

Friends of the Herbarium

Biological Sciences Herbarium
California State University, Chico

Newsletter

Vol. 3 No. 1

June 1997

!! MARK YOUR CALENDARS !!
Friends of the Biological Sciences Herbarium
Annual Meeting

18 October 1997

Look for details in the next *Newsletter*

.....
Friends of the Biological Sciences Herbarium
present more

Friends of the Herbarium
Workshops

THROUGH the summer and into the fall, the Friends of the Biological Sciences Herbarium continues its series of workshops covering various topics to help increase your understanding of plants through identifying them and learning some of their ecological relationships. See pages 3 and 4 for the details.

- Revegetation at Walker Mine
- Fire Ecology
- Soil Geomorphology
- Intro to Keying *Carex*

JOIN US for one or more of these great workshops. Remember, at least half of your registration fees help support the Friends activities on behalf of the Herbarium.

MESSAGE FROM THE BOARD

The seven individuals serving on the Board of Directors in 1996 were re-elected to serve in 1997 by a tally of those ballots which were received by May 1. The Board meetings are efficient, productive, accommodating of individual schedules, and . . . well . . . fun! Let us know if you think you might be interested in being on the Board in the future. Our next Board meeting is tentatively scheduled for September 12 at 2:00 p.m. in the herbarium.

Plans for expansion of the herbarium have become somewhat unclear for the present. We had an approved plan to build a doorway this summer, to connect the herbarium to the adjacent laboratory classroom. However, in May we learned that the University is looking into space re-allocations which may impact the expansion plans. We are only assured use of the adjacent room until next

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Friends of the Herbarium

The **Friends of the Biological Sciences Herbarium**, California State University, Chico, was formed to help maintain the high quality of work that has been known to be associated with the herbarium. The primary purpose of the group is to provide community support for the herbarium. This includes raising funds for items that are not covered under the University budget. Scientific and academic pursuits are the focus of the group. The Friends also offers low cost workshops and classes on various botanical topics.

The Friends of the Biological Sciences Herbarium operates under auspices of the California State University, Chico, and enjoys non-profit status and has access to the use of University classrooms and equipment.

Memberships are renewed on May 1 of each year.

BOARD OF DIRECTORS

Robin Fallscheer
mailing list
Linnea Hanson
workshop calendar
Lawrence Janeway
newsletter editor
Joyce Lacey
publicity
Richard Lis
1997 General Meeting coordinator
Jan Monelo
Jim Jokerst award
workshop registration
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faculty liaison

Newsletter

Volume 3 Number 1

The Newsletter is published three times a year by the **Friends of the Biological Sciences Herbarium**, California State University, Chico. Subscription is free with membership. Submissions on herbarium related topics are welcome.

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Message from the Board
summer, so it would be unwise to use our funds for structural remodeling at this time. We are having the room re-keyed to match the herbarium, and we will use the space to the extent possible without structural modifications until we know more.

With the herbarium expansion in limbo, we are faced with the question of what to do with the approximately \$4,000 in the Friends of the Biological Sciences Herbarium account. We need more herbarium cases and book cases, but currently don't have space for them. The Board has discussed purchasing a computer, so we may move in that direction this fall. Another option would be to just hold on to the funds, so that they will be available for remodeling next year if our long term expansion plans get back on track.

It's still a rumor (needs approval by the Provost), but the Biology Department is planning to hire a plant systematist next year, to begin teaching Fall 1998. This would be a wonderful boost for the herbarium! RF

BOTANICAL ILLUSTRATION with Judy McCrary

On April 26, about eight interested sketchers met with Judy McCrary to learn about botanical illustration. When I arrived in the afternoon to help with closing, there was soft music playing and everyone was quietly illustrating. I sat and enjoyed the peacefulness and many were willing to show me their illustrations. The talent in the room was amazing. Everyone enjoyed the day and hoped that another class would be offered soon. All in all it seemed like a very worthwhile day for all participants. LH

- 1997 WINNERS -

Jim Jokerst Field Botany Award

Congratulations to the Jim Jokerst Field Botany Award winners for 1997. This year's winners are Mike Dunbar, Loren Gehrung, and Samantha Mackey. Each of the award winning researchers will give a short presentation of their research to the General Meeting of the Friends of the Herbarium tentatively scheduled for October 18. Mike Dunbar's study site is at Vina Plains Preserve; he is determining the effect that bovine fecal matter has on *Delphinium*. Loren Gehrung's project is aimed at resolving taxonomic and distributional questions about several species of *Vaccinium*. Samantha Mackey's study deals with identifying critical life history stages and important environmental parameters for *Cryptantha crinita*, a rare borage. A summary of Samantha's project is presented in this issue of the Newsletter (see pg 5); look for summaries of the other two projects in upcoming newsletters.

We are very proud to award \$250 to each of these students. The cash awards are contributed entirely by anonymous donors.

JM



DUES REMINDER

Friends memberships are renewed on May 1 of each year. A big "thank you" to those of you who responded to our reminder in the March newsletter! If you haven't renewed, there is a clip out form on the back page for your use. Your support is very much appreciated.

RF

FRIENDS OF THE HERBARIUM WORKSHOPS

REVEGETATION EFFORTS AT WALKER MINE. 25 July, Friday.

Jim Battagin, a local botanical consultant, will lead this one day field trip on the revegetation efforts he has been involved with at Walker Mine. Walker Mine is an old copper mine north of the town of Portola in Plumas County. The mine itself is on private property but the tailings are on National Forest land. The Chico Genetic Resource Center, U.S. Forest Service, has been involved in growing the plants for the revegetation from cuttings and seeds that have been collected in the Walker Mine area. This will be an all day field trip, so please bring a sack lunch and water. The fee is \$25.00 for members of Friends of the Herbarium and \$35.00 for non-members. Please register at least 10 days ahead, if possible. For more information about the class, including time and place to meet, please contact Linnea Hanson at 916/345-6229. For information about registration, please call the Herbarium at 916/898-5381.

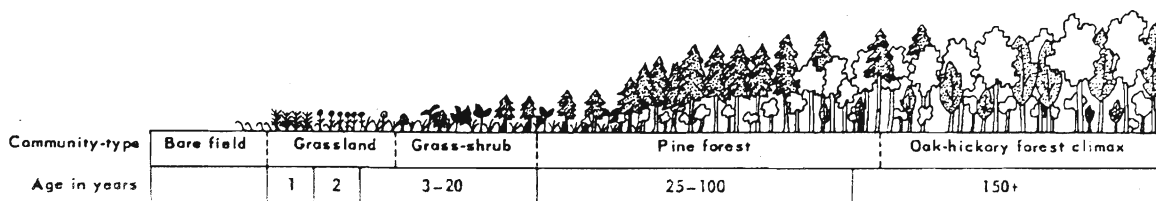
FIRE ECOLOGY. 23 August, Saturday.

Joann Fites will lead this one day workshop on fire ecology in the mixed conifer forests of the Sierra Nevada. Joann is a Landscape and Ecosystem Ecologist with the US Forest Service and is doing research in fire history and vegetation interaction in the west side Sierra. The class will look at pre-European settlement fire patterns, interactions with vegetation, and succession, and compare this with present day fire interactions. The workshop will meet at 9:00 am in Holt Hall, Room 129, at CSU, Chico for a short slide program, and then car-pool up Hwy 32 to Deer Creek and Mill Creek to look at examples of fire and to look at evidence of past fire and vegetation response. The class is limited to 20 participants; the fee is \$25.00 for members of Friends of the Herbarium and \$35.00 for non-members. Please register at least 10 days ahead, if possible. For more information about course content please contact Joann Fites at 916/836-0408 or fitesk@psln.com. For information about registration, please call the Herbarium at 916/898-5381.

SOIL GEOMORPHOLOGY OF THE NORTHERN SACRAMENTO VALLEY.

5 September, Friday (7:00 - 10:00 p.m.) and 6 September, Saturday (8:00 a.m. - 5:00 p.m.)

David Kelley, consulting plant and soil scientist of Kelley & Associates Environmental Sciences, Inc. in Davis, will lead this 1+ day workshop. Emphasis in the class will be on basic soils information and the relation of soils to landforms. The study of soil geomorphology is a basic component of landscape ecology. Understanding soils and landforms is an important aid to understanding plant community distribution. Friday evening will be a lecture, held in Holt Hall, Room 129, at CSU, Chico. Saturday will begin with a field introduction in Holt Hall, then participants will car-pool to nearby sites, including vernal pool and riparian areas. Information on the new mapping efforts for Butte County soils will be presented at the workshop. The fee for the 1+ day workshop is \$35.00 for members of Friends of the Herbarium and \$45.00 for non-members. The workshop will be organized to be as meaningful as possible for those who are unable to attend both days. Please register at least 10 days ahead, if possible. For more information about the course, please contact David Kelley at 916/753-1232. For information about registration, please call the Herbarium at 916/898-5381.



Plant community succession in an abandoned field in the Piedmont region of southeastern United States.

INTRODUCTION TO KEYING CAREX. 15 November, Saturday.

An introduction to keying *Carex* and the associated terminology, this workshop is led by Lawrence Janeway. Material of several species of *Carex* will be available for keying by all members of the class working together, each person with their own specimen; herbarium labels will be provided for those participants who would like to take home their sample material for later reference. Please bring forceps, dissecting needle, and 6" millimeter ruler. The workshop will meet from 9:00am to 5:00pm in Holt Hall, Room 129, at CSU, Chico. The class is limited to 16 participants; the fee is \$25 for members of Friends of the Herbarium and \$35 for non-members. Please register at least 10 days ahead, if possible. For more information about the course, please contact Lawrence Janeway by e-mail at lpjaneway@compuserve.com or by phone-mail at 916/899-7434. For information about registration, please call the Herbarium at 916/898-5381.

Lawrence is considering conducting a part two of this popular *Carex* keying workshop sometime in early 1998. This workshop will involve keying only the first 2 or 3 samples together and the rest of the day with participants keying other bulk collections of *Carex* at their own pace. Please express your interest and recommendation for date at the above e-mail or phone-mail.

Look for **MORE WORKSHOPS** in the fall, including repeats of our popular workshops on keying grasses and comps. Watch for details in the next newsletter.

FRIENDS OF THE HERBARIUM WORKSHOPS

Registration Form

Reveg at Walker Mine, 25 July	___ \$25.00 (member)	___ \$35.00 (non-member)
Fire Ecology, 23 August	___ \$25.00 (member)	___ \$35.00 (non-member)
Soil Geomorphology, 5-6 September	___ \$25.00 (member)	___ \$35.00 (non-member)
Intro to Keying <i>Carex</i> , 15 November	___ \$25.00 (member)	___ \$35.00 (non-member)

Please make your check payable to "Friends of the Biological Sciences Herbarium"
and mail to:

Friends of the Biological Sciences Herbarium

California State University, Chico

Chico, CA 95929-0515

Name _____

Organization _____

Address _____

City _____ State _____ Zip _____

Phone no. _____ E-mail _____



Identifying critical life history stages and important environmental parameters for a rare borage, *Cryptantha crinita*

A project by Jim Jokerst Field Botany Award winner **Samantha Mackey**

The current situation:

To prevent the extinction of rare plant species, conservation biologists attempt to actively manage them. However, the biological bases for many management regimes is unclear. Often, management plans center on life cycle stages that are obvious and easily accessible; however, the impact of these conspicuous stages on population growth is largely unknown. More information on the importance of all life history stages of a species is necessary in order to make informed management decisions.

To address this problem, a research approach called "population viability analysis" (PVA) has been used to determine the status of threatened species. PVA involves the "evaluation of data and models for a population to anticipate the likelihood that a population will persist ... into the future." Researchers outline a three step approach to PVA: 1) identifying the "status" of a species (declining, increasing, or stable); 2) identifying critical life history stages that impact population growth; and 3) focusing further research on these important stages to identify the factors (ecological, genetic, etc.) that affect them.

Traditionally, the "status" of a species is determined by long-term monitoring; however, monetary constraints and rapid habitat destruction limit the feasibility of such studies. Another approach is to construct a Leftkovich stage-based matrix population model from field data and project this into the future. Sensitivity analysis of the model can identify life history stages that are the most critical to population growth. With this knowledge, conservation biologists can better focus further research on these stages.

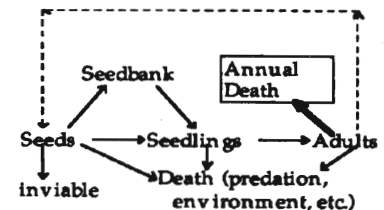
This project (my master's thesis) will use PVA to examine the ecology of a rare annual borage, *Cryptantha crinita* Greene. This annual is currently listed by CNPS in category 1B. All known populations are in northern California, in Shasta and Tehama Counties. This species is generally found in the beds of ephemeral creeks on the central valley floor. At least 40% of the populations face possible threats from development, mining, and recreation. Evaluating the impact of the disturbances on *C. crinita* has been difficult because the biology of the species is largely unknown.

My goals:

Due to this lack of knowledge, no specific management plan exists for *Cryptantha crinita*. My goal for this project is to study and model this plant to determine 1) its "status" and 2) which parts of its life history have the most impact on population growth. I also hope to identify environmental characteristics associated with more "successful" populations. This information should be useful in directing further research and formulating a management plan for this species.

Accomplishing the goals:

During the spring and summer of 1996, I made some initial observations of *C. crinita*. Based on these observations, combined with published studies of *C. flava*, I developed a simplified life cycle graph for *C. crinita* (see adjacent diagram). During my research, I will quantify all parameters of this graph. With this information, I will construct population models and project them into the future. Sensitivity analysis of these models will identify which portions of the life history are most "key" to population growth. Lastly, I will look for any correlations between environmental parameters (soil type, disturbance, grass cover, etc.) and the rate of increase of the individual populations.



Location and Timeline:

I obtained locations of all known occurrences of *C. crinita* from the California Department of Fish & Game's Natural Diversity Database. I am currently working at three of these locations. Two are on gravel washes on BLM land in Shasta County and northern Tehama County. The third is a privately owned creek near Anderson in Shasta County.

I plan to monitor these areas for two years, from this year until summer 1998. My master's thesis and any reports should be completed by December 1998, or at the latest Spring 1999.

Yes! I would like to join!

____ Student.....\$5.00
____ Individual\$10.00
____ Contributing\$25.00
____ Sustaining\$100.00
____ Lifetime\$1,000.00
____ Donation\$ _____

This is a renewal for 1997

Please make your check payable to:

"Friends of the Biological Sciences Herbarium"

Name _____

Organization _____

Address _____

City _____

State _____ Zip Code _____

Phone no. _____

E-mail _____

Friends of the Biological Sciences Herbarium

BOARD OF DIRECTORS

Joyce Lacey

Robin Fallscheer

Richard Lis

Jan Monelo

Linnea Hanson

Kingsley Stern

Lawrence Janeway

Friends of the Biological Sciences Herbarium

California State University, Chico

Chico, CA 95929-0515

916-898-5381

ADDRESS CORRECTION REQUESTED

A red ✓ means you
haven't renewed yet.
Please do so now!

**By-laws
for
Friends of the Herbarium**

Article I-Name

The name of this organization shall be: Friends of the Biological Sciences Herbarium at California State University, Chico.

Article II-Purpose

The purpose of this organization is to maintain the high quality of the resource and research work that has been known to be associated with the Herbarium. Primary objectives are to provide a medium for botanical community support and to provide for items that are not covered under the University budget. Scientific and academic pursuits will be the focus of the group through workshops and classes on technical topics.

The geographic focus for this organization will be the area north of Sacramento, to the Oregon border, excluding the coastal region.

Article III-Membership

1-Membership is open to any person or organization with an interest in supporting the Biological Sciences Herbarium.

2-Each member shall be entitled to one vote on any question requiring a vote of the membership. Each organization may have a single membership and shall have one vote.

3-Each member shall be assessed yearly dues.

Article IV-Dedication of Assets

The properties and assets of the organization are dedicated to the benefit of the Biological Sciences Herbarium. All dues and financial assets will be handled by the University Foundation. Scholarships and peripheral activities will be awarded from special earmarked contributions.

Article V-Disbursal of Assets

Should the organization disband, the board of directors shall disburse the assets to the Department of Biological Sciences to be used for support of the herbarium.

Article VI-Board of Directors

1-The number of directors shall be seven.

2-Directors shall be elected by a simple majority vote of ballots received by a specified date each year.

3-Removal of officers shall require a 2/3 majority vote of the total voting membership.

4-Vacancies shall be filled by appointment by the remaining board .

5-The board will meet as necessary but not less than once a year and a quorum shall consist of four board members.

6-The duties and responsibilities of the board shall be divided among the members of the Board of Directors.

7-Ad Hoc Committees will be appointed and disbanded as needed.

8-Board of Directors meetings will be conducted according to Roberts Rules of Order.

Article VII-Meetings

General meetings will be held at least once a year in the fall. At the fall general meeting, a financial report will be reported.

Article VIII-Decision Making process

The process for general decision making of the board shall be a simple majority of a quorum of the board. The process for general decision making of the general membership shall be a simple majority of the returned ballots.

Article IX-Amendment Process

These by-laws may be amended by a minimum of five members of the board submitted for approval of the general membership by a simple majority at the general meeting or returned ballots.

Article X-Records

A file containing the membership roster, by-laws, newsletters, minutes from board and general meetings, and records of receipts and disbursements will be kept in the herbarium by a board appointee.

Article XI-Miscellaneous

No personal liability shall in any event attach to any member of the society for, by reason of, or, in connection with, any activity of the society.