

Friends of the Bernard Biological Field Station  
P.O. Box 1101  
Claremont, CA 91711  
*The Friends is a non-profit, grassroots organization.*

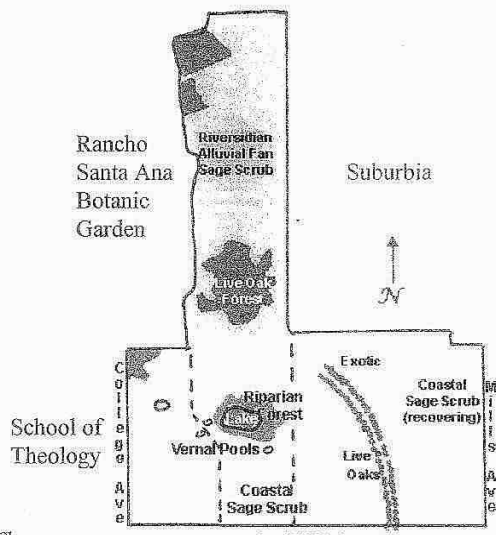
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*“Dedicated to Education  
and the Environment”*

**City of Claremont:** www.ci.claremont.ca.us click on “contact us”  
P.O. Box 880, Claremont, CA 91711 City Clerk: 399-5460  
**Claremont Colleges:** www.claremont.edu  
**The Claremont Courier :** 1420 N. Claremont Blvd., Suite 205B,  
Claremont, CA 91711 Phone: 621-4761  
**Inland Valley Daily Bulletin:** 2041 E. Fourth St, Ontario CA 91764



There are 3 parts to the BFS:

Owned by HMC	←	Owned by CUC	→
		Temporary protection	No protection

### 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?

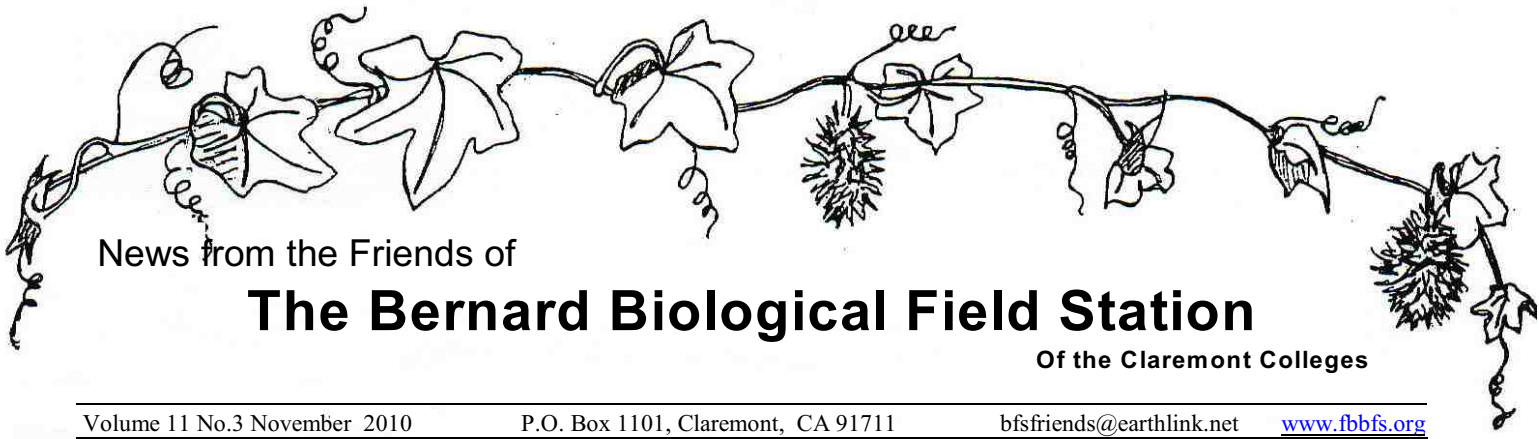
The BFS is used by Claremont Colleges faculty and hundreds of students every year, as well as by many schoolchildren from Claremont and the surrounding areas. It has also been used by college classes from as far away as Long Beach, by scout troops, and by members of the public.

### 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.

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

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.



News from the Friends of

# The Bernard Biological Field Station

Of the Claremont Colleges

Volume 11 No.3 November 2010

P.O. Box 1101, Claremont, CA 91711

bfsfriends@earthlink.net

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

## Favorite Quote:

*"The struggle to save the global environment is in one way much more difficult than the struggle to vanquish Hitler, for this time the war is with ourselves. We are the enemy, just as we have only ourselves as allies."*

- Al Gore

## Meet the Inhabitants

### Butterflies



**Acmon Blue**

This is just one of the butterflies found at the BFS. To see this and many more in splendid color, go to the BFS website ([bfs.claremont.edu](http://bfs.claremont.edu)).

Butterflies come in many sizes, shapes and colors. They are the adult part of a life cycle that begins when a female lays an egg on a host plant. This hatches into a larva, commonly called a caterpillar. Like all insects, butterflies and their larvae have an external skeleton, so if the larvae is to grow in size, it must make a new, bigger one folded inside the old one, split out of the old one, and expand the new. This is repeated several times until the caterpillar is ready to become a pupa, the next stage in the life cycle. The caterpillar produces a case called a 'chrysalis' which it attaches to something. Inside the chrysalis, most of the caterpillar's cells dissolve. The ones that are left multiply, differentiate, and reform into a butterfly.

## Sightings

- ✓ Rusty metal coyote sculpture just inside the entrance gate
- ✓ California sagebrush sprouting new gray-green leaves in response to a little rain
- ✓ Pinebush bursting into golden-yellow glory
- ✓ Felty light gray leaves of white sage punctuating the scrub
- ✓ The first groups of flower buds on lemonade berry
- ✓ Bunches of orange berries like fireworks on the toyon
- ✓ Coots clashing with each other
- ✓ Mockingbirds flashing white as they swoop to the top of an elderberry
- ✓ The last few red and orange leaves on poison oak
- ✓ Lizards luxuriating in the sun on an unseasonably warm day
- ✓ Bees and bee flies diligently gathering nectar
- ✓ White trumpets atop blue-green mounds of *Datura*
- ✓ Ground squirrels darting across the paths
- ✓ A woodrat nest deep inside a lemonadeberry
- ✓ Goldbacked fern unexpectedly appearing along a path by the lake
- ✓ Tour guides in training learning the shrubs
- ✓ Owls hooting and swooping on unseen prey

This amazing process where the juveniles look totally different from the adults is called “complete metamorphosis” and is carried out not only by butterflies and moths, but also by ants, bees, flies and beetles. This process means the adults and juveniles don’t compete for the same food sources. Here is a little more info about some of our BFS butterflies:

The **Great Purple Hairstreak**, *Atlides halesus*, sips nectar from Scalebroom and other flowers at the BFS. With its iridescent blue and brilliant orange spots and body, the Great Purple Hairstreak is very striking even if it isn’t very purple and is only “Great” compared to other hairstreaks – it’s small compared to swallowtails. This butterfly’s range is the southern US, but it’s relatively rare in California – this sighting was only the second from California submitted to BugGuide. Adults take nectar, and larvae feed on mistletoe, live oak, and western sycamore.

Another lovely butterfly is the **Western Green Hairstreak**, *Callophrys affinis*, a native to the west; its range extends from southern British Columbia south to Mexico and east to Colorado. It’s mainly found in scrub and chaparral, where deerweed and buckwheat are its primary food plants.

A delightful sight is the **Sara Orange-Tip**, *Anthocharis sara*, with white wings and, of course, an orange spot on each tip. The adults visit plants in the mustard family, as well as California Buckeye, Yerba Santa, Blue Dicks, and Fiddleneck. Eggs are blue-green when laid but turn bright red. Larvae feed primarily on buds, flowers, and fruit, rather than leaves.

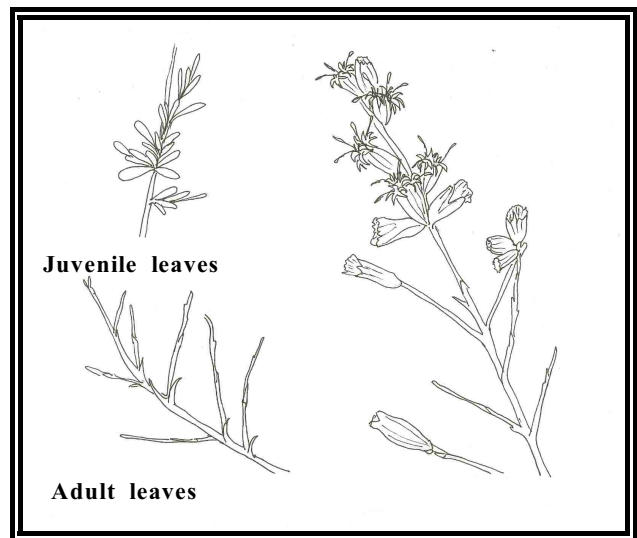
On the BFS website, you can see a beautiful female **Red Admiral**, *Vanessa atalanta*, laying eggs on stinging nettle. These butterflies have a 2 inch wingspan and are mostly black, with a bright orange-red patch. When the eggs hatch, the caterpillars roll the leaves around themselves and seal it with silk to hide from predators. The pupa may also hide in leaves.

## Sustainable Claremont

[sustainableclaremont.org](http://sustainableclaremont.org)

**Energy saving:** Join CHERP to reduce your energy use and cost.

**Get your landscape certified** as sustainable. Form and instructions on the SC website.



## Scalebroom

*Lepidospartum squamatum*

Scalebroom is a shrub native to California and Arizona which grows in sandy and gravelly soils such as in washes and other alluvial areas. Plants grow to about 6 ft tall and when out of flower look very much like a pile of old broom straws. Young branches have leaves that are large, gray, and felty. These juvenile leaves are followed by tiny, green, adult leaves most of which lay flat against the stems like scales, hence the common name.

The plant blooms from October to December and has masses of small yellow flowers arranged in heads spaced out along the ends of the branches. The one-seeded fruits develop with white hairs attached which catch the wind so the seeds blow to new areas to colonize.

Stanley Spencer reports: “Scalebroom is adapted to withstand and recover from the extreme conditions caused by flooding in its native environment. Its adaptations include deep roots to anchor the plant in case of heavy scouring of the sediment substrate, and a large underground stem (or “rootstock”) that stores energy and enables resprouting if the above-ground stem is broken off or if the plant is buried as a result of flooding.

“Because of the energy stored in the rootstock, scalebroom is able to exert tremendous pressure at the stem tip. This adaptation allows scalebroom to survive under heavy sediment, and may also enable it to raise or break through man-made structures under some circumstances. In 1989/1990, homes built by California Communities, Inc. in Corona, California were damaged when growing shoots of scalebroom plants raised cement slabs. In some cases the raised

corners of the slabs cracked, and small shoots grew through the cracks. When the sections of the slabs were removed, portions of large scalebroom plants were found, including rootstocks measuring up to 4 inches in diameter. An investigation revealed that extremely large scalebroom plants (up to 8 feet tall) had existed within the footprint of the affected houses, and that the developer had not removed the below-ground portions of these plants (Keith Clark, Building Official with City of Corona, "Invasion of the Killer Weed", undated report)."

### **Update on College plans relevant to the BFS**

- **The City approved** the parcel map dividing the part of the BFS owned by HMC (see map) into four pieces. HMC will keep two and has agreed to sell the other two to Claremont Graduate University so it too can build there at some point. Neither has plans to build at this time.
- **Pitzer College** is proposing to buy the Infirmary and ten acres around it for a new institute. The plans are to renovate the building and restore/preserve the habitat. This has not been approved by the Consortium yet and the details are not worked out. We will keep you posted.

### **Stephen Dreher**

It is with considerable regret that I write to let you know that Stephen Dreher is leaving his position as BFS manager. He will be missed and we wish him all the best.

Because he lived on the Field Station, Stephen was able to see a lot that the rest of us couldn't about how our native organisms behave. Here is a recent email he sent:

"As I write this email, a Cooper's Hawk has chased a mourning dove directly into my kitchen window. Poor choice on the dove's part as the hawk now stands atop the knocked out bird. That was a rush!...

" Well, for some reason, Mr. or Ms. Cooper's Hawk decided to reign over the catch by sitting atop a house wren box and not devouring the prey. This went on for 20 or more minutes. By that time Dan from the Utility Shop at CFS showed up for a

trash pick-up. After meeting him and loading the trash, we noticed the Cooper's back on the ground eating the dove. A couple minutes later a large adult Red Tail Hawk sailed into the coast live oak right above the Cooper's. After gazing upon the Red Tail for a bit, Dan and I went our separate ways while the Red Tail remained in the oak. Maybe another 20-30 minutes went by and that hawk took off.

"A Pitzer student arrived to help organize a meeting. While we worked in the kitchen, we saw the Cooper's hawk return, nurse its way to the wall the kitchen window is part of, uncover the dove it had hidden from the Red Tail, retrieve the meal and, clapping it with its yellow talons, cart the dove away. He or she most decidedly saw us watching the moves.

"A major cause of wildlife mortality is simple hunger. Today's drama was just another day for a BFS critter. The rest of us go to Von's."

**BFS Tours:** contact Nancy Hamlett, the interim projects manager, at (909) 607-3811 or [nancy\\_hamlett@hmc.edu](mailto:nancy_hamlett@hmc.edu)

**BFS Powerpoint:** Email the Friends if your group would like to arrange for a presentation about what is on the BFS and who uses it

*If you would like to receive occasional information about the BFS between paper newsletters, please let us know at*

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



*"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