

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

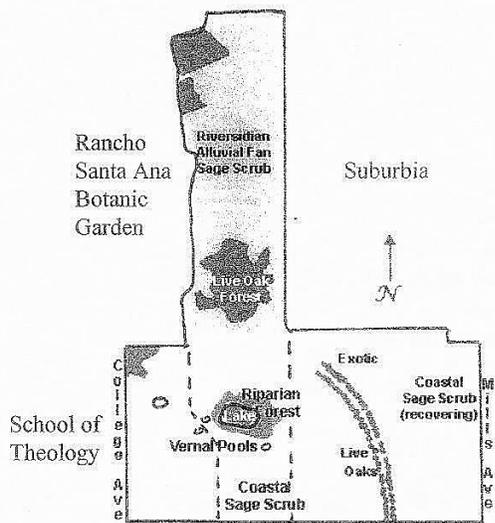
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*“Dedicated to Education  
and the Environment”*

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**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?

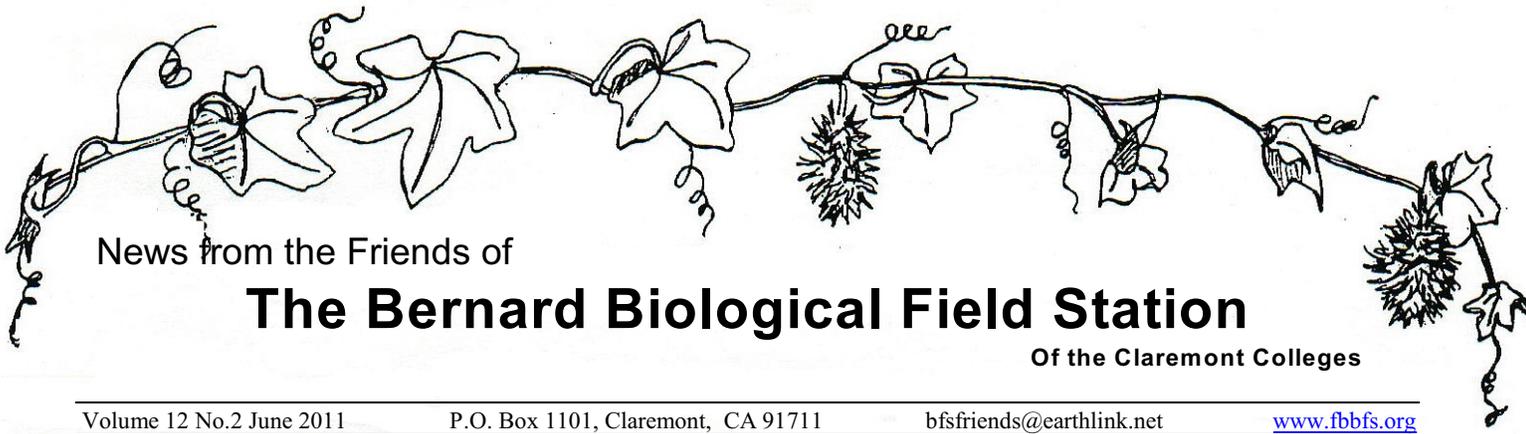
The BFS is used by Claremont Colleges faculty and hundreds of students every year, as well as by many schoolchildren from Claremont and the surrounding areas. It has also been used by college classes from as far away as Long Beach, by scout troops, and by members of the public.

### 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 12 No.2 June 2011

P.O. Box 1101, Claremont, CA 91711

bfsfriends@earthlink.net

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

**Come march with us in  
the 4<sup>th</sup> of July parade!**

**Stop at our booth to find out where to meet**

## Meet Dr. Jennifer Gee:

**Interim Manager for the BFS**

(From the BFS website)

Jennifer is an evolutionary biologist and field ecologist who did her Ph.D. work at Princeton and subsequently held postdoctoral positions at Cornell and Harvard. She spent her postdoctoral training primarily conducting experiments aimed at understanding the neural mechanisms of the mating behavior of quail. She then spent several years in the laboratory using molecular, cellular, and developmental genetics approaches to study the precise mechanisms which lead to differences in finch beaks.

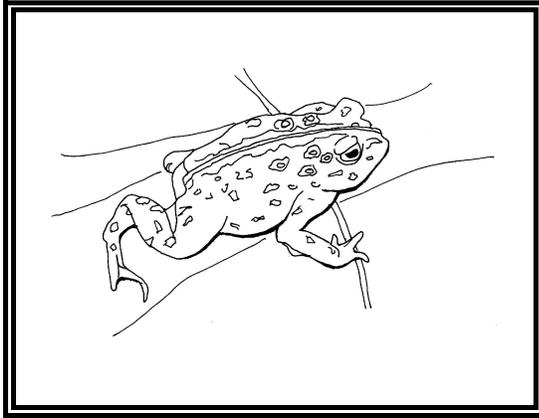
Jennifer was a Visiting Assistant Professor at Whitman College where she taught Evolutionary Biology, Conservation Biology, and Genetics. She moved here (in February) and is currently conducting field research on speciation at UCR's Boyd Deep Canyon Research Center, studying natural populations of California and Gambel's Quail that hybridize in that area.

We are lucky that the Interim Manager position fit so well with her current situation. Pictures of Jennifer at work can be seen on the BFS website blog. You can call her at (909) 398-1751 for info about tours and volunteer opportunities.

## Sightings

- ✓ 6" tall drifts of bright pink conchalagua and sapphire blue eriastrum mingling with abandon along the pathways
- ✓ a 2 ft California racer slithering across the road in the neck, stopping to peer at me
- ✓ a new beehive in the base of an elderberry
- ✓ an unexpected group of the rare wedge-leaf honeydew in the shade of an olive
- ✓ hundreds of western toad tadpoles in the ponds in May, followed by a cross-country exodus of tiny toadlets in June
- ✓ clustered white buds of pearly everlasting rustling as you pass
- ✓ coveys of California quail ka-kawing, an alliterative dream
- ✓ dashing spikes of red delphinium, punctuating the landscape
- ✓ golden yarrow looking like patches of sunshine among the shrubs
- ✓ lush new leaves on the yerba santa
- ✓ towering lilac flowering stalks rising from the gray rosettes of white sage
- ✓ bunches of green fruit on the elderberries, promising masses of food for the birds
- ✓ cascades of orange, red, or black fruit on the golden currants
- ✓ a hawk sitting on a telephone pole, surveying then swooping
- ✓ silky orange and yellow cactus flowers abuzz with bees
- ✓ pretty purple nightshade and tall yellow wand mullein
- ✓ enthusiastic summer research students!

## Meet the Inhabitants



### **Southern California Toad**

*(Anaxyrus boreas halophilus)*

The California Toad, like most toads, walks rather than hops, and lives in burrows. These toads are generally nocturnal and so are hard to find. Adults range from 2 1/2 to 5 inches long, and are greenish, tan, reddish brown, dusky gray, and yellow on top with a light-colored stripe down the middle of the back and a pale throat. They have rusty-colored warts, usually located on dark areas. There are surface glands which can produce a more or less poisonous substance which deters some predators (but not others who find them quite delicious!) and can be harmful to pets. These toads are generally quiet, with a sound likened to that of chicks peeping (a recording of their sound can be found at CaliforniaHerps.com, where the photo on which this drawing is based can also be found).

California Toads historically ranged from north central California through Baja, and from sea level up to 11,000 ft. However, a number of populations have now disappeared or are in decline, most likely due to destruction of their natural environments. They mate somewhere between January and July. The females lay two strings of eggs (up to 16,000 per female!) embedded in a jellylike matrix at the edge of a body of water. The dark brown, one inch tadpoles hatch and graze on the algae in the water. It takes a couple of months for them to develop into froglets. This year, several hundred tadpoles were transferred from the original pool on the HMC part of the BFS to the new pool south of the lake. Although a few are found around the edges of the lake, the vast majority

of tadpoles inhabit the vernal pool and must metamorphose before the pool dries up in late May. The tiny frogs, only about an inch and a half long, walk into the coastal sage scrub and find or make a burrow to inhabit. They catch an assortment of invertebrates with their sticky tongues and eventually return to the vernal pool to lay their eggs. We won't know if the frogs return to the new pool for several years. There are some good pictures of tadpoles and froglets on the BFS website ([bfs.claremont.edu](http://bfs.claremont.edu)).



### **Wedge Leaf Honeydew**

*(Horkelia cuneata ssp puberula)*

Horkelia is a smallish perennial plant that dies down in the fall and reasserts itself in the spring. This subspecies is an uncommon plant and is listed by the California Native Plant Society as seriously endangered in California, although this listing carries no legal protection. We have two locations of these plants, one near the lake and one near Foothill. As they are not easy to find, we might have some others as well. Our population is one of the few known in Los Angeles county.

Horkelia leaves form a grayish-green ferny mound up to 18" tall, and are 6-10" long. There are 5-12 leaflets with large teeth on each side of the midrib. Plants are more or less hairy and sticky. The white flowers appear in spring and are about 1" across with 5 blunt-tipped, narrow petals. The flowers are held above the leaves in open clusters and are visited by many different pollinating insects. These pollinators are currently under study at the BFS as part of a post-graduate investigation.

A preparation made from Horkelia roots was used by Native Americans as a blood purifier.

## Three more firsts!

Three more species new to science have been discovered at the BFS (none is named yet). One is a little moth (*Cauchas* species) seen on *Camissonia* (suncups), and the others are two little mites (*Parateneriffia* species). The mites are incredibly fast and a video of them can be seen on the BFS website blog (type “mites” in the search box).

To see some great photos, go to BugGuide and put Bernard Field Station in the search box. Many of the photos are the first ones of particular species on the site and some are the first pictures of living specimens on the web!



*“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.”*

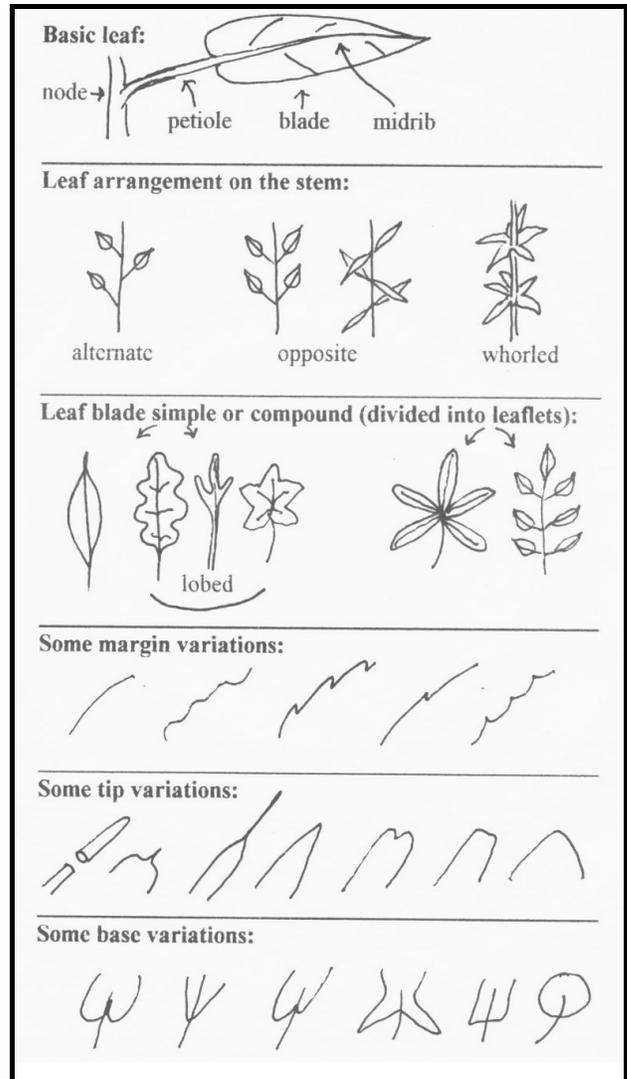
## Keeping current:

To receive updates, get the newsletter online, or learn about volunteer work days, join the email list (send a request to [bfsfriends@earthlink.net](mailto:bfsfriends@earthlink.net))

- There is no more information available about Pitzer’s plan to buy about 14 acres of the BFS immediately to the east of the protected part (TPR) of the field station from the infirmary to Foothill, or about the rumored desire of other colleges to buy some of the eastern part.
- The tract map for the HMC-owned western part was recently adjusted so that the portion to be sold to CGU now has some Foothill frontage.
- A gate into the BFS has appeared in the fence on the western border along College Ave (into the HM- owned/future CGU-owned part).
- The EIR for building parking lots and sports fields for CMC and Pitzer in the college-owned quarry east of Claremont Blvd is moving forward. As part of this, biological consultants have been surveying the BFS, probably in conjunction with an analysis of the cumulative impact of losing the natural habitat currently found in the quarry.

## Leaves:

Next time you are out hiking, or just strolling in your garden, you might want to see how many of the following leaf variations you can find, and how much they vary on a single plant and between plants of the same species. And of course the leaf may be shiny or dull, hairy or not, stiff or flexible, broad or narrow, green, purple, red or variegated, flat or with the edges curved up or down, bumpy or covered with white powder, odorless or aromatic, sticky or dry, etc. The list is long!



## Favorite Quote:

“The human race is challenged more than ever before to demonstrate our mastery - not over nature but of ourselves.”

*Rachel Carson*