

# News from the



**FRIENDS OF THE  
BERNARD  
BIOLOGICAL  
FIELD STATION**

Volume 17, No. 1, June 2016

[bfsfriends@earthlink.net](mailto:bfsfriends@earthlink.net)

[www.fbbfs.org](http://www.fbbfs.org)

P.O. Box 1101, Claremont, CA 91711

Of the Claremont Colleges

## Please join us on the 4<sup>th</sup> of July!



As usual, we will have an information booth in Memorial Park and a group to walk in the parade with signs illustrating BFS plants and animals. If you can help out at the booth for an hour or two, let us know.

Stop by the booth to find out where we are in the parade if you'd like to join in the fun!

## Meet the Inhabitants



### Goldback Fern

*Pentagramma triangularis*

Although one doesn't usually associate ferns with dry habitats like coastal sage scrub, there are several places on the BFS where you can find this lovely native fern in the spring. The back side of the fronds gives the plant its name, as you can

## Sightings

- ✓ gray velvet doveweed leaves
- ✓ tiny new acorns
- ✓ rings of discarded petals surrounding harvester ant nest openings
- ✓ islands of bright green algae floating in the lake
- ✓ brilliant scarlet berries on Nevin's barberry and redberries
- ✓ the outdoor classroom, stools up, empty for the summer
- ✓ intense sky blue flowers on eriastrum dotting roads
- ✓ coyote scat and feathers
- ✓ ground squirrels bounding away, diving for cover
- ✓ red and orange leaves, along with berries, on poison oak
- ✓ honey bees and native bees collecting nectar and pollen in yellow cactus blooms
- ✓ pink and white buckwheat flowers on stalks like old-fashioned antennae
- ✓ panicles of white toyon and laurel sumac flowers
- ✓ few remaining galls like red M&Ms on willow leaves
- ✓ flags and cages indicating research
- ✓ russet deerweed stems
- ✓ arrangement of stones left by LEEP schoolchildren
- ✓ horehound sprayed bright blue-reason unknown
- ✓ loud buzzing along 6ft stems of white sage flowers

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## Tours of the BFS

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Community and school groups can arrange to take tours. If you are interested in bringing your group to the BFS to learn about what is there, contact the Director: 909-398-1751 [wallace.meyer@pomona.edu](mailto:wallace.meyer@pomona.edu)

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## BFS Volunteer Days

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First Saturday of the month, 10:00 a.m. until noon, followed by a tasty pizza lunch for the volunteers. If you have questions or want to be added to the volunteer list, please contact the BFS Volunteer Coordinator: Nancy Hamlett (909-964-2731) ([hamlett@hmc.edu](mailto:hamlett@hmc.edu))

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## Claremont Garden Club

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Free and open to everyone interested in any type of gardening. Meetings are second Wednesday of most months, 6:30-8:30 pm at the Napier Center at Pilgrim Place, 660 Avery Rd. Talks start at 7pm. For more info [gardenclub@sustainableclaremont.org](mailto:gardenclub@sustainableclaremont.org), [www.sustainableclaremont.org](http://www.sustainableclaremont.org)

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## See the Friends website

[www.fbbfs.org](http://www.fbbfs.org)  
for past newsletters and a map showing which colleges now own which parts of the Field Station.

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**City of Claremont:**  
[www.ci.claremont.ca.us](http://www.ci.claremont.ca.us) P.O. Box 880,  
Claremont, CA 91711  
City Clerk: 399-5460  
**Claremont Colleges:** [www.claremont.edu](http://www.claremont.edu)  
**The Claremont Courier :** (909) 621-4761  
1420 N. Claremont Blvd. Suite 205B

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*The Friends is a non-profit,  
grassroots organization*

*“Dedicated to Education  
and the Environment”*

see in the photo above. The underside starts out pale and becomes golden as spores mature. This is a small fern, with wiry, black stems less than a foot long and dark-green leaflets about 3" wide. The leaves unfurl in the shade of shrubs or on the north side of banks. As temperatures rise, and water disappears, the leaves shrivel and the plant goes dormant until late winter. Like many native plants, the fern had some Native American uses. According to the Curbstone Valley Farm website: “The Karok used Goldback Fern as an analgesic, and to control pain after childbirth, and the Miwok chewed the fern as a remedy for toothache. Yurok children would apparently use the Goldback Fern fronds as decoration, pressing the spore side against their skin, leaving behind a decorative golden impression.”



## Mexican Cactus Fly

*Copestylum mexicanum*

These native “flower-loving flies” are large and handsome, up to 3/4" long with shiny black bodies and wings that are half black, half clear. The adults drink nectar from flowers such as the cotton thorn in the photo above which fuels them on their search for mates and a place to lay eggs. These flies live in dry areas like our CSS and desert habitats so they need to be sure their offspring have enough food and moisture to develop. They do this by laying eggs in rotting cacti whose breakdown provides a succulent “larder” of proteins and water for their new generation as well as other insects. Sometimes the inside of the cactus turns to a soupy mess and the insects need to be adapted to that. The cactus fly larva has an elongated abdomen with some breathing apparatus (spiracles) at the end which it can stick out of the soup to get oxygen. This structure has given them the somewhat off-putting name of “rat-tailed maggots” even tho the adults are lovely.

## **BFS Publications for the 2015-2016 Academic Year**

*Wallace M. Meyer, Director, Bernard Field Station*

There is no question that the Bernard Field Station (BFS) is viewed as an important educational resource for the Claremont Colleges and the neighboring community. For example, the BFS hosted 37 courses this academic year. Most courses were associated with the Claremont Colleges, but we also hosted courses from other institutions including Cal Poly Pomona, Cal State Fullerton and Pasadena City College. In addition, the Leadership in Environmental Education Partnership (LEEP), run through Pitzer College, continues to provide a critical link between the BFS and local Claremont K-12 students. This year, the LEEP program hosted > 130 students from local elementary schools once a week for the majority of the spring semester. While this aspect of the BFS has been regularly touted, its importance as a location for ecological research has largely been underestimated.

**This is a great year to highlight the importance of the BFS for rigorous research** since productivity this academic year has been exceptionally high, with four peer-reviewed papers published using field station data.

- **Journal of Insect Conservation:** *“Ant communities in native sage scrub, non-native grassland, and suburban habitats in Los Angeles County, USA: conservation implications”*
- **Journal of Arid Environments:** *“Carbon and nitrogen storage in California sage scrub and non-native grassland habitats”*
- **Journal of Insect Physiology:** *“Exceptional thermal tolerance and water resistance in the mite *Paratarsotomus macropalpis* (Erythracaridae) challenge prevailing explanations of physiological limits”*
- **Plant Ecology:** *“Why are native annual abundances low in invaded grasslands? Testing the effects of competition and seed limitation.”*

Combined, this research highlights the importance of the preservation of natural systems, how habitat modifications influence biodiversity and carbon storage capacity, how changing conditions influence the relative abundance of native vs. non-native species, and some of the amazing physiological traits that allow organisms to thrive in our locally harsh conditions. In other words, research at the BFS is helping to address some of the most critical environmental issues of our time.

You can access these research papers on the BFS website ([www.bfs.claremont.edu](http://www.bfs.claremont.edu)) by going to “Publications”, and be alerted to new publications and activities through our Facebook page ([www.facebook.com/BernardFieldStation](http://www.facebook.com/BernardFieldStation) ). Also, look for the BFS annual report this August.

### **Silent Auction**

Thanks to everyone who bid on an item for our Annual Silent Auction as well as to all the artists who donated and the Folk Music Center for the display space! It was a great success! Although most items went to Claremont residents, some went to Claremont Colleges’ alums in New York and Baltimore.

### **Books**

We donated about two dozen books to the BFS library to help with student research and teaching.





## Earth Day

Thanks to everyone who helped with the tours and activities, and all those who took part in them.

This was an exceptional year for *Penstemon spectabilis* with huge swaths of the BFS covered in bright purple columns of blossoms.

## Robert Redford Conservancy Update

Pitzer College plans to begin renovation of the Infirmary this summer to open in fall of 2017.

→ **The oak-lined entry road to the BFS** which leads to the Infirmary is on the part of the field station that was sold to Harvey Mudd. HMC has said that Pitzer can use the road next year but after that they will have to find another way to access the Redford center. This is likely to involve removing some of the sage scrub to add a walking trail from Foothill to join the road that goes along the east side of the neck and allowing some vehicle access from Blaisdell Ave. Pitzer and the City are currently considering the least disruptive ways to address the issue.



**Pitzer is holding an outreach meeting for the Claremont community to see its plans for the Redford Conservancy, including access options, and comment on them Monday, June 27 at 6 pm in the Performance Space at the Broad Center.**

Questions/comments to [rcc@pitzer.edu](mailto:rcc@pitzer.edu)

You can see the plans at <http://pitweb.pitzer.edu/redfordconservancy/welcome/>

## **Has the promise to preserve the center part of the BFS (the TRP) been kept?**

***Rumors abound, but no public confirmation has been made. If the TRP is now permanently protected, why not say so? If it isn't, then why not? Please email the colleges and ask.***

→Wouldn't it be nice if the Colleges also preserved the 5.7 acres west of the TRP that Harvey Mudd returned to CUC?

And if you are an alum, perhaps you might mention that efforts to preserve the BFS could affect your decisions to donate.

CGU: President Robert Schult  
[rwschult@cgu.edu](mailto:rwschult@cgu.edu)

CMC: President Hiram Chodosh  
[hiram.chodosh@claremontmckenna.edu](mailto:hiram.chodosh@claremontmckenna.edu)

HMC: President Maria Klawe  
[klawe@hmc.edu](mailto:klawe@hmc.edu)

KGI: President Sheldon Schuster  
[sheldon\\_schuster@kgi.edu](mailto:sheldon_schuster@kgi.edu)

Pitzer: President Melvin Oliver(as of July 1)  
[president@pitzer.edu](mailto:president@pitzer.edu)

Pomona: President David Oxtoby  
[president@pomona.edu](mailto:president@pomona.edu)

Scripps: Interim president Amy Marcus-Newhall  
[amy.marcus-newhall@scrippscollege.edu](mailto:amy.marcus-newhall@scrippscollege.edu)

And for CUC: CEO Stig Lanesskog  
[stig\\_lanesskog@cuc.claremont.edu](mailto:stig_lanesskog@cuc.claremont.edu)

## Recent Photos



*(Clockwise: Lake, new acorns, pink buckwheat, sagebrush and oaks, bee house, Horkelia, deerweed, laurel sumac)*

### How big is big enough?

A field station is land left in its natural state for use in the study of complex interactions between plants and animals. The usefulness of such natural laboratories depends on size and shape. Extinctions occur frequently in small areas, due to smaller populations. The current 85 acres is just large enough to maintain reasonable stability in the existing ecosystems. Narrow shapes increase the amount of pollution by noise, air, water, and pesticides from surrounding areas, and increase the chances of competition from exotic (non-native) species, so the center bit of the BFS alone would not be sustainable.

### Who uses it?

The BFS is used by Claremont Colleges faculty and hundreds of students every year, as well as by many schoolchildren from Claremont and the surrounding areas. It has also been used by college classes from as far away as Long Beach, by scout troops, and by members of the public.

### What's there?

There are over 30 acres of the fast-disappearing coastal sage scrub community along with a number of species of state or federal concern. There is a stand of oak woodland in the north where water wells up along an earthquake fault, there is annual grassland slowly returning to coastal sage scrub in the east, and there is a one-acre, man-made lake excavated in 1978 which is a sanctuary for western pond turtles displaced by development.

**→ Since much of Claremont was originally covered with coastal sage scrub, it is a fascinating window into our past**



*“A tour of the property readily convinces visitors of the importance of keeping such a beautiful expanse of land, shrubs, and trees for scientific purposes .”*

Robert J. Bernard in “An Unfinished Dream” pg 708