

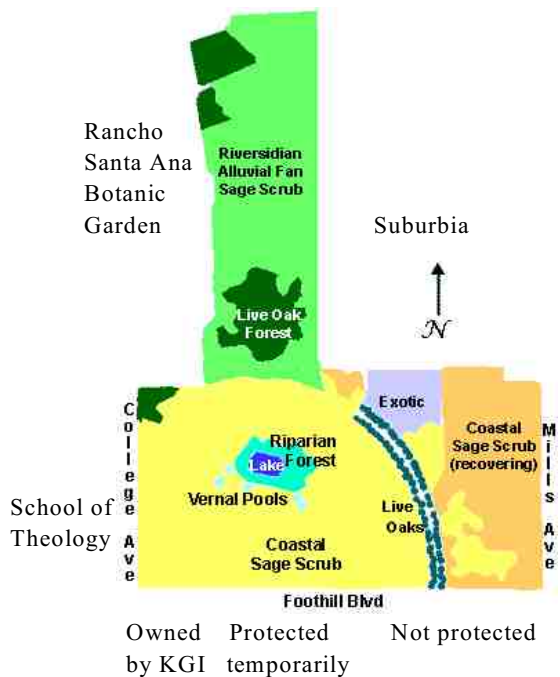
Friends of the Bernard Biological Field Station
P.O. Box 1101
Claremont, CA 91711
The Friends is a non-profit, grassroots organization.

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www.fbbfs.org

*“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



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.

Who uses it?

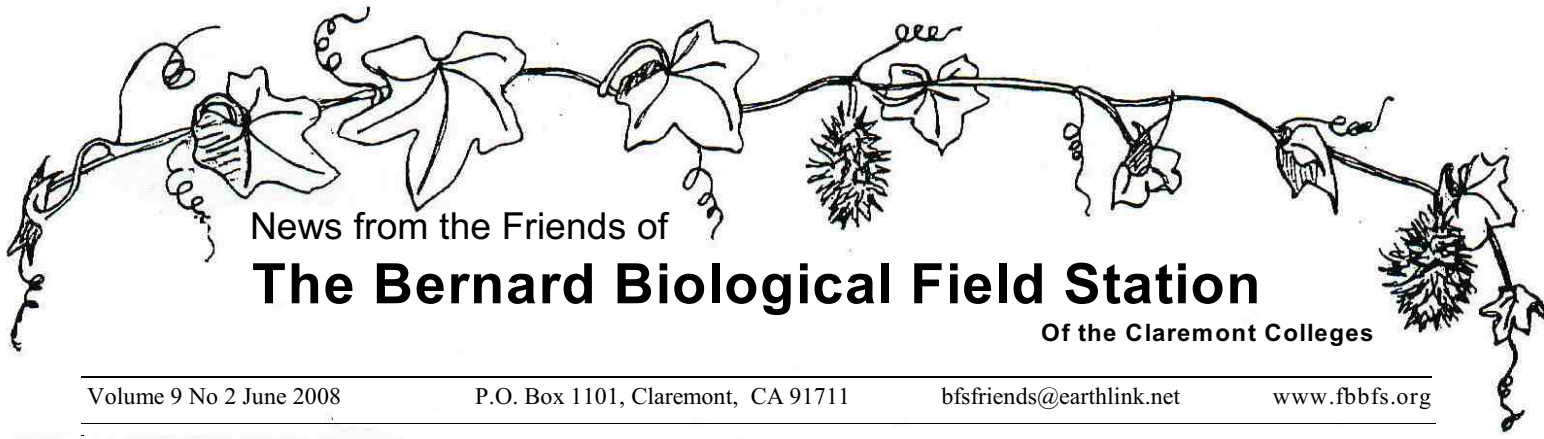
The BFS is used by Claremont Colleges faculty and hundreds of students every year, as well as by many schoolchildren from Claremont and the surrounding areas. It has also been used by college classes from as far away as Long Beach, by scout troops, and by members of the public.

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 9 No 2 June 2008

P.O. Box 1101, Claremont, CA 91711

bfsfriends@earthlink.net

www.fbbfs.org

New Elementary School Program



This spring Mountain View and Chaparral 5th grade classes visited the BFS several times as part of a new program at the BFS. Students from the Claremont Colleges PALS program organized the visits. The children learned about geology, flowers, aquatic life, and leaf predation. This was the beginning of what we hope will be a long term program offering opportunities to enhance the elementary science and math curriculum. We also expect that the data the students collect will add to our understanding of the dynamics of different aspects of the ecology at the field station as it is collected over the years.

→Teachers and Group Leaders

If you are interested in joining in the fun of making and analyzing long-term observations, please let us know .

(Dr. Susan Schenk, sschenk@jsd.claremont.edu).

If you would prefer to arrange a one-time visit to introduce students to some aspect of Claremont’s native ecology, this is also very welcome.

To arrange visits, call (909) 625-8701

☛Sightings☛

- ☛ drifts of the starry blue flowers and needlelike leaves of *Eriastrum*
- ☛ yellow, orange, and coral cactus blooms, filled with beetles and bees
- ☛ flashes of white bunny tails
- ☛ painted lady butterflies sipping nectar from small, white cups of yerba santa
- ☛ fat yellow bees nestled in purple penstemon flowers, waiting out the cloudy morning
- ☛ tiny, limpet-like orange snails collected from the lake
- ☛ crusts of yellow and orange lichens on dead branches
- ☛ fancy gray and maroon fingers of liverworts next to mats of moss
- ☛ lovely spires of verbascum with red-centered bright yellow blossoms
- ☛ round, scarlet galls on the willow leaves, housing sawfly larvae
- ☛ excited laughter of elementary school children
- ☛ branches of golden currant bending under the weight of yellow, red , and black fruit
- ☛ quail sounding “kuh-kaw-kaw” as they erupt from cover
- ☛ lizards lazing in sunny spots
- ☛ beautiful leaves of gold-backed fern, emerging briefly for the rain
- ☛ pink balls of milkweed flowers hosting Monarch caterpillars
- ☛ young hawks watching from the oaks.

Sustainability

The City Sustainability Task Force has developed a set of proposed actions. These are in the categories of Resource Conservation, Environmental and Public Health, Transportation, Built Environment, Housing and Economic Sustainability, Open Space and Land Use, and Community Outreach.

These actions are now being considered for inclusion in the new budget. Those not included will presumably form part of the Sustainability Plan which will be written over the summer and into the fall. During this process the draft will be available for comments from the public.

→ This plan will guide what happens in Claremont for the foreseeable future in terms of economic, social, and environmental sustainability. Please look it over and let the Task Force and the City know what you do and do not like and if you think there is anything that should be included or omitted. This document will guide our future so it needs to be the best it can.

CUC drops plan to build on BFS

Claremont University Consortium decided not to continue with its plan to move the physical plant facility on 1st St and the personnel department on 9th St to the western portion of the BFS, citing financial reasons. They will instead continue the original plan of remodeling the 1st St facility and move personnel there. This was of course the most environmentally conscious and sustainable decision, as well as the most educationally sound one.



BFS website

The BFS website is always being improved but this summer should see some major changes in structure and content, making it even easier to search the site.

We now have over 100 plant pages with photos and continue to add. Most of the plant species will soon have photographs taken at the BFS showing the whole plant, flowers, and leaves, and we are working on the fruits.

bfs.claremont.edu



“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

★ Join us in the 4th of July parade ★

★★★ Thanks to all those who helped at the Folk Music Festival!!! ★★★

Meet the Inhabitants



Croton californicus

Croton californicus is common in coastal sage scrub but it is rather unassuming and easy to overlook. It is an open, shrubby plant under 2 ft by 2 ft. It has slender stems with leaves spaced relatively far apart. The leaves are up to 2 inches long, narrow, smooth-edged and rounded at the tip. The leaves and stems are covered in tiny hairs which have star-like tips. These hairs reflect the light and make the stems and leaves feel slightly fuzzy and look pale with a slightly golden cast.

Croton belongs to the Euphorbiaceae and blooms from May to August. It has small, pale yellow flowers. They are not showy and the groups of flowers look somewhat like sets of knots. Male and female flowers are found on separate plants and the female ones produce small, knob-like fruits.

Croton californicus is the host plant for the strikingly patterned black and red shield bug, *Pachycoris stali*. The adults eat croton seeds and females lay bright red eggs on the backs of the leaves. The eggs are all laid next to each other with the heads of the embryos oriented up. Very unusually for an insect, the mother stays and guards the eggs and young nymphs from predators such as the native ants.

Our local Tongva-Gabrielleno called this plant “Tutel” and used it medicinally. A thin poultice was made from all the parts of the plant to alleviate chest pains. The leaves and stems were mashed and placed in the ear for ear-aches. For congestion, a hot infusion was drunk, and for asthma and fevers, the steam from boiled leaves opened up the lungs



Ladybug

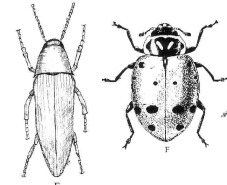
The story goes that, in Europe in the middle ages, farmers prayed for help fending off crop-destroying pests. Aid arrived in the form of swarms of coccinellid beetles and the people promptly called them “the beetles of our Lady”. These insects feature in nursery rhymes and in superstition, and are thought to be lucky.

Most ladybugs are bright red with black spots but these beetles in the family Coccinellidae may also be yellow, orange, or white. The number of spots varies with the species and the head and legs are usually black. The bright colors warn predators like lizards and birds that they are poisonous. Adults can also ooze a yellow, oily and smelly liquid from their leg joints which repels predators, and also often ‘play dead’ until an attacker loses interest. Some species are black, brown or gray and spot-less, very different from the ones with which you are likely to be familiar. Most are ferocious predators but some, like bean beetles, are herbivores and can cause crop damage. Like all beetles, the forewings have become hardened into structures called ‘elytra’ which protect the membranous wings underneath when the beetle is not flying.

Our common ladybugs eat aphids, scale insects, mites, and mealybugs and are therefore well-appreciated by gardeners. During its life, a single ladybug may eat as many as 5000 aphids! In the spring, females lay from a few to hundreds of eggs depending on the species, choosing spots near aphids. Some of the eggs are infertile and these seem to be insurance that the larvae will have something to eat if nearby aphids are scarce when they hatch. The larvae are often black and orange and look like small, spiky, snub-nosed alligators. They are also voracious aphid-eaters. It takes 4-7 weeks from egg to adult and there is usually only one generation a year. In mild climates, the beetles overwinter, and some species move in large groups up mountains to hibernate. Masses of these can be found at Mt. Baldy. In the spring they emerge ready to mate.

Common Insect Orders

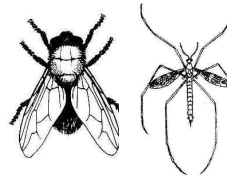
Insects have a head, a thorax (with six legs attached to it) and an abdomen. All have an exoskeleton and most have four wings. They are the most common animal group with around a million species, and show enormous variety in form. In some the adults look completely different from the larvae going through a ‘complete’ metamorphosis. In other groups the juveniles look much like the adults.



Coleoptera (beetles)

These have their forewings hardened into ‘elytra’ which protect the flying wings. They have chewing mouthparts.

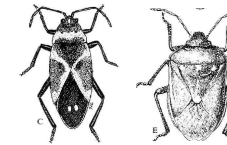
→ Ladybugs, June bugs, mealworms



Diptera (flies)

Flies have one pair of wings. The second pair have become balance organs called ‘halteres’. They have sucking/piercing mouthparts.

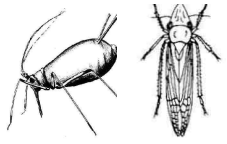
→ Houseflies, mosquitos, bee flies



Hemiptera (true bugs)

Bugs have the top part of the forewings thickened and the ends transparent. The wings form a “V” at the shoulder. They have a proboscis for piercing/sucking. Some authorities include homoptera here.

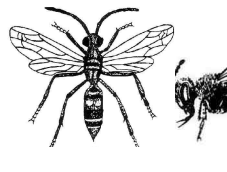
→ shield bugs, water bugs, bedbugs



Homoptera (aphid relatives)

Winged aphids may produce wingless offspring. They stick their proboscis into plants and suck sap. Hoppers have wide heads in proportion to the body.

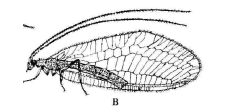
→ scale bugs, tree hoppers, cicadas.



Hymenoptera

Most of these insects have very narrow waists and many have stingers.

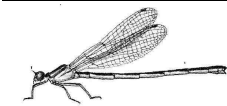
→ bees, wasps, ants, sawflies



Neuroptera

These insects have intricately net-veined wings and chewing mouthparts.

→ lacewings, antlions, snakeflies



Odonata

Long, narrow wings which are not folded at rest. Chewing mouthparts.

→ damselflies, dragonflies



Orthoptera

Wings are folded along the back at rest and hind legs are enlarged for jumping. Many rub wings against each other or legs to make sounds.

→ grasshoppers, crickets, katydids