Edgewood EXPLORER

FRIENDS OF EDGEWOOD • SUMMER 2023

New Crop of Docents in 2023

by Sandy Bernhard

Should you meet them on the trails, please congratulate, welcome, and encourage the graduates of our 2023 docent class: Deborah Anthonyson, Steve Crawford, Vera Dadok, Ai Ching Lim, David Mendel, Kaushal Parekh, Sue Schmitt, Matthew Spotts, Holly Thomas, and Debbie Wright. (Ai Ching and Matthew are a parent-teen team; help us spread the word that we encourage these partnerships!) These ten individuals stepped up to the challenge and into the fun of becoming a FoE wildflower docent. We wish all our graduates many happy years sharing Edgewood's beauty and stories.

Without instructors, we would have no program. Heartfelt thanks go out to our dedicated team: Kathy Korbholz (history), Paul Heiple (geology), Gina Barton (wildlife), Howie Smith (morphology), Rebecca Reynolds (woodlands), Ken Himes (chaparral and coastal scrub), Alf Fengler (grasslands), and Laurie Alexander (hikes with families). Each of our instructors is a Friends of Edgewood volunteer with years of experience in the preserve. How fortunate we are to have these folks in our community!

No one among us has been more dedicated, however, than Ken Himes. This year marks Ken's final year as a training instructor. In the late 1980s, Ken was part of the California Native Plant Society (CNPS) team leading public hikes as part of the campaign to save Edgewood. In 1990, CNPS knew it needed more help getting out the message and Ken became an instructor. When the preserve and the Friends of Edgewood were created, Ken continued to teach new docents every spring – for 34 years!

Ken Himes

With his incomparable knowledge of Edgewood and California flora and his collegial, inspiring manner, Ken has left a very big set of boots to fill. I'm confident though that the right person will step up because fostering leaders in stewardship has been one of the strengths Ken has instilled in our program. Thank you, Ken!

To find out how you can pull on your boots to become a wildflower docent, visit friendsofedgewood.org/become-a-docent or contact me, Sandy Bernhard, the training coordinator at docent-training-coord@friendsofedgewood.org.

New Edgewood Video on YouTube!

Check out our new video highlighting Edgewood's spring wildflowers and our work to protect Edgewood's extraordinary biodiversity: https://youtu.be/bphbetfQhf4

Special thanks to San Mateo County Parks Foundation, grant funding from the National Environmental Education Foundation (NEEF), videography by San Mateo County Parks Ranger Rob Cala, and featured "Friends" of Edgewood.

FRIENDS OF EDGEWOOD celebrates 30 years

A GENERATION

1993

EDGEWOOD PROTECTED

San Mateo County declares Edgewood a Natural Preserve in perpetuity. Friends of Edgewood forms as an all-volunteer organization.

1994

FOE GETS TO WORK

FOE members install a new sign identifying Edgewood Park and Natural Preserve; start work on a new preserve Master Plan.

1995

BEST FRIEND AWARDS BEGIN

Awards continue annually, recognizing outstanding commitment of members.

1997

NONPROFIT STATUS

FOE incorporates as a nonprofit. County adopts the new preservation-oriented Master Plan.

1998

REACHING OUT

Community outreach to schools begins. Road Warriors adopt the I-280 corridor adjacent to the preserve.

1999

DOCENT PROGRAM

FOE takes over docent training and wildflower walks from California Native Plant Society.

2000

WEED WARRIORS PLUS

Weed Warriors – going strong for 10 years. FOE and partners execute new Weed Management Plan.

2002

ED CENTER VISION

County accepts conceptual plan for new Education Center. Public and private funding is sought.

2003

FOE TO THE POWER OF TEN

FOE turns ten! Launches project to map Edgewood's trailside resources.

2007

VERY HUNGRY CATERPILLARS

Bay checkerspot butterfly is reintroduced in Edgewood.

OF DEDICATION

2008

STRATEGIC PLANNING

Friends of Edgewood celebrates 15 years; develops strategic plan for future.

2011

VISION BECOMES REALITY

The Ed Center, named for Bill and Jean Lane, who were major funders, is completed and opens with FOE volunteer staff.

2015

ENDOWMENT FOR THE FUTURE

FOE receives substantial bequest; sets up endowment fund for long-term projects.

2016

NATIVE GARDEN GROWS

Native garden is started outside Ed Center.

2017

PROTECTING BIODIVERSITY

FOE convinces PG&E not to replace two gas lines inside the preserve.

2018

RESTORING HABITAT

FOE celebrates 25 years; introduces overarching habitat restoration program: Project 467: Protecting Every Acre.

2020

RISING TO THE CHALLENGE

COVID-19 shuts down Ed Center and wildflower hikes; with precautions, some FOE activities continue. "Edgewood Farms" is built and planted with natives for seed production to aid restoration efforts.

2021

GREAT ADAPTATIONS

FOE trail ambassadors and Trail Tales signs provide interpretation while Ed Center is closed. FOE and Creekside Science test different weeding methods.

2022

BUILDING RESILIENCE

Ed Center reopens; wildflower hikes resume. Five acres in Edgewood burn in the solstice fire. Edgewood Farms adds more planting beds.

2023

FOE CELEBRATES 30 YEARS

The organization, which remains all-volunteer, staffs and coordinates 40 different activities. After record winter storms, the wildflower bloom is spectacular.

“Attractive” Edgewood Asters Make Showy Displays

by Bruce Homer-Smith

Of the 557 plant taxa currently listed at Edgewood, 94 of them are in the Aster Family! One of the reasons this family is so successful is its use of densely packed flower heads that contain dozens, and sometimes hundreds, of genetically different small florets. These flower heads make a showy display to attract bees, hummingbirds, and wasps, who can access many florets with one visit.

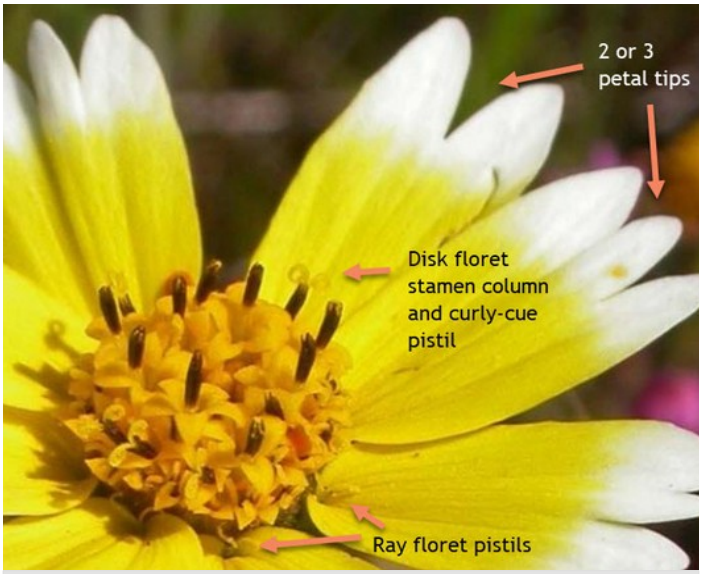
Aster flower head arrangements have evolved into several patterns that you can discern as you encounter them.

Radiate Head This is the arrangement you probably think of first. There are two types of florets, disk florets in the center, surrounded by a ring of ray florets with two- or three-tipped fused petals. Each disk floret is a tube with five lobes and a reproductive column in the middle. They are generally bisexual (or sometimes just male) and all the same size. Ray florets are just female or may be sterile.

Radiate Head
disk and ray florets

Ray florets have evolved from the typical five-petal aster corolla to just two or three petals, fused together but still separate near the tip. Over evolutionary history, the other petals have atrophied or disappeared, sort of like horses losing their toes. You can see the results in the tidy tips photo below.

Many Edgewood asters are in this group, including California aster, goldfields, tarweeds, gumweeds, mule ears, tidy tips, and yarrow.



Tidy tips (*Layia platyglossa*). Looking closely, you can see the pistils of the ray florets tucked in at the base of the fused petals. The central disk florets form a tube with 5 lobes and a reproductive column in the middle. *Photo © Neil Kramer. All rights reserved. Diagram by Robert Allen**

Liguliflorous Head This is the dandelion group. There are no central disk florets, just petal-like bisexual ligulate florets, radiating out from the center with five-tipped fused petals.

Ligulate florets have evolved to be different from ray florets, even though they look similar. Ligules have all five petals fused together with five separate tips. Also, they’re bisexual instead of female or sterile.

Liguliflorous Head
ligulate florets only

Edgewood dandelion-like asters include California dandelion, Douglas’ microseris, rod wirelettuce, salsify, and cat’s ear.

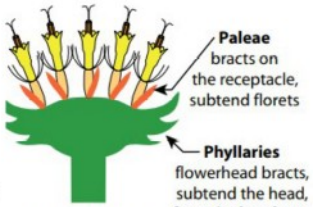
California dandelion (*Agoseris grandiflora*). The brown stringy things are aging reproductive columns. The yellow center shows more ligulate florets not yet opened. *Photo by Wilde Legard CC BY-NC-SA 3.0. Diagram by Robert Allen.**

The next three head types have no ray or ligulate florets, just central disk florets.

continued on page 5

Asters *continued from page 4*

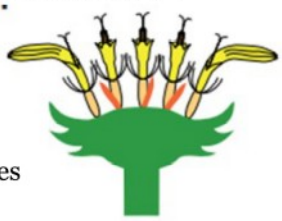
Discoid Head Disk florets are equal size and mostly bisexual. In Edgewood, these are found in the thistles (Cirsium) and the male coyote brush flower heads. Thistles are thought to have derived from a single species about 10 million years ago, and yet now occur in swamps, deserts, and mountains. The aster head design is so effective that once it makes a key change, it can radiate into many species covering many environments.



Discoid Head
disk florets only

Short-styled thistle (*Circium brevistylum*). Protected by a cup of spines, each floret is a tube with five lobes and a central reproductive column. *Photo by Alf Fengler CC BY-NC 3.0. Diagram by Robert Allen.**

Radiant Head Inner disk florets are relatively small and surrounded by a ring of larger outer disk florets. I think this makes the head look like a sunburst, thus radiant. In general, both types of disk florets are bisexual. Edgewood asters with radiant heads are primarily the Centaureas – tocalote, yellow star-thistle, and bachelor's button. Paul Heiple speculates that radiant heads may be a successful variation on discoid heads, with larger outer florets making the flower head more visible to pollinators.



Radiate Head
disk and ray florets

Bachelor's button (*Centaurea cyanus*). A group of central disk florets is surrounded by a second group of larger disk florets. *Photo by Keir Morse CC BY-NC-SA 3.0. Diagram by Robert Allen.**

Disciform Head This form also has two rings of disk florets. The inner florets are almost always bisexual. Outer florets are much smaller – sometimes female and sometimes sterile. Our Artemisias (California mugwort and California sagebrush), Pseudo-gnaphaliums (cudweeds and everlastings) are in this group.

Disciform Head
disk florets surrounded by filiform, naked, or sterile florets; *or* all filiform *or* all naked

California mugwort (*Artemisia douglasiana*). Inner florets have a noticeable corolla. Outer florets don't show a corolla, just string-like female pistils. *Photo by Keir Morse CC BY-NC-SA 3.0. Diagram by Robert Allen.**

Five Aster Flower Head Types

Radiate	Disk and ray.	Disk bisexual or male. Ray female or sterile. Rays show 2 or 3 terminal lobes.
Liguliflorous	No disk, only ligulate florets.	Bisexual. Ligules show 5 terminal lobes.
Discoid	Disk only.	Usually bisexual. Same size.
Radiant	Disk only.	Usually bisexual. Peripheral larger.
Disciform	Disk only.	Inner bisexual. Peripheral female with reduced or missing corolla.

As you walk around Edgewood, see how many aster flower head arrangements you can find.

Want more? See https://www.occnps.org/PDF/OCW-084-Asteraceae2of2.pdf

Thanks to Paul Heiple and Sandy Bernhard for their help on this article.
*Diagrams by Robert Allen, from "Wildflowers of Orange County and the Santa Ana Mountains," Laguna Wilderness Press, July 2013. Used with permission.

Did You Know? Western Fence Lizards Have a Third Eye!

by Jonathan Starr

Western fence lizards seem everywhere underfoot on the trails in Edgewood Natural Preserve during spring and summer. Yet they always seem to avoid getting stepped upon. It is as if each one has a third eye in the back of its head. And, in fact, each one really does!

The structure is called the "parietal eye." Typically, it appears as a gray oval scale with a white or bright spot in the middle. You find it on the back of the fence lizard's head, midway between, and somewhat behind, its two regular eyes. (See photo.)

While differing structurally and functionally from regular eyes, the parietal eye is light-sensitive. It connects neurologically to the pineal gland located within the skull. Signals from the parietal eye affect the functioning and hormonal emissions of that gland, which affect circadian, daily, and seasonal rhythms, activities, and functions. This third eye also seems to enable navigation based on solar position and time of day. And the detection of light and shadow variations may trigger evasive actions.

Many lizard species have this feature, as do some frogs and other amphibians. Some fish have them; lampreys have two of them. No modern birds have them, nor do any mammals. But many fossils of the Therapsid reptiles,

Western Fence lizard (*Sceloporus occidentalis*)
Photo by Jonathan Starr

which were distant evolutionary ancestors of mammals in the Permian and Triassic periods, have a prominent parietal foramen (hole) in the top of their skulls, strongly suggesting the presence of a third eye.

Next time you see a western fence lizard, look closely for that third, parietal eye. It might be looking back at you.

Why Dogs Are Not Allowed in Edgewood Park and Natural Preserve

Edgewood's status as a natural preserve requires extra stewardship on everyone's part to ensure that rare habitats and endangered species are protected and allowed to flourish. Public access is allowed, but some human-related activities are necessarily prohibited.

Even when they are on leashes, dogs disrupt native habitats and wildlife behavior patterns (for instance, by "marking" territory). Other mammals, such as deer, avoid dogs' scents by going elsewhere, like trying to cross the highway. Edgewood is home for naturally occurring predators, such as bobcat and coyote; the dog is their competitor.

Only certified guide dogs are allowed in Edgewood Park and Natural Preserve. All other dogs, including emotional support and other kinds of therapy dogs, are not allowed.

Where Can I Hike with My Dog?

Dogs are welcome nearby in Pulgas Ridge Open Space Preserve (OSP) – just across Edgewood Road. There are six miles of trails, and leashed dogs are allowed on all of them. As a special treat, there is a 17.5-acre section in the center of Pulgas Ridge OSP where dogs can roam off-leash. Find information about Pulgas Ridge OSP at openspace.org/preserves/pulgas-ridge.

Find a list of San Mateo County parks where dogs are allowed at smcgov.org/parks/dogs-san-mateo-county-parks.

Learn more at www.thenatureinstitute.org/wp-content/uploads/2019/02/The-impact-of-dogs-on-wildlife.pdf.

Bioblitz Was Here

by Katherine Wright, Interpretive Ranger for SMC Parks

On the foggy morning of April 29, an intrepid group of 22 community scientists descended upon Edgewood Park and Natural Preserve to discover what biodiversity lay in store. It was the weekend of the City Nature Challenge, an event in which communities all over the world compete to find and document biodiversity in their own cities using the iNaturalist platform.

The group at Edgewood Preserve contributed more than 1,000 observations and 264 species to the San Francisco Bay Area's total of 31,000 observations and 2,439 species. See the results of our bioblitz at www.inaturalist.org/projects/2023-edgewood-park-and-natural-preserve-bioblitz

San Mateo County Parks has been collaborating with the California Academy of Sciences to lead bioblitzes in our parks since 2014, along with many other local nature-based organizations. This year we were joined by staff from CuriOdyssey, who assisted in providing snacks, and by docents with the Friends of Edgewood, who supported observations from the various side entrances to the preserve. We appreciate the support of our partners!

This year's winner of the City Nature Challenge by a long shot was La Paz, Bolivia, with a staggering 121,394 observations and over 5,200 species. More results of this year's City Nature Challenge can be viewed here: www.inaturalist.org/projects/city-nature-challenge-2023

The City Nature Challenge originated in California in 2016 as a competition between Los Angeles and San Francisco Bay Area (Beat LA!). This effort was led by the community science teams at the California Academy of Sciences and the Natural History Museum of Los Angeles County.

The next two San Mateo County Parks bioblitzes will occur at Quarry and Mirada Surf parks June 24 for the Snapshot CAL Coast Bioblitz and Sept. 9 at Pescadero Creek County Park for the California Biodiversity Week Bioblitz. We hope you can join us!

Save the Date

for the Friends of Edgewood annual **volunteer recognition event.** Details to come. Want to volunteer with Friends of Edgewood? Learn about volunteer opportunities at friendsofedgewood.org/learn-about-edgewood-park/get-involved.

Become a Friend of Edgewood!

JOIN or RENEW your membership ONLINE or by MAIL:

ONLINE: 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:

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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, and follow directions to become a sustaining member, or email us at 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
Open Wednesdays, 9:30 a.m. – 12:30 p.m. and
Saturdays and Sundays, 9:30 a.m. – 4 p.m.

To learn more about Friends of Edgewood, visit our website at foew.org, call us at 650-367-7576, or email us at info@friendsofedgewood.org.

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Edgewood EXPLORER

SUMMER 2023 • VOLUME 30 NUMBER 2

IN THIS ISSUE

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, Sandy Bernhard, Caroline Bowker, Junko Bryant, Michele W. Conway, Nancy Enzminger, Peter Ingram (president), Bill Korbholz, Kathy Korbholz, Linda Leong, Angela Mallett, Perry McCarty, Barrie Moore, Rebecca Reynolds, Matthew Tobin. The newsletter is edited by Michele W. Conway and supported by many friends.