

# Edgewood

# EXPLORER

FRIENDS OF EDGEWOOD • SPRING 2021

## New Trail Ambassadors Offer Assistance and Interpretation

by Kathy Korbholz

No one could have dreamed that we would have to cancel our well-regarded wildflower hike program for the second year in a row. Unfortunately, that is what COVID-19 has forced us to do. The ever-changing pandemic scene makes planning anything with a time-certain schedule problematic.



We wanted to find a viable alternative. We surveyed our volunteers to see if there was an interest in a different program; there was a positive response. We found our wildflower docents were anxious to exercise their interpretive skills, and additional volunteers wanted to help visitors appreciate Edgewood's special natural preserve status. Therefore, this spring, in place of scheduled wildflower hikes, the Friends of Edgewood will be experimenting with a new Trail Ambassadors Program.

This program will allow our devoted volunteers to offer their assistive services whenever and wherever they feel comfortable. Trail Ambassadors can choose their own

schedule and which trails they want to traverse. With no set schedule or visitor expectations of a docent-led hike, if we get another COVID-19 spike or the volunteer's health status changes, we will not be obliged to cancel hikes or find replacement docents.

The Trail Ambassadors Program, which begins in mid-March, will get more boots in the field and will help answer visitor inquiries in two ways. First, Trail Ambassadors may approach visitors who seem confused by trail markers, are trying to remember a plant's name, or need help finding their way to a restroom or parking lot. Second, visitors may seek out Trail Ambassadors to get their questions answered.

Visitors can look for our volunteers wearing a big white "ASK ME" button. All volunteers can offer way-finding instructions. Many of our wildflower docents can answer plant

identification or natural history questions on the spot. If volunteers are unsure of the answer, they will offer links to additional online resources, such as the Field Guide, Plant ID, iNaturalist, Seek, and the Edgewood trail map. At a COVID-safe distance, the visitor and the volunteer can research and discover the answer together.

This Trail Ambassadors Program is an experiment. We plan to offer it until at least mid-June. We will collect feedback from our ambassadors and hope to hear from our visitors as well. If we get a positive response, we may continue the program throughout the year. In any case, we will have to wait to see if the pandemic situation will allow us to resume our docent-led wildflower hikes in 2022.





## President's Message

by Peter Ingram

When COVID-19 materialized nearly a year ago, there was

already an environmental pandemic raging all around us—climate change—and its cures are even more daunting than vaccinating the human race.

I've been thinking a lot about 2020's legacy and how it was the year that many of our local landscapes, open spaces, and woodlands underwent radical ecological change. Most profound was the devastation brought by wildfires across California, but I'm not even considering the wildfires themselves. I'm focused on the accelerated activities that are a consequence of—and human response to—this increasing threat and that are changing the fabric of habitats across our county. Some examples in close proximity to Edgewood include the Huddart Park and Kings Mountain "shaded fuel break," the fire fuel reduction program for private properties in Woodside and Portola Valley, and PG&E's massive power line vegetation removal program. In addition, sudden oak death syndrome continued to take out scores of live oaks and other species, and the die-off of mature pine trees increased significantly.

2020 presented new challenges in Edgewood and reminded us that the park we love is not an island. Some of the most urgent issues we've been working on include:

- **PG&E power line vegetation removal.** After the wrenching experience of the 2019 gas line clearance, a

new round of vegetation removal is nearing completion, and it is not yet clear if more is being considered.

- **Parks Dept. fuel reduction project.** We thought that this joint-agency effort was completed, but we are learning that a much broader, multi-year effort is being planned by County Parks.

- **CalFire emergency turnarounds.** The Parks Dept. is responding to pressure to create permanent, graveled turnarounds throughout Edgewood Preserve. We are pressing staff to help us understand the need for, and the environmental review of, these proposed facilities.

- **Habitat degradation from off-trail foot traffic.** The surge in Edgewood visitors seeking respite from the COVID lockdown triggered a proliferation of new, illegal "social" trails, which threaten the Preserve's habitats, detract from Edgewood's beauty, and can legitimize improper visitor behavior.

Because Edgewood is the County's only natural preserve, the need to find the right balance between how these initiatives get prioritized, scoped, and acted on is critical. It is also increasingly important to ensure that Edgewood Preserve is managed in a way that keeps humans and adjacent properties safe. For more than a quarter of a century, Friends of Edgewood has kept a vigilant finger on the scale to ensure that the rare and endangered plant, insect, and animal species are truly protected and that human interventions are science-based, properly permitted, and kept to a minimum. As we enter 2021, we are making it a priority to address these issues. We have much hard work to do, and we are grateful for your support!



Climate justice meets social justice in a special presentation by Dr. Mustafa Santiago Ali, Vice President of Environmental Justice, Climate & Community Revitalization for the National Wildlife Federation. A renowned thought leader, policy maker, community liaison, trainer, and facilitator, Dr. Mustafa Santiago Ali is a lauded voice for uplifting communities to better secure environmental, health, and economic justice. As we welcome Earth Month, Dr. Ali will talk about systems, policy, resilience, and how we can get to a better place.

Join Friends of Edgewood, Acterra, and over 20 other community based organizations for "A New Day: From Surviving to Thriving." Tickets are free (\$10 donation suggested). Register here: <http://bit.ly/a-new-day-2021>

# Signs Tell Trail Tales

by Barrie Moore

One of the challenges Friends of Edgewood have faced this year is how to help the public learn about Edgewood Natural Preserve when in-person programs like the spring wildflower hikes and Junior Explorers are on hiatus and the Bill and Jean Lane Education Center remains closed. While nothing beats the chance to hike with a docent, we are experimenting with new interpretive signs to see if we can bring some of the stories and facts about Edgewood out to the trails where visitors can discover them on their own.

We are calling this initiative Trail Tales. We are starting with 6-8 signs on a number of popular topics, including poison oak, dusky-footed woodrats, the Bay checkerspot butterfly, scurry zones, and the HMP habitat restoration experiment, among others. The signs can be found at the start of the Sylvan trail, various points along the Sunset trail, and along Old Stage Road.

The signs are intentionally small, so they don't contribute to visual clutter along the trails, but each features a QR code leading to a web page with more in-depth information on each topic. QR codes have been around for a long time, but they are enjoying a bit of a resurgence now that most

## The Mystery of the Bay Checkerspot Butterfly.

The federally threatened Bay checkerspot butterfly, *Euphydryas editha bayensis*, once thrived in Edgewood's native grasslands, but by 2002 it had disappeared.



Bay checkerspots depend on native plants like California plantain and purple owl's clover.

FRIENDS OF EDGEWOOD  
TRAIL TALES




Learn how nearby Highway 280 impacted this population crash and about our efforts to bring back this iconic species.

Scan with your phone's camera or QR reader for more details.



smart phones allow you to scan the code with your camera rather than having to download a special QR code reader. We can measure the number of times each QR code is scanned so we can determine whether visitors are looking for more details, which will help us gauge interest in each topic.

We are also asking you to check out the new signs and send feedback or suggestions to us at [mc@friendsofedgeswood.org](mailto:mc@friendsofedgeswood.org). We will evaluate how the program is going in a few months, and if it is successful, we will add more signs on new topics throughout the preserve. 🦋




# SAN MATEO COUNTY PARKS VIRTUAL SCHOOLS PROGRAM

### FOOD WEB PROGRAM (1 HOUR)

Learn about the complexity of nature and how nutrients cycle through it by a basic introduction to the trophic levels found in the ecosystems around us. Curriculum features the following two activities:

- Food Web Demonstration
- Owl Pellet Dissection

The lesson also includes key food web vocabulary and what elements plants need to grow.




### OHLONE PROGRAM (1 HOUR)

Discover the similarities and differences in the ways we live now and the way of life of the original inhabitants of the SF Bay Area - the Ohlone. Curriculum features the following three activities:

- Braiding
- Stave Game
- Food Grinding

The lesson also introduces the concept of Land Acknowledgements.



## Friends Help Schools

In December and January, 24 FoE volunteers assembled 2,000 hands-on learning kits to support science and social studies learning for local school children. The kits cover two topics: food webs and Ohlone culture. Interpretive ranger Katherine Wright will distribute the kits to teachers who have requested a class through the San Mateo County Parks free, online learning programs. For more information about the online learning programs, contact [KEWright@smcgov.org](mailto:KEWright@smcgov.org).

# What Causes Color in Plants?

by Bruce Homer-Smith

Color in plants is produced by a variety of pigment molecules that absorb certain wavelengths and reflect the rest. These pigment molecules play an essential part in plant processes. Pigment production varies in response to circumstances, causing changes in leaf, petal, and stem color.

## Pigments in photosynthesis

Photosynthesis requires **chlorophyll**—an oil-soluble pigment molecule that absorbs blue and red light energy and reflects back the rest, making it look green to our eyes. The energy from the absorbed light triggers photosynthesis, which combines carbon dioxide and water to produce oxygen and ATP—a sugar the plant can move around and use in growing.

A second set of pigments, the **carotenoids**, absorb green and blue light, reflecting back red, orange, or yellow. Carotenoids help regulate photosynthesis. The energy they absorb is less than what the efficient chlorophyll molecule can absorb but can be transferred to chlorophyll if the plant needs more energy for photosynthesis. They can also receive excess energy from chlorophyll if there is too much sunlight. The carotenoid molecule gets rid of excess energy by vibrating, turning it into heat.

In drought, a leaf can save water by decreasing chlorophyll molecules, which reduces water-consuming photosynthesis. This allows the underlying carotenoid color to show through.

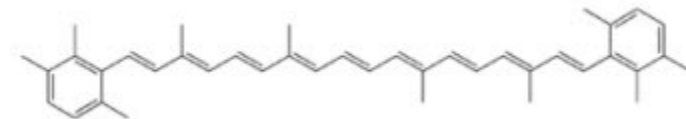


Silk Tassel (*Garrya elliptica*) Note yellow leaf where chlorophyll production has been reduced.

Photo © Neal Kramer. All rights reserved.

## A thousand carotenoid colors

There are over 1,100 carotenoids found in plants. They are non-water-soluble hydrocarbons ( $C_{40}H_x$ ), each with a different length or shape tail which determines the wavelengths of light it absorbs, each producing a specific yellow, orange, or red color. Carotenoids are present all the time but their color can be overwhelmed if there is a lot of green chlorophyll.



The carotenoid tail determines the wavelength of light it absorbs.

## Anthocyanins—a signaling system

Anthocyanins are a third kind of pigment and are not always present. They are water-based and are held in cells, along with salts, sugars, enzymes, and amino acids. They produce a red, purple, blue, or black color. They help a plant interact with its environment. For instance, a plant can optically signal that a fruit is ripe or that a flower is ready for pollination. It can produce a reddish color in early leaves to fool herbivores looking for green leaves. Of course, plants don't think, but plants that follow these patterns thrive over time.

*continued on page 5*



Poison Oak (*Toxicodendron diversilobum*) Early leaves "hiding" from herbivores.

Photo © William Follette [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0/)



# Friends of Edgewood Has a Good Year Despite Pandemic

by Angela Mallett

Friends of Edgewood board members, along with other volunteers, started the year planning wildflower hikes, docent training, Junior Explorers programs, operation of the Bill & Jean Lane Education Center, multi-year habitat restoration projects, and many other smaller programs. By the end of March, everything changed for the rest of 2020. Due to COVID-19, we were forced to close the Ed Center, cancel wildflower hikes and Junior Explorers programs, and scale back all in-person activities for the foreseeable future. Outdoor programs not involving the general public, like Weed Warriors, nest box monitoring, and Adopt-a-Highway, continue with modifications. We embraced the new Zoom culture and shifted our continuing education lectures for volunteers to be online, as well as held our first online Members General Meeting in October. While our public-facing programs decreased in 2020, the park was well-used by visitors as everyone embraced the outdoors as a respite to sheltering in place.

Our biggest expenditure in 2020 was habitat restoration and preservation (Project 467), including Green Grass initiative work, the addition of Edgewood Farms for seed propagation, and San Mateo thornmint restoration. Work in our native garden adjacent to the Education Center, showcasing native plants grown from seeds collected in the preserve, continued with the addition of new interpretive signage funded by a grant from the San Mateo County Office of Sustainability.

*Color in Plants, continued from page 4*

## Fall Leaf Color

The reds and purples in autumn foliage are produced by anthocyanins in the sap of leaf cells as sugars and phosphate break down. They combine with the always-present carotenoid yellows and oranges, and together they show through as the chlorophyll green pigments break down.

Creek Dogwood (*Cornus sericea*) Chlorophyll molecules break down first, letting other pigments show through. *Photo © Alf Fengler CC BY-SA 3.0*

Plants are communities of cells that perform complex molecular processes, resulting in the miracle of life. Pigment variations show us a hint of that complexity.

Learn more at [www.ncbi.nlm.nih.gov/pmc/articles/PMC1082902/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1082902/)

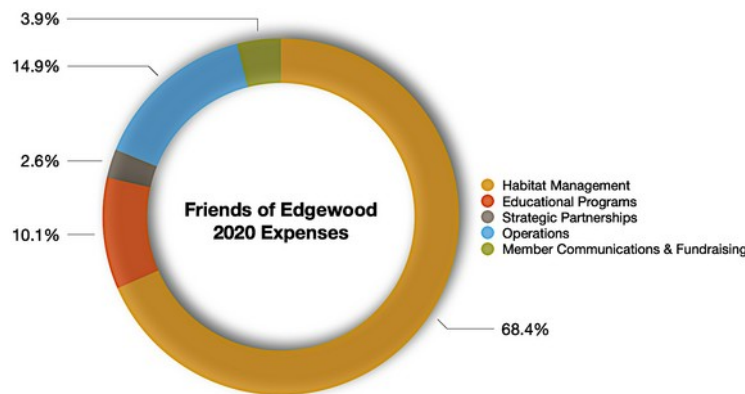


2020 was the best year for revenue since I have been treasurer. Membership dues and other gifts amounted to 78.6% of (non-investment) revenue. We also received some generous grants, primarily for habitat restoration, amounting to 21% of our incoming (non-investment) revenue.

In 2020, the lion's share of our expense budget, 68.4%, was used for habitat restoration and preservation. 10.1% went toward educational programs, the native garden improvements, and maintaining the Bill & Jean Lane Education Center. Member communications and fundraising, which includes publishing the Explorer newsletter, accounted for 3.9%. We also granted 2.6% to our nonprofit partners who are key to our strategic goals.

The remaining expenses were costs related to incoming donations, insurance, and other general operating expenses.

Over the last 25+ years, the Friends of Edgewood Natural Preserve organization has grown to a mature nonprofit, with medium- and longer-term investments, in addition to yearly funding, to support the continuation and growth of our programs. Our 2020 Annual Report can be found at [friendsofedgeswood.org/annual-report](http://friendsofedgeswood.org/annual-report). Thank you again to our volunteers, members, and friends for your generous support. Your donations of both money and time allow us to fund exciting new projects and expand existing programs. 🦋



# Colored Stakes Seen from Trails Mark Green Grass Test Sites

Story and photos by Perry McCarty

The Green Grass project is now underway in Edgewood’s grasslands. Announced in 2018, Edgewood Preserve’s and Friends of Edgewood’s 25th anniversary year, the Green Grass project aims to reduce non-natives and increase natives. The test plots are in Edgewood’s “fertile”—as opposed to serpentine—grasslands. We have obtained funding, planned our approach, obtained permits, collected seeds in preparation, and waited for this year’s rains.

The approaches being tested are:

- 1) Hydromechanical pulverization (HMP), which is a high-pressure water treatment to “pulverize” early germinating plants.
- 2) Close mow, which scrubs the surface.
- 3) String cutters to trim grasses before their seeds mature. Native seed is broadcast in some of the test plots to help natives reclaim the area. The test treatments were applied over several days starting on Jan. 11. The spring mow will occur in March or April.

There are eight test sites distributed around the grasslands. The sites can be identified by colored wooden stakes as you walk the Sunset, Serpentine, and Edgewood

Hydromechanical pulverization (left) is a high-pressure water treatment. Close mow (right) scrubs the surface. See a video of seeding at HMP test sites at [youtu.be/O5rrkmrgqG0](https://youtu.be/O5rrkmrgqG0).



trails. These sites represent different sun, soil, and moisture conditions. Each test site contains five test plots and one control.

Plot Stakes	Test Method
Blue	HMP + boutique seeds
Blue & yellow	HMP + seed mix
Brown	Close mow
Brown & yellow	Close mow + seed mix
Green	Spring mow
Black	Control

The seed mix is a combination of *Achillea millefolium* (yarrow), collected at Edgewood and amplified at Hedgerow Farms, and a mix of eight other species found at Edgewood. The “boutique” seeds are in smaller amounts, but represent 17 species collected at Edgewood, eight of which had small-scale amplification at Edgewood Farms.

We are now left to monitor the results. In the coming weeks, we will determine whether follow-up activities are required to assist in achieving the desired results. Feedback from this year will guide us in next year’s treatment. Stay tuned!



## Which Woodpecker Is That?

by Michele W. Conway, with help from Jonathan Starr  
In a recent webinar presented by San Mateo County Parks in conjunction with other regional organizations, biologist and birder Alvaro Jaramillo discussed seven different woodpeckers found in San Mateo County.

Downy woodpeckers are common throughout the Bay Area, and one that you might see in your backyard. The downy woodpecker has a thorn-like beak about half as long as its head, black wings with rows of white spots, and its back is solid black with a big white spot. Males have a red spot on the nape. Both male and female juveniles have a red cap, but females lose the red cap in maturity.

Looking similar to downy woodpeckers, but larger and less common, are hairy woodpeckers. They have black and white wings and backs, males with red nape, and spear-like beaks almost as long as their heads.

Nuttall's woodpecker is another black and white woodpecker. It has black and white stripes like a ladder on its back. Males also have a red nape. Common where oak trees grow, it is found almost exclusively in California.

Acorn woodpeckers are mostly black. They have a prominent red cap, yellow eyes, and a white ring around their face that makes them look clownish. They live in groups working together to store acorns, and raise young in one nest with multiple females, males, and offspring.

The northern flicker looks quite different from other Bay Area woodpeckers. It is light-colored with black flecks over most of its body and a prominent black bib. It forages for ants on the ground with its long barbed tongue.

The red-breasted sapsucker is the only sapsucker that breeds in the Bay Area, Jaramillo said. Adults have red heads, necks, and breasts with a white vertical stripe on the folded wing. The juveniles are mostly black and brown, with traces of red in the head and neck areas.

Pileated woodpeckers are seen in the forested regions of the county, with sightings in various parks and open spaces. These large, mostly black birds, with their distinctive red crest and white neck stripe, are the largest of common woodpeckers in North America. Look for their big deep square holes in forest trees. Jaramillo suggested that dead trees from last year's fires will provide more habitat for pileated woodpeckers, and the bird may become more common in the area as a result.

Ebird.org is a good resource for learning where woodpeckers have been sighted in the Bay Area.

## Become a Friend of Edgewood!

JOIN or RENEW your membership ONLINE or by MAIL:

**ONLINE:** [foew.org/donate](http://foew.org/donate)

**BY MAIL:** Send this completed form with your donation amount circled to Friends of Edgewood, 3 Old Stage Coach Rd., Redwood City, CA 94062-3801.

\$25 \$50 \$100\* \$150\* 250\* \$500\* \$\_\_\_\_\_

Please make me a Sustaining Member and charge my credit card \$\_\_\_\_\_ each month. (\$5 minimum)

EXPLORER newsletter preference:  email  mail

\*Check if you wish to receive eligible thank you gifts:

6 Edgewood greeting cards for donations of \$100+

Plus 1 year of *Bay Nature* magazine for donations of \$150+

Name \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Email \_\_\_\_\_

Phone \_\_\_\_\_  home  cell

Type of credit card: MasterCard Visa Discover

Name on card \_\_\_\_\_

Card number \_\_\_\_\_

CVC \_\_\_\_\_ Expires \_\_\_\_\_

Thank you for supporting the Friends of Edgewood.

Friends of Edgewood is a 501(c)3 nonprofit.

Donations are tax-deductible as allowed by law.

## Switch to a Sustaining Membership Easier for you. Better for Edgewood.

Friends! A sustaining membership lets you make a monthly donation via your credit card and have a huge impact on programs like Project 467, Junior Explorers, and more. Can you spare just \$5 or more per month to support Friends of Edgewood and the park we love?

Go to [foew.org/donate](http://foew.org/donate), and follow directions to become a sustaining member, or email us at [mem@friendsofedgewood.org](mailto:mem@friendsofedgewood.org), and we will help you get set up.



Est. 1993

# Friends of Edgewood

PRESERVE • EDUCATE • RESTORE

Friends of Edgewood Natural Preserve  
3 Old Stage Coach Road  
Redwood City, CA 94062-3801

ADDRESS SERVICE REQUESTED

## Bill and Jean Lane Education Center at Edgewood Park and Natural Preserve

Closed until further notice.

Please check the website for the latest information.

To learn more about Friends of Edgewood, visit our website at [foew.org](http://foew.org), call or fax us toll-free at (1-866) GO-EDGEWOOD, or email us [info@friendsofedgeswood.org](mailto:info@friendsofedgeswood.org).



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**EXPLORER**

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- Edgewood Park and Natural Preserve is open for hiking and equestrian use.
- Please review trail maps, obey signs, and stay on approved trails.
- Wear or carry a face covering. Put it on when you cannot maintain 6 feet social distance from others.
- Restrooms in the picnic area are open.
- Picnic areas are open only for single households. No gatherings are permitted.
- The Bill and Jean Lane Education Center remains closed.
- Restrictions may change at any time. Check our website at [foew.org](http://foew.org) for current information.

The Edgewood EXPLORER is published quarterly by Friends of Edgewood Natural Preserve, a nonprofit organization dedicated to preserving and restoring Edgewood and educating the public about its treasures. Friends of Edgewood Board of Directors: Laurie Alexander, Sandra Bernhard, Kathy Goforth, Peter Ingram (president), Bill Korbholz, Kathy Korbholz, Linda Leong, Angela Mallett, Perry McCarty, Barrie Moore. The newsletter is edited by Michele W. Conway and supported by contributions from many Friends.