

Introduction to the Identification of Bryophytes

March 10-11, 2012



Helodium blandowii

What is a bryophyte? Mosses, liverworts, and hornworts are collectively referred to as bryophytes. The study and identification of bryophytes is technically complex but is rewarding and stimulating at the same time. You do not want to miss this opportunity to learn about the cryptograms in your backyard.

This two day workshop will begin with a presentation on what bryophytes are, where they are found, and how to distinguish between various species in the field. Growth form and life form concepts will be presented including discussions on how the environment influences bryophyte diversity. After the morning presentation, field discussions will continue at Bidwell Park. The focus of the field trip will

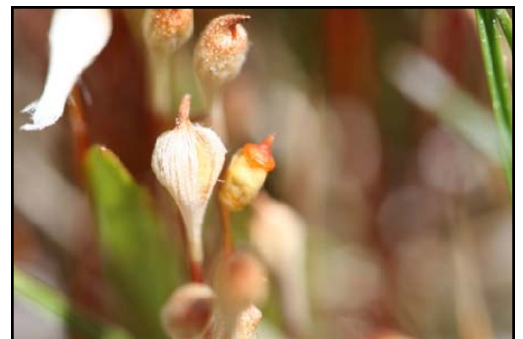
be to practice recognizing different growth forms and life forms in the field in different habitats.

Day two will begin with a presentation on key microscopic characteristics for mosses and liverworts. After the presentation students will have an opportunity to go through a series of stations to look at the key characteristics discussed during the presentation. The second half of the day will be spent identifying bryophytes. Participants will be guided through the Norris and Shevock keys to the mosses of California and Doyle and Stotler keys to the liverworts and hornworts of California. These references are unique among moss keys because they emphasize vegetative characters to such an extent that every local moss can be identified to genus without the presence of fruiting structure.

Shana Gross works as an Ecologist for the U.S. Forest Service in the Lake Tahoe Basin and is also leading the development of a Bryophyte Center of Excellence within the Forest Service. She received her Master's degree in Bryophyte Ecology from SUNY College of Environmental Science and Forestry.

Participants should bring a hand lens, fine-point forceps, dissection needles, microscope slides and cover slips, single-edged razor blades, and a copy of the Norris and Shevock and the Doyle and Stotler keys. Other recommended books to bring are "California Mosses" by Malcolm, Malcolm, Shevock & Norris (2009), "Mosses and Other Bryophytes, an Illustrated Glossary" by Malcolm & Malcolm (2006), and "Moss Flora of the Pacific Northwest" by Elva Lawton. See page 3 for more information about these critical references.

This workshop will meet Saturday, March 10, and Sunday, March 11, 2012, from 9:00 a.m. to 4:30 p.m. each day in Holt Hall room 129 at CSU Chico. For the field portion of the workshop (part of Saturday) we will visit Bidwell Park; everyone will be responsible for their own transportation, however carpooling will be encouraged. Lunch will be in the field on day one, so please come prepared with food and water. The registration fee is \$180.00 personal, \$220.00 business (\$160.00 for members of Friends of the Herbarium), \$100.00 student (only 2 seats at this price). Please register in advance; class size is limited to 16 participants (class cancelled without a minimum of 8 participants). For more information about workshop content please contact Shana Gross at segross@fs.fed.us or (530) 543-2752. For more information about workshop registration please contact the Biology office at (530) 898-5356 or jbraden@csuchico.edu.



Polytrichum juniperinum sporophytes

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workshop registration form

Please make your check payable to “Friends of the Herbarium” and mail to
Friends of the Herbarium
California State University, Chico
Chico, CA 95929-0515

NAME: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

PHONE: _____

E-MAIL: _____

AMOUNT ENCLOSED: _____



Shana Gross posing in a patch of *Philonotis*.

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Resources

- Norris, D.H. and J.R. Shevock. 2004. Contributions toward a Bryoflora of California: I. A Specimen-Based Catalogue of Mosses. *Madroño* 51(1): 1-131.
- Norris, D.H. and J.R. Shevock. 2004. Contributions toward a Bryoflora of California: II. A Key to the Mosses. *Madroño* 51(2): 133-269.
- Doyle, W.T. and R.E. Stotler. 2006. Contributions toward a Bryoflora of California III. Keys and Annotated species Catalogue for Liverworts and Hornworts. *Madroño* 53(2): 89-197.

The above three items can be obtained through the *California Botanical Society* web site at www.calbotsoc.org/bryoflora.html

- Malcolm, B, N. Malcolm, J. Shevock & D. Norris. 2009. *California Mosses*. 430 pages. Micro-Optics Press.
- Malcolm, B. & N. Malcolm. 2006. *Mosses and other Bryophytes, an Illustrated Glossary*. Second Edition. 336 pages. Micro-Optics Press.

The above two books of superb photographs can be obtained through the *California Native Plant Society* on-line store: www.cnps.org

- Lawton, E. 1971. *Moss Flora of the Pacific Northwest*. 362 pages plus 195 plates of illustrations. The Hattori Botanical Laboratory, Nichinan, Miyazaki, Japan.