

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

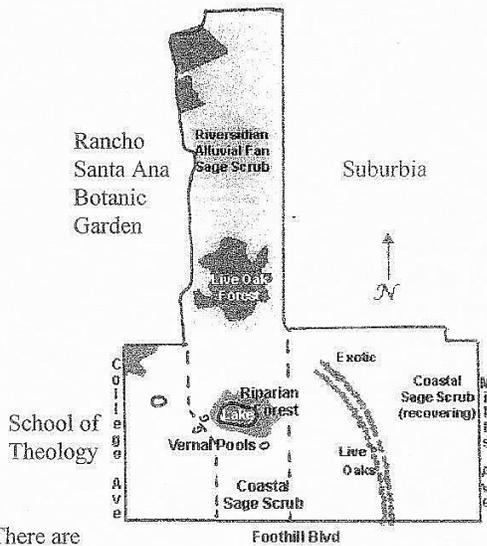
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*“Dedicated to Education
and the Environment”*

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There are 3 parts to the BFS:

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

Note: western part now owned by CGU and HMC; eastern part to be sold to Pitzer, HMC and Scripps

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?

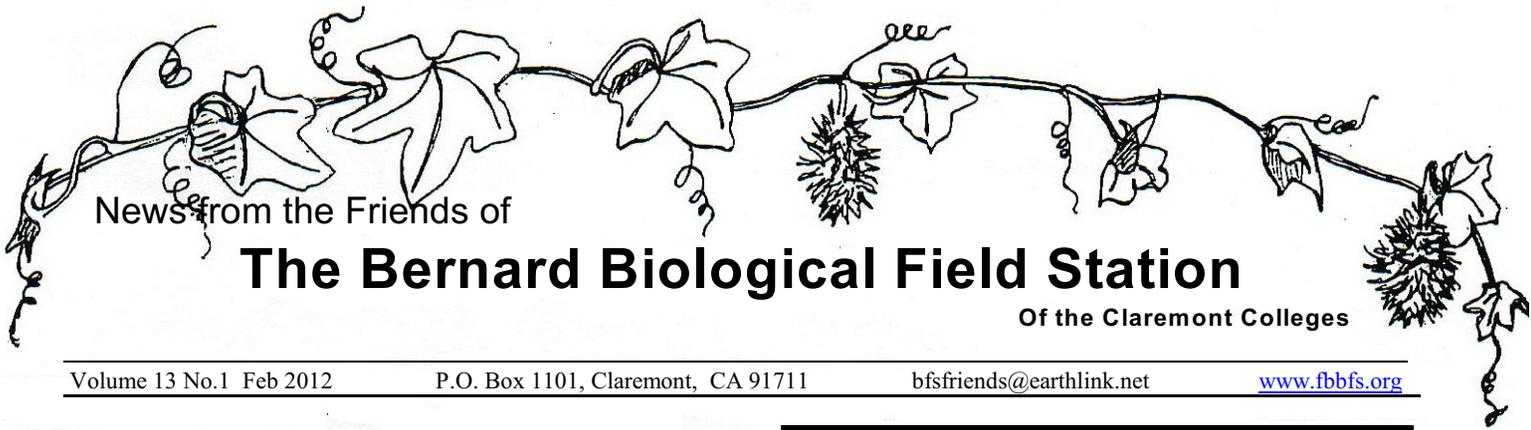
The BFS is used by Claremont Colleges faculty and hundreds of students every year, as well as by many schoolchildren from Claremont and the surrounding areas. It has also been used by college classes from as far away as Long Beach, by scout troops, and by members of the public.

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 13 No.1 Feb 2012

P.O. Box 1101, Claremont, CA 91711

bfsfriends@earthlink.net

www.fbbfs.org

Annual Silent Auction

Our yearly auction will be held once again at the Folk Music Center, 220 Yale Ave, from March 3 to March 31. This year the items will center on Claremont artists so please stop by and make a bid. The auction provides funds for this newsletter and other FBBFS activities so we need your support.

Sightings

- ✓ bright yellow blossoms on the golden currants
- ✓ matts of small mosses and liverworts in damp shady places
- ✓ spreading patches of gold-backed fern
- ✓ tiny, native snails ringing the old pond
- ✓ coots sailing on the lake
- ✓ hawks gliding in spirals, looking for lunch
- ✓ catkins bursting into fuzzy pussy willows
- ✓ pink buds on the lemonade berries
- ✓ ground-nesting bees busily digging homes
- ✓ tour groups learning and laughing

BFS Volunteer Days

The BFS is now holding regular volunteer workdays on the first Saturday of every month (and some extra days during the spring). Even though called “workdays” they are really “work mornings”, typically 9:00 or 10:00 a.m. until noon, followed by a tasty pizza lunch for the volunteers. The focus for the spring is removing invasive plants (see the “Invasive Plants” article), but volunteers have also picked up trash and cleared trails. You can see photos of the hardy volunteers on the BFS blog (click “News” at www.bfs.claremont.edu).

Announcements of upcoming workdays will be sent to the Friends email list. If you have any questions or would like to be added to the BFS volunteer list, please contact the BFS Volunteer Coordinator, Nancy Hamlett (hamlett@hmc.edu) or 909-964-2731.

Invasive Plants at the BFS

→What is an “invasive” plant?

A plant that thrives and spreads aggressively outside its natural range is termed invasive. Some plants that evolved in one region of the globe can flourish, crowding out native vegetation and the wildlife that feeds on it, when moved (usually by humans) into a new habitat. These foreign invasive species can gain an advantage in their new location since the insects, diseases, and foraging animals that naturally keep them in check in their native range are not present.

→What are the impacts of invasive plants?

The economic impact of invasive plants is enormous. In California, invasive plants increase wildfire potential, reduce water resources, accelerate erosion and flooding, threaten wildlife, degrade range-, crop- and timberland, and diminish outdoor recreation opportunities – impacts that are estimated to reach into billions of dollars. Over \$82 million is currently spent each year in California for control, monitoring, and outreach.

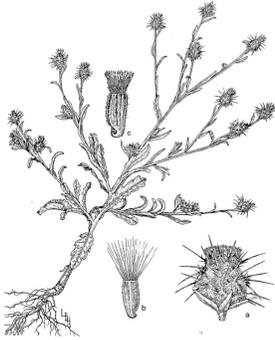
In natural areas, invasive plants can crowd out the native plants and wildlife, and some are inedible or even toxic to native animals. They can thus cause severe population declines and seriously reduce biodiversity. Some change ecosystem processes such as hydrology, fire regimes, and soil chemistry.

→What invasive plants are at the BFS?

The California Invasive Plant Council lists more than 200 plants considered invasive in California. Fortunately, only about 10% of these have been found at the BFS. Some, like Tree-of-Heaven (*Ailanthus altissima*) and Milk Thistle (*Silybum marianum*), were detected when they first appeared in isolated patches and have been eradicated. The most numerous invasive plants at the BFS are non-native grasses, mustards, and thistles. Of these, the most problematic is Tocalote (*Centaurea melitensis*,

also called Malta Starthistle), a Mediterranean native that was brought to California during the Spanish mission period, probably as a contaminant in wheat, barley, or oat seed. Tocalote can form dense stands that displace native plants and form prickly barriers to animals and people. This thistle reduces seed production in at least one native plant, and long-term ingestion of tocalote causes a lethal disease in horses. Tocalote at the BFS appears to be spreading from

disturbed areas into the more intact plant communities, and we are hoping to repel this advance.



Tocalote (*Centaurea melitensis*) – the most problematic invasive plant at the BFS. From *An Illustrated Guide to Arizona Weeds* by Kittie F. Parker, The University of Arizona Press, Tucson, 1972

→What can you do?

- Educate yourself. Get info from the California Invasive Plant Council. (<http://www.cal-ipc.org/>)
- Don't plant invasive plants! Check a plant's invasive potential before using it in your home landscape.
- Come to a BFS Volunteer Day and help us attack invasive plants at the BFS.

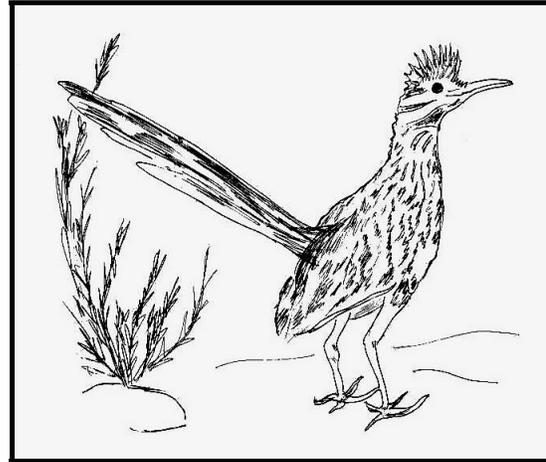
Update on the division of the BFS

We now know that Harvey Mudd is buying the part of the BFS that contains the entry road (see photo in last issue or on website to see divisions) and Scripps will be sold the easternmost 12 acres. HMC has said it has no plans at the moment to restrict use of the road. However, if access is barred, a new road will be needed to get to the Infirmary (the site of the proposed Pitzer institute) as well as to the outdoor classroom and the field house. This would require cutting a new road through the coastal sage scrub and would reduce the habitat further.



“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



Greater Roadrunner
Geococcyx californianus

We thought Roadrunners had disappeared from the BFS but there have been recent sightings! Knowing what's in an area depends in part on luck and in part on looking frequently.

These birds would rather run than fly and have been clocked at 15 mph! They are about 22" long and are brown and white. They have four toes, two pointing forwards and two pointing back so their tracks look like Xs. They have a crest of feathers which they can lower or raise, and generally keep their tails angled up. They do not go “beep beep” like the cartoon roadrunner, but make a rattle or a cooing noise like a dove. During the night, their body temperature drops to save energy and during the day the birds bask in the sun to warm up. They eat lizards, snakes, small rodents, some insects, other bird's eggs, and occasionally fruit and seeds (mostly cactus).

A male roadrunner may offer a tasty lizard to his intended as he courts her. Pairs stay together in their territory all year. The eggs are laid over a number of days and the males sit on the eggs to incubate them. The young hatch over a period of days too so a nest may contain offspring of different sizes. The bigger ones get the most food and so have the best chance of survival, especially in lean times. Roadrunners are very good parents and spend considerable time teaching the young how to survive in the coastal sage scrub.

BFS Director Search

One of the terms of the lawsuit settlement of 2001 was that there would be a Director for the BFS. It's been a long time coming, but three strong candidates have been interviewed and we should know who the new director will be by the next issue of the newsletter.

Inflorescence types

Soon our native plants will be blooming as well as the ones in our gardens, so here is some information about the types of flowers you will see. Sometimes flowers grow one on a stalk, but many times they grow in groups. Some common inflorescence types are listed below. **Note: simpler types can be combined so that you have, for instance, a panicle of heads, or a raceme of umbels.**

Catkin: Male or female flowers only, arranged on a pendulous stalk (willow, oak)

Corymb: Flowers arranged alternately on a stalk, but all at the same height due to different length pedicels, giving the group a flat-topped appearance (yarrow, lacecap hydrangea)

Cyme: Flowers arranged like a corymb, except that the flower cluster blooms from the center outwards and the main stalk is always terminated by a flower (valerian, cinquefoil, apple)

Cyme, helicoid: One-sided, coiled, resembling a fiddle-head (fiddleneck, phacelia)

Head: Cluster of flowers without pedicels, all on top of a single receptacle. In daisy-type flowers, there is often a central section of flowers without petals (disc flowers) surrounded by a ring of single-petalled flowers (ray flowers). The whole group is sometimes mistaken for a single flower. All the flowers may be disc or ray. (thrift, sunflower)

Panicle: Flowers arranged on a branched stalk (grapes, toyon)

Raceme: Flowers with short pedicels arranged on an unbranched stalk (tomato, monkeyflower)

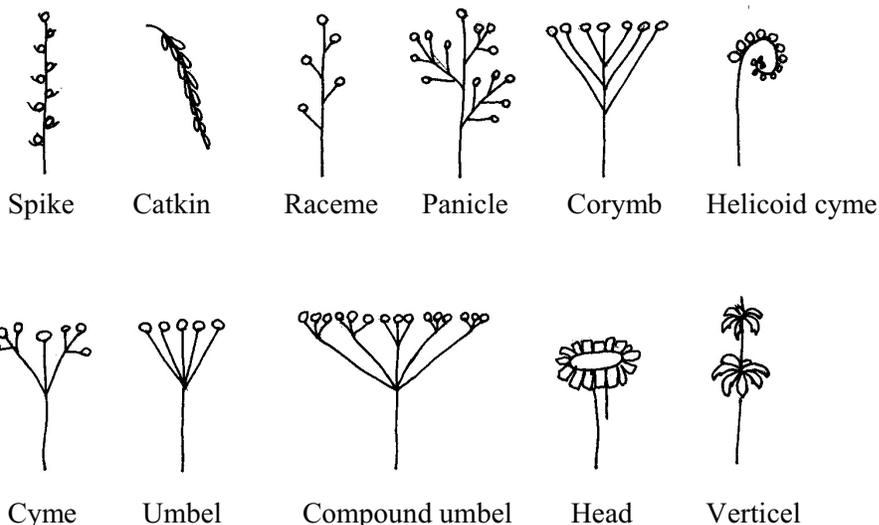
Solitary: One flower which terminates an apex, or only one flower in the axil of a leaf. (daffodil, violet)

Spike: Flowers without a pedicel, attached to an unbranched main stalk (gladiolus, freesia)

Umbel, simple: The pedicels of all flowers start from the end of the main stalk (pelargonium, allium)

Umbel, compound: As a simple umbel, but the inflorescence is branched. (Queen Anne's lace, carrot)

Verticel: Axillary whorls of flowers radiating in many directions (Jerusalem sage, dead nettle)



apex: the tip of a stalk or branch (or root)

axil: the acute angle where a leaf meets the stem

pedicel: a short stalk

receptacle: structure to which flowers are attached

Tours of the BFS: Community and school groups can take tours of the BFS. The botanic garden docents took a walk around in the fall and will take another tour to see the spring wildflowers. If you are interested in bringing your group up to learn about what is there, please get in touch with the Interim Director, Jennifer Gee (909-398-5701) or send an email to us (bfsfriends@earthlink.net).