



## Highlights from the BFS Annual Report

([http://bfs.claremont.edu/publications/2014-15\\_Annual\\_Report.pdf](http://bfs.claremont.edu/publications/2014-15_Annual_Report.pdf) )

This first annual report highlights the critical role the BFS plays at the Colleges and in the greater Claremont and southern California community.

- **Claremont Colleges course and student use:** 6,644 user days, 24 courses.
- **Claremont Colleges research:** 26 research projects, 2 in preparation for publication.
- **Local K-12 students:** About 140 students in The Leadership in Environmental Education Partnership (LEEP); pilot program (see below) for Claremont 4<sup>th</sup> graders to visit the BFS and learn about local ecology.
- **The greater Claremont community:** Over 100 people at 2<sup>nd</sup> Annual BFS Earth Day activities; continuing volunteer program.
- **Use by institutions outside of the Claremont Colleges:** CalPoly Pomona, CSU Fullerton, UC Riverside, UC Davis, Arizona State University; two workshops attended by SoCal colleges on monitoring biodiversity in endangered sage scrub habitats.



## New K-12 program at the BFS!

The BFS is excited to announce expansion of a newly developed K-12 program. Last year three Claremont College students designed inquiry-based curriculum focused on the ecology of our native low elevation ecosystem (sage scrub) to inform students about the uniqueness of their local flora and fauna and the threats they face. This curriculum has three components: (1) an on-campus activity to introduce ideas and methods to prepare students for their visit to

## Sightings

- ✓ Orange clusters of ripening toyon berries (photo left)
- ✓ Evidence of students (photo left)
- ✓ Plywood removed to reveal lovely Infirmary windows
- ✓ Elegant grey-brown of Mourning Doves
- ✓ Bright green of yerba santa against yellow-green of dormant sagebrush
- ✓ The smell of laural sumac
- ✓ Harvester ants shutting up house for the winter
- ✓ Penstemons full of seeds
- ✓ Tiny yellow Lessingia flowers
- ✓ Scalebroom, pinebush, and coyote brush in bloom
- ✓ A mallard pair, motionless on a log, observing other ducks and coots on the lake
- ✓ Fat, brown sausages of cattail



flowers—and piles of cattails pulled out by BFS volunteers, a never-ending battle!

- ✓ Olives removed along entry road, fruiting near classroom
- ✓ Pearly everlasting rosettes, ready to grow in spring
- ✓ Scattered feathers in oak duff

the BFS, (2) a trip to BFS with a hands-on inquiry activity which compares the organisms found at their school to those found at the BFS, and (3) a follow-up, in-class assignment administered by the teacher to assess if educational concepts were learned.

Last year (Spring 2015), the students implemented this curriculum in three upper grade (4<sup>th</sup>-6<sup>th</sup>) classes at Sycamore Elementary School (~ 120 K-12 students total). Our program received excellent reviews from the teachers and students. With funding from the Henry David Thoreau Foundation, we plan to expand this program during the Spring 2016 semester in an effort to move closer to our ultimate programmatic goal: to offer opportunities for all 4<sup>th</sup> graders in the Claremont Unified School District to visit the BFS and learn about the ecology of Claremont and their role in it. Our wider goal, ambitious though pragmatic, is to educate, inform and inspire a conservation ethic in the next generation of citizens.

Registration for 4<sup>th</sup> grade classes will begin after the students hired and trained to administer the curriculum have identified their schedules for the 2016 semester. *(BFS Director Wallace Myers)*

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## **Update on the status of the Field Station**

- **CUC promise to preserve TRP has not yet been kept**

[www.cuc.claremont.edu/news/docs/AcquireFoothillBlvdProperty.pdf](http://www.cuc.claremont.edu/news/docs/AcquireFoothillBlvdProperty.pdf)

In 2011, Claremont University Consortium issued a press release stating that the Bernard Field Station (by which they mean the part designated in the lawsuit settlement as the “Temporarily Restricted Property”--map at [www.fbbfs.org](http://www.fbbfs.org)) would be permanently protected upon the sale of the east field to Pitzer College, Harvey Mudd College, and Scripps College. This has not been done. Emails to CUC have provided no information about this promise, and a letter mailed individually to all seven of the college presidents has gone unanswered.

→Please email the colleges and tell them that four years is long enough for plans to have been made—permanent preservation of this part of the BFS should be arranged now. The addresses for the presidents are:

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: Interim Presiden Thomas Poon  
[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)

- **HMC property in the west part of the BFS**

When Harvey Mudd College purchased its 12 acres of the east field, the college returned the 5.7 acres it owned on the western part of the BFS to Claremont University Consortium.

→Wouldn't it be nice if the Colleges added those acres to the center portion they have promised to preserve permanently?

- **Robert Redford Conservancy for Southern California**

The one positive aspect of the sale of the east field is the ability of Pitzer College to move forward with plans to renovate the Infirmary as part of the Robert Redford Conservancy. The college has said it will confine building to the area around the Infirmary and leave the rest of the area, which adjoins the TRP, in a natural state for teaching and research. Questions/comments to [rcc@pitzer.edu](mailto:rcc@pitzer.edu)

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



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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. 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”*

### • Foothill Master Plan

The City recently approved the Foothill Master Plan which calls for a sidewalk, lighting, plantings, bioswales, and a bike lane along the Foothill frontage of the BFS. The BFS Director will be involved in determining the details of this part of the plan so that disturbance to the BFS is kept to a minimum.

## Meet the Inhabitants



**Coyote Brush** (*Baccharia pilularis*) is in full bloom now at the BFS. The small flowers appear from August to December and are grouped into heads as in sunflowers. This is one of several species at the BFS that are dioecious, that is, the plants have flowers with either stamens or pistils, but not both. To get seeds, you need both male and female plants near each other. The photo at top left shows the shorter, rounder, yellowish male heads. The one at right shows the longer, silkier, white female heads. Groups of fine white hairs are attached to the seeds and aid in wind dispersal.

The plants at the field station grow into a loosely rounded shrub about 6ft tall and wide, but garden selections are available that are much shorter. The shrub is evergreen, with leaves under an inch long, wider at the tip than at the base, and most sport a few teeth along the edge. Small, waxy leaves reduce water loss. Plants are tough, resisting drought, fire, deer, and poor soil.

Coyote brush provides food and shelter for many native insects and birds, especially in the autumn. Native Americans used heated leaves as a poultice to reduce swelling, and a tea to combat poison oak rash. The wood was used for arrow shafts and houses.

### Micromoths

Walk through the BFS sage scrub on a warm day and you may notice clouds of tiny moths with a wingspan of less than 3/4 inch that take flight at your passing and seemingly disappear when they land.



*Rhamphura altisierrae* on buckwheat in the East Field at the BFS, August 2015. Photo by Nancy Hamlett.

These “micromoths” are inconspicuous and often overlooked — even by lepidopterists. They are nonetheless extremely important — they comprise about half of all known moths and have a huge diversity of habitats and life styles. In addition, the larvae of some are significant pests, causing damage to crops and man-made goods (like the clothes moth). California is home to about 1,675 species and about 20% of these have not yet been given scientific names. Nearly all micromoths are concealed feeders: you don’t see them out on the surface of plants; rather they mine into leaves, bore roots, stems, or seeds; cause plant galls, or create shelters of leaves drawn together with silk. Most are host plant specialists; they depend upon on a specific plant or a group of related plants.

Although they have not been systematically studied at the BFS, we’ve so far recorded 10 species of micromoths in 7 different families, and they are a fascinating bunch. Here’s a sample of some of the cool ones we’ve seen at the BFS:

**Rhampura altisierrae** (Family Scythridadae--Flower Moths)

This rare moth has only been reported five times previously — four times in California (most recently in 1982) and once in Montana. Purple Nightshade (*Solanum umbelliferum*), which grows at the BFS, is reported to be a host plant.



A Diamondback Moth (*Plutella xylostella*) on California Brittlebush (*Encelia californica*) behind the field house at the BFS, March 2015. Photo by Nancy Hamlett.

**Plutella xylostella** (Family Plutellidae--Diamondback Moth)

The Diamondback Moth originated from Mediterranean Europe but has now spread worldwide. It’s a significant pest of Brassicaceae, the plant family that includes cabbage, broccoli, and mustard--they can eat all the mustard they want at the BFS!



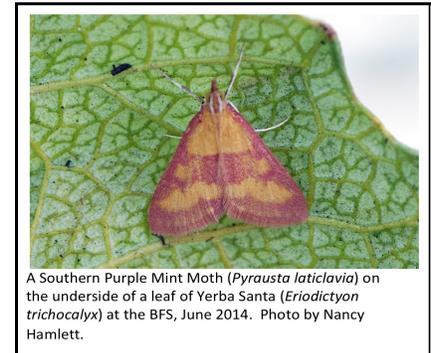
A Bird Dropping Moth (*Ethmia arctostaphylella*) on Yerba Santa (*Eriodictyon trichocalyx*) at the BFS, May 2015. Photo by Nancy Hamlett.

**Ethmia arctostaphylella** (Family Depressariidae – Flat-bodied Moths)

The Bird Dropping moth is most frequently found on Yerba Santa (*Eriodictyon trichocalyx*). Adults rest by day on the Yerba Santa leaves, remarkably resembling what they are named for.

**Pyrausta laticlavia** (Family Crambidae – Grass Moths)

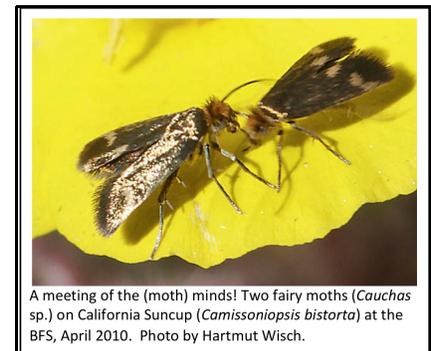
The Southern Purple Mint Moth is scattered throughout the US, mainly in the south, but appeared in the San Francisco Bay area and Sacramento Valley in the 1990s. Larvae eat plants in the mint family, including rosemary, so you might find one in your garden!



A Southern Purple Mint Moth (*Pyrausta laticlavia*) on the underside of a leaf of Yerba Santa (*Eriodictyon trichocalyx*) at the BFS, June 2014. Photo by Nancy Hamlett.

**Cauchas sp.** (Family Adelidae – Fairy Moths)

This fairy moth is one of the undescribed California species and is found on Suncups (*Camissoniopsis sp.*) throughout Southern California. We see it every spring at the BFS!

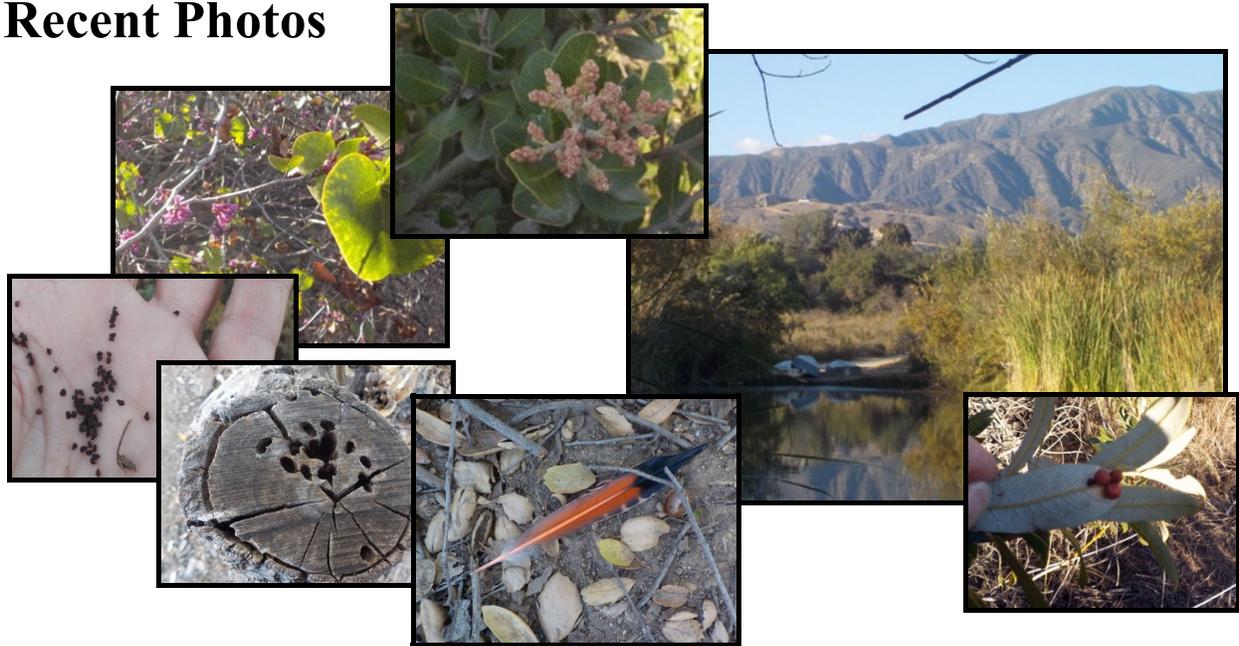


A meeting of the (moth) minds! Two fairy moths (*Cauchas sp.*) on California Suncup (*Camissoniopsis bistorta*) at the BFS, April 2010. Photo by Hartmut Wisch.

We are sure that we have only begun to describe micromoth diversity at the BFS since no one has systematically looked for them—our 10 species were all just documented as incidental observations. The University of California Hastings Reservation in Monterey County has recorded 130 species of micromoths, so there is clearly an opportunity here for someone — could it be you? If you’re interested, please contact the BFS Director!

(Article by Nancy Hamlett-more info in the blog at [bfs.claremont.edu](http://bfs.claremont.edu) )

## Recent Photos



*(From clockwise from left: penstemon seeds, redbud, lemonade berry, lake, willow galls, feather, insect holes?)*

### 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