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: 111 S. College Ave, Claremont CA 91711
Phone: 621-4761
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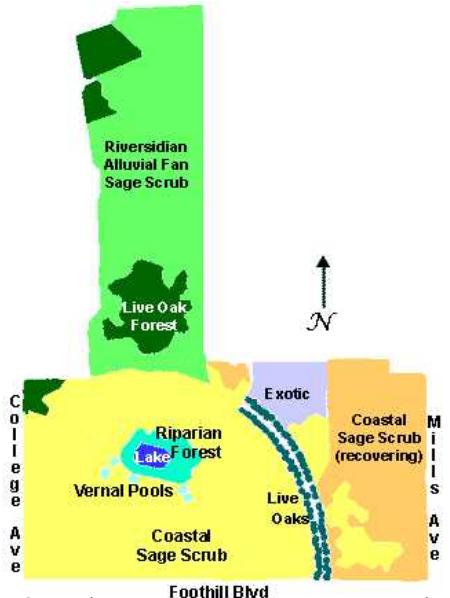


How big is big enough?

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.

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 7 No. 2 June 2006 P.O. Box 1101, Claremont, CA 91711 bfsfriends@earthlink.net www.fbbfs.org

✓✓✓Sightings

- ✓ Elementary school students enthusiastically learning about the native landscape.
- ✓ Starry, sapphire carpets of *Eriastrum*.
- ✓ Redtail and Cooper's hawk nests high up in trees
- ✓ Long stems of calabazilla snaking across the ground, with large, gray-green, triangular leaves and yellow squash blossoms.
- ✓ Lizards--whiptails, fence, alligator, side-blotched–sunning and skittering.
- ✓ Hundreds of tiny native toads leaving the vernal pool for homes further afield in the BFS.
- ✓ Swaths of blue and purple chia flowers mixed with purple nightshade and pink wishbone flower
- ✓ Silky, red and yellow flowers on cholla and beavertail cactus.
- ✓ Ruddy ducks, mallards, and coots: coots diving for items to use in nest-building.
- ✓ Slim, elegant, blue damselflies darting, mating, laying eggs on floating cattails.
- ✓ Various species of aphids, and of ladybird beetles to eat them: checks and balances.
- ✓ Creamy white brushes of cherry blossoms, full of bees, beetles, and other nectar lovers.
- ✓ Spiky, oval, bright-green wild cucumber fruit, beginning to dry. Soon to shoot out the large seeds (if the woodrats don't eat them first).
- ✓ Harvester ants flourishing in the fire roads
- ✓ Tall spikes of bright red delphinium beginning to punctuate the many-greened landscape.
- ✓ Flat-topped umbels of tiny cream or pink flowers beginning to cover the buckwheat, creating an image of sea-foam.
- ✓ Anna's, Allen's, black-chinned hummingbirds: some flashing, diving, territorial over golden currant bushes.

Come march with us in the 4th of July parade!

Stop at our booth to find out where to meet

Johnson's Pasture Purchase

If you are a property owner, you should have received a ballot in the mail concerning the proposed assessment district to purchase Johnson's Pasture. If not, you can pick one up at City Hall. Please be sure to send it in.

The CGU Housing Project

The fence along north College Ave has now been moved. Some of the coastal sage scrub on the western edge of the Field Station was lost, but we were able to reduce this from what was originally planned.

Mining

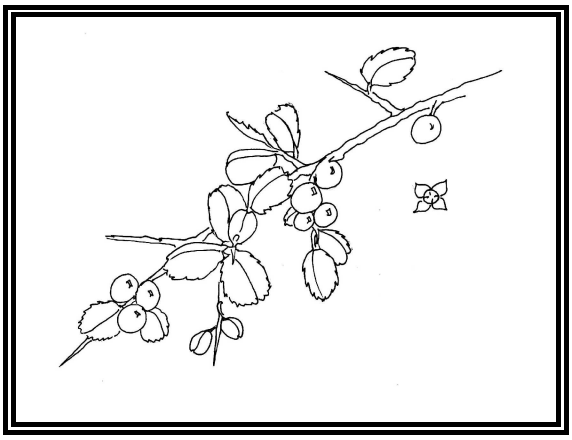
The City has formulated a mining ordinance in accordance with the direction given by the State Mining Board. This will be reviewed by the City Council. You can email the City to ask about the text of this.

General Plan Update

The City has now revised the preliminary draft of the new General Plan. The new draft can be seen on the web (www.ci.claremont.ca.gov) or you can purchase a CD from City Hall. Hard copies are available for reading at City Hall, the Hughes Center, the Joslyn Senior Center, and the library. Comments will be taken on the draft until October. The associated environmental impact report should be available in the next few weeks, with 45 days to review it. The Planning Commission will consider the public's comments, suggest revisions, and then send the draft to the City Council for final approval. The City hopes to have the new Plan approved by December.

The wording and contents of this General Plan will determine whether or not future projects are approved, so it should clearly reflect the vision of the people who live in Claremont. Please look at the sections concerning Open Space in particular. If you have comments, send letters to the Planning Commission, with copies to Belle Newman. The address of City Hall is on the back of this newsletter and email can be sent from the City website.

Meet the Inhabitants



Redberry

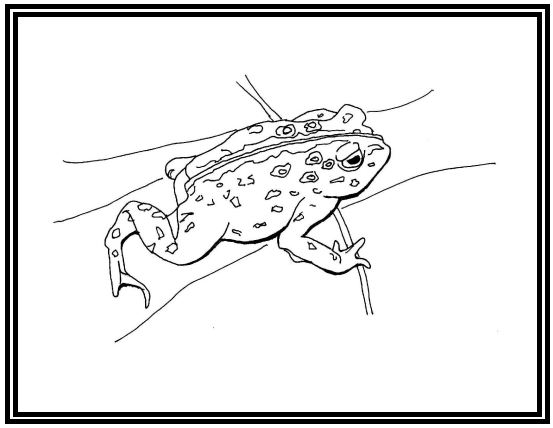
(Rhamnus crocea)

This plant, with its bright red berries, can be found along dry washes and canyons in coastal sage scrub, chaparral, and in oak woodlands. It is common at the BFS. Redberry is a woody shrub growing about 6 ft by 6 ft, with gray-brown bark and many branches with stiff twigs, sometimes thorn-tipped. The evergreen leaves are quite small, under ½ inch long, oval, thick, with tiny teeth and a somewhat rounded or indented tip. The flowers are tiny, with no petals but with four yellow sepals, and they occur in small clusters. The plants are either male, with flowers that produce pollen, or female, with flowers that produce eggs. When an insect carries pollen to a female flower, a red berry is produced.

The Gabrieleno-Tongva call this shrub Hunarkwahah or "Bear, he eats this" because, in spring, Hunar the bear feasts on the redberry blossoms and in the fall he returns for a second feast, this time of the berries. Both bear and human recognized that this shrub provides food. For the Tongva, it also provided a flavoring when pounded into meat, fish, and quail.

Redberry was also known to be a powerful medicinal plant. Father Junipero Serra called this shrub "the Sacred Bark" (Cascara Sagrada) because of its medicinal uses, especially as a cathartic. This medicinal quality was important for the Tongva. Roots and bark were boiled into a decoction for internal soreness. This decoction was also used for colds and coughs. The leaves were burned and the fumes inhaled for headaches and for rheumatic pain. Ripe berries were often pounded into a poultice and applied to sores. The sap was used to cure warts and ringworm.

Redberry was important in many ways to the native people who used to live in what is now Claremont.



California Toad

(Bufo 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 21/2 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. At the BFS, mating takes place

early in the year. 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. There are some good pictures of this year's crop of tadpoles and froglets on the BFS website (bfs.claremont.edu).

Botanical miscellanea

Picture keys are everyone's favorites, but sometimes you may need to use what is called a "dichotomous key" to identify plants. These keys consist of a list of descriptions organized in pairs. In each pair you choose the description that fits your specimen and then go to the next description indicated. Eventually you will be given a name. For instance:

1 a) Leaves alternate.....2
b) Leaves opposite.....10
2 a) Margin entire (leaf edge smooth).....3
b) Margin toothed.....5

If your plant has alternate leaves you would go to 2 and then decide if the edge is smooth (entire) or toothed. If toothed, you would go to 5 and make another choice. Eventually you might arrive at something like

7 a) Midrib partly red .....Toyon
b) Midrib not red.....8

Most keys, such as the Jepson Manual, depend greatly on flower and fruit structure because these vary less than plant structure or leaf size and shape. Because plants cannot move they need to be flexible enough to survive variations in light, water, and soil nutrients, not to mention loss of parts to predators, so the number of branches and size of leaves varies, making these difficult characteristics to use. However, if a plant is not in flower, vegetative keys (ones not based on reproductive characteristics) are often useful. 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.

Teachers: To arrange a visit, call (909) 624-6661 or fill out a use form online

Basic leaf:

node
petiole blade midrib

Leaf arrangement on the stem:

alternate opposite whorled

Leaf blade simple or compound (divided into leaflets):

lobed

Some margin variations:

Some tip variations:

Some base variations:

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!

"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. Bemard in "An Unfinished Dream" pg 708