](http://FriendsOfEdgewood.org)**

## Treasurer's Report for 2015

by John Morse

For the calendar year 2015, we continue to be supported primarily by those who love Edgewood Park. Over 90% of our operating income came from membership dues and donations from both members and non-members. Another 1% came from fees for our special events. The rest came from merchandise sales and fees we charge for docent training.

In addition, we received a substantial bequest from the estate of long-time member Lorie Coon. This has enabled us to establish an endowment fund that we will use for long-term projects.



So, what do we do with the money? The largest chunk, nearly 40%, was spent on habitat stewardship – the many programs we conduct to preserve and restore the natural habitat of Edgewood Park. This effort focused primarily on efforts to restore the Bay checkerspot butterfly and on efforts to eradicate non-native species (weeds) from the park. About 15% of our operating income was spent to improve, operate and maintain the Education Center. The remaining funds were used to pay for such things as publicity, running the spring Wildflower Walks, publishing and mailing the Edgewood Explorer newsletter, and general operating costs.

I am always amazed and delighted to see the generosity of you, our members and friends. It is your support that allows us to do what we do.

For more information, contact me at [Treasurer@FriendsOfEdgewood.org](mailto:Treasurer@FriendsOfEdgewood.org) at any time.

## 2016 Docent Manual

by Sandy Bernhard

The Docent Training Program has a long history at Edgewood, having been started by the California Native Plant Society (CNPS) before the Preserve was established and the Friends of Edgewood created in 1993. Over the years, our docent manual has grown to become a treasure trove of original and borrowed materials. Last fall, Mary Wilson, our Docent Training Coordinator, decided the time had come to give the manual a good brush-up: she asked docents Anita Stewart, Deanna Schiel, and Sandy Bernhard to join her in this important task.

Our goal was to create an up-to-date set of resources to support and inspire both new and experienced docents. We also wanted to better connect our docent-training materials with resources on the web, including the Friends of Edgewood website.

The 2016 revised manual retains the flexible binder format, with each document of the original manual updated (or occasionally archived), fact-checked, and reformatted. Many photos and illustrations are now in color, an improvement that enhances both their utility and their beauty. The entire manual is stored as a comprehensive set of electronic files, simplifying amending and reproducing, and will soon be available on the docent-only website.

(continued on Page 4)



Above: The federally endangered San Mateo thornmint is found only at Edgewood, but now there are four colonies instead of just one. The single existing colony has been persisting with supplemental seeding and habitat management (mowing and dethatching), but a single population is vulnerable to chance events like extreme weather, as well as normal population fluctuations. To spread the risk, Creekside Science identified additional areas within the preserve that have similar soils and vegetative associates. With volunteers from Friends of Edgewood and the Edgewood Weed Warriors, we installed 250 seeds in each of 80 1-meter square plots spread in four locations (including the existing one) throughout the preserve. We'll formally check the fate of these 20,000 seeds in May, but casual checks on the plots have noted at least some seedlings in each of the planted plots, which is very exciting! We look forward to seeing how these new colonies compare with the existing site. *submitted by Christal Niederer*

(*Docent Manual...continued from Page 3*) The work of the binder team was truly collaborative. As we got to work and got to know each other, we found our strengths: Deanna typed innumerable documents, contributed photos, prepared minutes, and provided technical support; Anita, our computer guru, created and managed our electronic files; Sandy edited and formatted pages, acted as corresponding secretary, and chaired meetings; and Mary, with her wealth of experience and knowledge, gave us context and kept us focused on what was most important. There was never any lack of opinion. We had a grand time working on this project, learned an enormous amount about document design and production, and are all very proud of the result.

Of course, the greatest payoff for team members was the opportunity to work closely with our extraordinarily knowledgeable, dedicated, and generous contributors. Special thanks go out to our topic experts who updated or wrote new material for the binder:

- Ken Himes on oak woodlands and chaparral,
- Toni Corelli on grasslands,
- Paul Heiple on geology, and
- Kathy Korbholz on Edgewood history.

Along with a fresh manual, we are welcoming three new experts to the Docent Training Program this year: Kathy Korbholz succeeds John Allen as our History of Edgewood presenter, Trevlyn Williams succeeds Ty Freiberg on Leading Hikes, and Ken Hickman will present a new session on Wildlife.

Flowers remain at the heart of the manual, and so we offer our heartfelt thanks to Bob Young, who gave us permission to update and reprint all 20 *Edgewood Explorer* articles from his “A Closer Look at the Flower...” series—now in glorious color. We also want to thank Lee Franks for his “Birds of Edgewood” series. And let’s not forget the bluebirds! We were fortunate to have Frances Morse provide new material on the bluebird-box monitoring program.

Bill Korbholz, Laurie Alexander, Linda Leong, Alf Fengler, Nancy Baum, Susie Hons, and various

members of our families all generously donated time and expertise to help us with fact-checking and technical and editing support. And finally, we are grateful to Trevlyn Williams for allowing us to reproduce several of her lovely watercolors of Edgewood landscapes, including *Trees on the Ridge*, which graces the new binder cover.

Friends of Edgewood docents will find the new manual at the Education Center and can order their own copy by writing to [Docent-Coordinator@FriendsOfEdgewood.org](mailto:Docent-Coordinator@FriendsOfEdgewood.org). Those docents who lead at least three walks this year can receive a manual for free.

The 2016 Friends of Edgewood Docent Manual is complete, but we are already generating ideas for next year’s binder, and that’s where you come in. We await your suggestions. How about a page on scat? On mnemonics? On interpretive skills? On...? Tell us what you think is best left to the website versus what is good to have on paper. We hope you will pop us a note or tag us on the trail. We’ve made a start; now it’s *your* turn! ❖

## Friends of Edgewood Natural Preserve

### Docent Manual

2016



Trees on the Ridge, original watercolor by Trevlyn Williams ©

© Trevlyn Williams

(Native Garden...continued from Page 1) Rangers develop very attractive plant labels to use in the garden. Kenny Hickman has provided much appreciated assistance with the garden design.

The Native Garden effort was initiated in the spring of 2013 with the removal of the non-native vinca and other exotics, sheet mulching of the area below the walkway to the Ed Center entrance, and the planting of some native shrubs propagated from Edgewood material provided by former Parks Ranger John Trewin. Several of the Friday Weed Warriors participated in this effort. The results of this initial effort are the toyon, hillside gooseberry, silver bush lupines, and California poppies seen in the garden today. Few additional plants were added until the fall of 2014, as the walkways and other hardscape materials needed to be installed. In 2014, we grew several coffee berry shrubs from seed, a few narrow leaf mules ears (which were transplanted in Oct. 2015), California sage, cinquefoil, *Madia elegans*, and cow parsnip. Additional plants were started in the winter of 2014/2015 and transplanted in mid-Oct. 2015 with the help of both wildflower docent and weeder volunteers. This planting included more coffee berry shrubs, Douglas Iris, toyon and sticky monkey flower shrubs. The seeds of several annual/perennial natives were directly sown in the garden in Nov. 2015, just as the timely rains arrived.

The seeds of many species of native plants were collected during the spring/summer of 2015 and have been started this winter (2015/2016), including native grasses and several other herbaceous annuals and perennials. Recently, Ken and Howie collected cuttings from several shrubs native to Edgewood for which we have not been able to get seed, and the CNPS nursery at Hidden Villa has agreed to provide space in their cutting propagation area (equipped with a mist system). We are planning to have a work day at the Native Garden in the late winter/spring of 2016 to transplant many of the seedlings that resulted from the fall 2015 sowing.

If you are interested in volunteering to help with development/maintenance of the native garden, contact Howie Smith at:

[Native-Garden@FriendsofEdgewood.org](mailto:Native-Garden@FriendsofEdgewood.org)

Currently, Howie works at Edgewood's Native Garden most Mondays, from about 9:30 am to noon.



Left: Toyon Right: Chapparal Current © 2016 Kathy Korbholz

# Yes, I'd like to become a Friend of Edgewood!

Here's my membership donation to support preservation, education, and restoration:

Join or renew online at [FriendsofEdgewood.org](http://FriendsofEdgewood.org)

- \$25 Friend
- \$50 Advocate \*
- \$100 Steward \*
- Other: \$ \_\_\_\_\_

\* Donors of \$50 or more receive a set of six Edgewood greeting cards; donors of \$100 or more also receive a one-year subscription to *Bay Nature Magazine*.

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- Please keep my donation anonymous.

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For volunteer opportunities, visit [www.FriendsOfEdgewood.org/Get-Involved](http://www.FriendsOfEdgewood.org/Get-Involved)



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*Mission Statement of The Friends of Edgewood* — To protect and celebrate Edgewood as a unique treasure by promoting exemplary stewardship, and by reaching out with informative public programs. [www.FriendsOfEdgewood.org](http://www.FriendsOfEdgewood.org)

**PRESERVE • EDUCATE • RESTORE**

**Bill and Jean Lane Education Center - Spring Hours and By Appointment\***

Wed	9:30 am to 12:30 pm
Sat	9:30 am to 4 pm
Sun	9:30 am to 4 pm

\*Subject to volunteer staffing.

**2016 Board of Directors**

Laurie Alexander  
 Alice Kaufman  
 Bill Korbholz  
 Kathy Korbholz  
 Linda Leong  
 John Morse  
 Todd Reimche  
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 Howie Smith  
 Mary Wilson



**UPCOMING EVENTS**

**Adopt-A-Highway**

Next Sessions: 3/16, 4/2, 5/1, 6/4

To volunteer or get more information, contact Dave Hershey at [adoptahighway-coordinator@FriendsOfEdgewood.org](mailto:adoptahighway-coordinator@FriendsOfEdgewood.org)

**Docent-Led Wildflower Walks**

Sat/Sun beginning 3/12/16; 10 AM @ BJLEC (Saturdays in April, walks also start from Clarkia Trailhead)

**Second Sunday Bird Walks**

3/13 (spring forward) and 5/8;  
 8 AM @ BJLEC (heavy rain cancels)  
 4/10 - 8 AM @ Clarkia Trailhead

**For more event info, see**  
[www.FriendsOfEdgewood.org/events](http://www.FriendsOfEdgewood.org/events)

The Edgewood Explorer is published quarterly by the Friends of Edgewood Natural Preserve, a nonprofit organization dedicated to preserving and restoring Edgewood and to educating the public about its treasures. The newsletter is edited by Linda Leong and is supported by contributions from many Friends. For more information about the Friends of Edgewood, visit our website at [www.FriendsOfEdgewood.org](http://www.FriendsOfEdgewood.org), mail us at PO Box 3422, Redwood City, CA 94064-3422, leave a message or fax us toll-free at (1-866) GO-EDGEWOOD (1-866-463-3439), or email us at [info@FriendsOfEdgewood.org](mailto:info@FriendsOfEdgewood.org).