

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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The Claremont Courier : 1420 N. Claremont Blvd., Suite 205B,
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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?

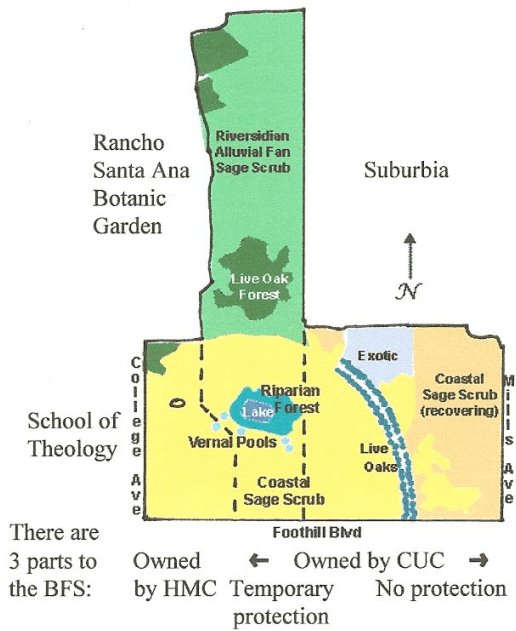
The BFS is used by Claremont Colleges faculty and hundreds of students every year, as well as by many schoolchildren from Claremont and the surrounding areas. It has also been used by college classes from as far away as Long Beach, by scout troops, and by members of the public.

What's there?

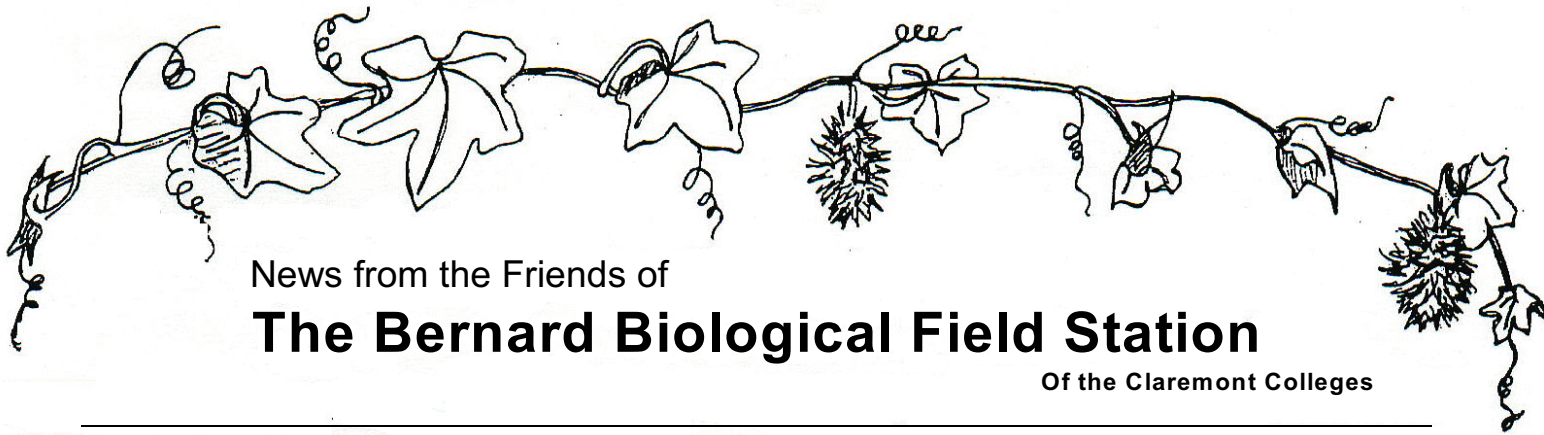
There are over 30 acres of the fast-disappearing coastal sage scrub community along with a number of species of state or federal concern.

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.



There are 3 parts to the BFS:



News from the Friends of

The Bernard Biological Field Station

Of the Claremont Colleges

Volume 11 No 1 February 2010

P.O. Box 1101, Claremont, CA 91711

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Find a bargain at the auction!

Our annual arts and crafts silent auction will be taking place during March at the Folk Music Center in the Village. Please stop by and bid on one or more of the lovely items! This is our major fund-raising event and the proceeds support the newsletter, the Art Competition, and our educational activities.

Lichen Species New to Science Discovered at BFS

(photos on the BFS website)

(From the press release): Kerry Knudsen, Curator of Lichens at the University of California Riverside Herbarium, has discovered a species of lichen at the BFS that has never before been identified anywhere. The new lichen, *Lecanora munzii*, grows on dead wood of chaparral and coastal sage scrub plants, especially California Sagebrush (*Artemisia californica*). This inconspicuous brown lichen produces an unusual chemical – gyrophoric acid – that is being investigated for its potential to fight bacterial infections, promote wound healing, and treat Type II diabetes.

Like all lichens, *L. munzii* is a fungus that harbors within its tissues a photosynthetic partner (either an alga or a cyanobacterium) that produces food for the fungus. The fungus in turn provides moisture and shelter, and light regulation for the algal partner. Lichens grow slowly and occupy sites that are too harsh or barren for other organisms.

Because *L. munzii* grows on dead wood, it occurs only in old-growth chaparral or coastal sage scrub that has not burned frequently, and

increased fire frequency throughout Southern California has made this type of habitat rare. *L. munzii* is, however, abundant in old-growth sage scrub at the Field Station. The BFS has been designated as the ‘type locality’ – the geographical location where the species was originally discovered. The lichen has so far been found in only five other sites – all in southern California.

“The Bernard Field Station harbors a rich though inconspicuous flora of epiphytic and ground-dwelling lichens, mosses and liverworts, typical of old-growth coastal sage scrub. We’re very grateful to Kerry for his excellent work in describing this species, and thrilled that the species is named in honor of Dr. Munz”, says Pomona Professor of Biology, Jonathan Wright.

“It is exciting to have a new species discovered right in our own back yard,” adds Tim Cox, Board member of the Friends of the Bernard Biological Field Station. “What you can find even in small portions of natural habitat is truly amazing. I’m sure the BFS has many more surprises in store for all of us.”

The new species was published in the December 8th issue of *Opuscula Philolichenum*: K. Knudsen and J. C. Lendemer. 2009. Two new species of *Lecanora* with gyrophoric acid from North America Vol 7: 21-28



“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

Favorite Quote:

"Is civilization progress? The challenge, I think, is clear; and, as clearly, the final answer will be given not by our amassing of knowledge, or by the discoveries of our science, or by the speed of our aircraft, but by the effect our civilized activities as a whole have upon the quality of our planet's life - the life of plants and animals as well as that of men."

Charles A. Lindbergh

Sustainable Claremont

sustainableclaremont.org

The Natural Habitat and Biodiversity Action Group would love to have you join us! Currently we are working on natural habitat presentations for the schools, a GIS map for our natural areas, and educational material for the Wilderness Park, among other projects. There's lots to do and good company doing it, so please feel free to come to a meeting (7pm on the first Wednesday of the month at 845 N. Indian Hill Blvd). Email (sschenk@jsd.claremont.edu) for more info.

As you may know, Sustainable Claremont is organizing talks called the Dialog Series. The first concerned landscaping with native plants; the second considered Claremont's water issues; the third set the background for the Energy Retrofit Working Group (more info below). Ones are in the works on the Copenhagen Conference, green building, the BFS, and waste management. Check the website calendar, the Claremont Calendar, and the Courier for info.

The Energy Retrofit Working Group is seeking homeowners interested in reducing their energy use and cost in the most efficient ways. If you are interested, email Freeman Allen at cf1allen@aol.com

Teachers and Group Leaders

To arrange a tour

call the station manager

Stephen Dreher, (909) 447-5052

Powerpoint Presentation

Send us an email if your group would like to arrange for a presentation about what is on the BFS and who uses it

Meet the Inhabitants



Nevin's Barberry

Berberis nevinii

Nevin's barberry is a lovely ornamental shrub which can grow up to 8 feet tall and 10 feet wide, although normally it is smaller. The stems are covered in closely packed, stiff, 3-5 inch, gray-green leaves which usually have five leaflets. There are sharp points along the edges of the leaflets which can be painful if you grab them. In March and April the stems are covered with masses of small, bright yellow flowers, followed by loads of brilliant red fruits about 1/4 inch wide. The flowers attract pollinators and the fruit is a favorite of birds and small mammals.

This is a good garden plant and is available at some native plant nurseries. Planting it in gardens is likely to keep this federally-endangered species from being lost. Most of its previous habitat has succumbed to development and off-road vehicles. There are fewer than three dozen sites where it has been reported to occur (outside of gardens), and probably only 20 of those are original. The total number of plants in the wild is probably fewer than 500. There are at least 10 plants on the BFS. One of these was planted near the infirmary and two others may have been planted along the fence. The others seem to have appeared naturally and the plants are reproducing, albeit slowly. It is not known if the species has always been on the BFS or if animals brought in seeds from specimens planted at the botanic garden next door. Either way, the field station population is expanding.



Western Gray Squirrel
Sciurus griseus

Gray squirrels are native to our area but are becoming rare. These squirrels weigh one to two pounds and are 1 ½ to 2 ft long, from nose to tip of tail. They are silvery gray on top, with a pale underside. The tail may have black flecks in it and is luxuriantly bushy. The ears are relatively large, with no tufts on top.

Squirrel nests are made of leaves and twigs bound with grass and lined with moss or shredded bark, and can be found in the top portions of trees. Sometimes young squirrels can be seen sleeping spread out along a branch. Gray squirrels do not hibernate but do become less active in the winter.

Acorns and pine nuts, along with berries, fungi, young buds and insects, are the main foods of gray squirrels. Squirrels forage mostly during the morning and afternoon and, although they search for food on the ground, they like to move from site to site through the trees. They collect more seeds than they can eat and bury the excess. Although they are pretty good at finding their ‘buried treasure’, a significant number of seeds are never found and grow into new trees.

Gray squirrels mate from December to June and one to five kits are born about six weeks later, in a nest often lined with fur from the mother’s tail. The young stay in the nest for six months or more, and their tail remains ‘furred’ until they are adult.

When a squirrel sees something it views as a threat, such as a bobcat, hawk, dog, or possibly you, it will give a hoarse, barking shout. Others will join in and the noise can be quite considerable! Threatened squirrels spread their tails wide which may help to camouflage their shape from predators.

Gray squirrels have become extinct in some areas due to habitat loss, disease, and competition from the reddish brown fox squirrels which are spreading through more and more of California. Fox squirrels breed more quickly and use a wider range of food

sources than do gray squirrels. Within urban Claremont, gray squirrels still find havens at the Botanic Garden, the Cemetery, and the BFS--but the first fox squirrel at the BFS was seen last year.

Gardeners:

Photo guide to native plants for your garden can be found under the Constructed Landscape page on the Sustainable Claremont website.

→ To receive messages about interesting news in between newsletters, just send us your email address.

News such as: Upland has just produced the Notice of Preparation and Initial Study for the EIR related to College plans to build on the quarry. If you want to be kept informed about this, email Karen Peterson, kpeterson@ci.upland.ca.us

♥ Sightings ♥

- ✓ hawks circling lazily overhead
- ✓ tufts of long, hairy amsinckia leaves, promising fields of yellow flowers
- ✓ new plants of gold-backed fern, rare at the BFS
- ✓ toad eggs in the original vernal pool
- ✓ a mosaic of small, flat plants underfoot in the dirt roads
- ✓ pussywillows with tufted seeds drifting in the breeze
- ✓ children eager to know the names of everything
- ✓ college students fascinated by ecological relationships
- ✓ scat full of bones; scat full of seeds
- ✓ bright yellow trumpets on the golden currants
- ✓ masses of creamy white flowers on the wild cucumber vines climbing the oaks
- ✓ new leaves on the sagebrush, breaking summer dormancy
- ✓ coots and ducks almost strutting on the lake
- ✓ aromatic, velvety leaves of white sage
- ✓ bright yellow and orange lichens, as well as the brown *Lecanora*
- ✓ fluffy pinebush fruits using me for dispersal
- ✓ shiny, new leaves emerging on poison oak
- ✓ sunlight shimmering on the lake, breaking up reflections of billowing white clouds
- ✓ hummingbirds darting from bush to bush