

News from the



**FRIENDS OF THE
BERNARD
BIOLOGICAL
FIELD STATION**

Volume 23, No. 1, June 2022

Email to: friends@fbfs.org

Website at: www.fbfs.org

Meet the Inhabitants



Our Donation

We are delighted to announce that the Friends are donating \$5000 to the BFS to help with establishing the Ecological Walk.

Many thanks to all of you who have bid on items in our annual silent auctions. These funds have allowed us to make this donation.

If any of you would like to help fund the Walk as well, please let the Director know.

Photos

(clockwise from upper left; courtesy of Nancy Hamlett)

- Monarch nectaring on black sage
- Anna's hummingbird on redberry
- Song sparrow singing away on cattails at pHake Lake
- Spotted sandpiper on new dock at the lake
- Red-tailed hawk soaring over the BFS
- Checkered White feeding on mustard growing near purple penstemon
- Marine Blue on deerweed,
- Acmon Blue, again on deerweed

Bernard Field Station 2021-2022 Academic Year Recap

Wallace “Marty” Meyer, Director of the Bernard Field Station.

As we near the end of our first year back from campus closures, I wanted to provide a brief recap of our year, highlight some of its achievements, and provide an update on some of the things we are working toward.

Mission: The Bernard Field Station’s mission is to increase understanding and awareness of southern California’s terrestrial ecosystems through research, education, and outreach. While our primary focus is to provide unique hands-on educational and research opportunities for students from the Claremont Colleges, we also engage with local K-12 schools, other regional Colleges, and with many diverse community members to improve the ecological understanding vital to developing sustainable practices in the region.



Left--Advanced Animal Ecology class working in the field (photo from Nina Karnovsky). Center--Pitfall trap full of ground-dwelling insects (ditto). Right: Students processing soil samples to evaluate plant-soil biogeochemical features at the South Outdoors Classroom (photo from Charlotte Chang)

Teaching and Research: As we emerged from the pandemic, the BFS offered many opportunities for students to engage with southern California ecology. For example, during the 2021-22 academic year, the BFS hosted 34 different Claremont College courses and two courses from Cal State Fullerton. In addition to ecological and environmental courses, the BFS was also the site for a variety of art and design courses, my favorite being the EcoPoetry course whose capstone project was a poetry walk around the BFS. The BFS was also the site of diverse research efforts. Some used advanced technological approaches like taking multi-spectral photo data of plant assemblages using drones, while many used more classical observation approaches like catching and identifying bees and other pollinators on flowering plants to better understand how important various plants are to pollinator conservation. Unfortunately, our capstone K-12 program, Leadership in Environmental Education Program (LEEP), was canceled due to COVID concerns, but near the end of the academic year, we were able to offer opportunities for a variety of schools including Sycamore and Vista Elementary schools and the Webb Schools. It is my hope that all our K-12 programs will be up and running next year and that new programs will be developed with increased collaboration with the Redford Conservancy.

Published research: Throughout the pandemic, research at the BFS continued, though on a reduced scale, as much of the research is lead by our amazing undergraduates and much of the long-term project data are collected by undergraduate research technicians. Despite many of the professors allocating their major efforts towards keeping up with data collection, we were able to publish research papers this year that provide key conservation insights for southern California ecology and conservation:

1. Budischak, S.A., Halvorsen, S. and Finseth, F. (2022). Genomic heterozygosity is associated with parasite abundance, but the effects are not mediated by host condition. *Evolutionary Ecology*, <https://doi.org/10.1007/s10682-022-10175-8>.
2. Dartnell, S., Hamlett, N. and Meyer, W.M., III. (2022). Monitoring butterfly assemblages in southern California to assess the impact of habitat and climate modifications. *Journal of Insect Conservation* **26**, 149–162.
3. Garlick-Ott, K. and Wright, J.C. (2022). Factors Shaping Gender Role in the Freshwater Hermaphrodite Snail *Physella acuta*. *American Malacological Bulletin* **39**, 1–7.
4. Wendlandt, C.E., Gano-Cohen, K.A., Stokes, P.J., Jonnala, B.N., Zomorrodian, A.J., Al-Moussawi, K. and Sachs, J.L. (2022). Wild legumes maintain beneficial soil rhizobia populations despite decades of nitrogen deposition. *Oecologia* **198**, 419–430.
5. Loesberg, J.A. and Meyer, W.M., III. (2021). Granivory in California sage scrub: implications for common plant invaders and ecosystem conservation. *Plant Ecology* **222**, 1089–1100.
6. Thomson D.M., Meyer W.M., III, Whitcomb I. F. (2021). Non-native plant removal and high rainfall years promote post-fire recovery of *Artemisia californica* in southern California sage scrub. *PLoS ONE* **16**, e0254398.

Outreach: Our outreach efforts were also affected by COVID concerns. The volunteer program had only a few events this year. Every time we got the ball rolling, a new spike in cases followed (for updates on the program, check the BFS Volunteer webpage-- <https://research.pomona.edu/bfs-dev/volunteer/>), Also, for the 3rd year in a row, we did not host BFS Earth Day events where we have tours and activities for community members of all ages to engage with the BFS. Again, it is my hope that we will be able to host these events during the next calendar year.



The Ecological Walk: In an effort to provide increased opportunities for the local community to learn about southern California ecology and conservation, we remain focused on our multi-year effort to develop an “ecological walk” north of the new sidewalk in front of the BFS along Foothill Blvd. The interpretive ecological walk will provide opportunities for community members to learn about local ecosystems and native plants and will highlight examples of beautiful and sustainable landscapes created with local native plants. The best part is that it will be freely accessible to community members whenever they are ready to explore these topics. We have planted two of the thirteen sections (look for flags along Foothill Blvd), and intend to plant at least two more sections next year. Our goal after the plants get established, in 1 to 2 years, is that we will not water these plants again, creating a truly water-wise landscape. Still, much human effort is needed in the beginning to water the establishing plants, so we are slowly working on this. Please remain patient.

It is my sincere hope that everyone in the BFS community is well. I look forward to engaging with everyone next academic year.

All the best, Marty

Storm damage

Nancy Hamlett

On January 21 and 22, Santa Ana winds roared through Claremont, with the BFS weather station recording gusts > 60 mph. Although the BFS suffered less than many places in Claremont, some damage occurred. A few trees were broken or lost major limbs, and some large shrubs blew over. Several large trees from neighboring properties fell into the BFS, crushing the fence and blocking roads. Some research equipment was damaged but can be repaired.

Here are some photos of effects of the windstorm:



Next to the Foothill entrance driveway, the top of a large live oak sheared off. Close inspection revealed borer damage and rot at the point of breakage.

A tile blew off the roof of the Conservancy.

A very large pine tree fell from a neighbor's yard taking down the fence and blocking the driveway for the Redford Conservancy.

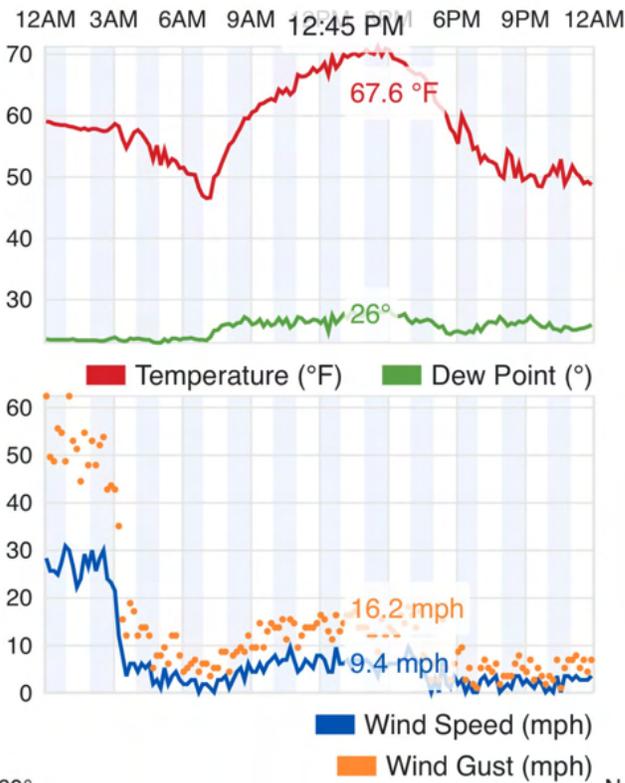
A large branch from a live oak fell on the ground in front of the Redford Conservancy.





A large laurel sumac blew down on the south shore of pHake Lake blocking access. Limbs were broken off many elderberry trees.

January 22, 2022



Screenshot of BFS weather station from January 22 showing very strong winds between midnight and 3 AM with several gusts over 60 mph.

Still no word from the colleges about their promise of permanent protection for the center part of the BFS (the Temporarily Restricted Property, the TRP)

Tours of the BFS

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

BFS Volunteer Days

Covid permitting, the first Saturday of the month, 10:00 am until noon, followed by a tasty pizza lunch. 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)

Claremont Garden Club

The Club is free and open to everyone interested in any type of gardening. Meetings are second Wednesday of most months, 6:30-8:30 pm in the Louise Roberts Room at the United Church of Christ, 233 Harrison Ave, Claremont. Talks start at 7pm. For more about the club: www.claremontgardenclub.org info@claremontgardenclub.org

Friends website

www.fbbfs.org
for past newsletters and a map showing which colleges now own which parts of the Field Station.

City of Claremont: www.ci.claremont.ca.us
P.O. Box 880, Claremont, CA 91711
City Clerk: 399-5460
Claremont Colleges: www.claremont.edu
The Claremont Courier : (909) 621-4761
114 Olive St, Claremont, CA 91711

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

*“Dedicated to Education
and the Environment”*

The BFS: A Facility of the Claremont Colleges

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. 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. The current 85 acres from College to Mills is just large enough to maintain reasonable stability in the existing ecosystems. The center bit of the BFS alone, which is all that is currently protected, would not be sustainable if Harvey Mudd, Scripps, and Claremont Graduate University build on the parts they have now purchased.

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 and for research by other institutions.

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