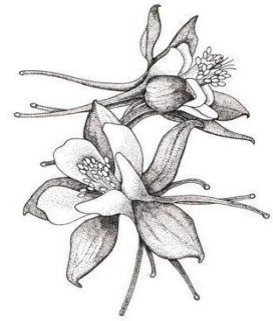


Aquilegia

Newsletter of the Colorado Native Plant Society

Dedicated to the appreciation and conservation of Colorado native flora and habitat



Volume 35 - Number 1 – Spring 2011

MISSION STATEMENT



Photo by Tim Henson

After considerable discussion, the CoNPS Board of Directors has adopted changes to explicitly recognize the importance of habitat in any effort to conserve native plants, and to make more specific the means by which CoNPS will pursue its conservation goals.

MISSION STATEMENT

The Colorado Native Plant Society is dedicated to furthering the knowledge, appreciation and conservation of native plants and habitats of Colorado through education, stewardship and advocacy.



Oenothera caespitosa

Photo by Tim Henson

Inside *Aquilegia* 35.1

Research report: "Ferns and Orchids of the Sangre de Cristo Mountains"

24 field trips!

Book Reviews Workshops

Adopt-a-Trail Program

Volunteer opportunities
and more!

FERNS AND ORCHIDS OF THE SANGRE DE CRISTO MOUNTAINS, PART 1: 2010

by Scott F Smith

The summer of 2010, between the months of June and September, I started what I thought would be an easy field survey. How hard could it be to complete a Fern and Orchid survey in the Sangre de Cristo Mountains?

Hard - way harder than I ever imagined.

I accomplished maybe half the trails that I wanted survey on. Finding roads that are few and far between areas that I wanted to go to was the first trick. Finding ways around the Private Property holdings was another trick. I also included in this survey parts of the Wet Mountains that are so close and almost are adjoining each other on the northern side at the Arkansas River.

Through the help of the Colorado Native Plant Society and a partial-funding grant from the Marr and Steinkamp research funds, I was able to spend several weeks on this fern and orchid survey of the Sangre de Cristo Mountains. Technical support through the University of Colorado Herbarium was also greatly appreciated.

The good news is that by the end of summer I managed to find 5 or 6 (two are still in analysis) new ferns that had not been previously documented for the Sangre de Cristo Mountains Range in Colorado. These ferns were *Botrychium* ferns; *Botrychium echo*, *Botrychium minganense*, *Botrychium neolunaria*, *Botrychium pinnatum*, *Botrychium spathulatum* and *Botrychium tunux*. Two of these *Botrychium* are still out at the University for Genetic Analysis. Most of these 5-6 ferns are rare, two being very rare in Colorado. I found and expanded a population of the rare *Asplenium trichomanes* ssp. *raiosum* fern or Green Spleenwort fern, previously known from this area, but not in such a quantity. This is probably the largest known population in the state. Many other ferns were found in the Sangre de Cristo Mountain Range and are listed below.

Several rare native orchids were found along multiple not-so-rare orchids or the common orchids of Colorado. The rare ones were *Cypripedium parviflorum* ssp. *pubescens*, *Epipactus gigantea* and *Platanthera tescamnis*. The populations of Yellow Lady Slippers are pretty small and were previously documented. The *Epipactus gigantea* population is a monstrous population. I would imagine this is the largest population in the state, with literally thousands of plants. In all, 31 species of ferns and 12 species of orchids were found.



Botrychium spathulatum

Photo by Scott F Smith

This survey will continue again next summer with many more forays into the Sangre de Cristo and Wet Mountains. Once was not even close enough. It seems that I have only yet begun. I believe there to be many more species of ferns and orchids to be found.

Trips were made into the following areas of the Sangre de Cristo and Wet Mountains (all in Colorado):

Poncha Hot Springs Drainage, close to Poncha Springs
Methodist Mountain at Salida
Bushnell Lakes Trail, by Coaldale
Hayden Pass Road East side, by Coaldale
Rainbow Trail by Coaldale
Middle and North Prongs of Hayden Creek by Coaldale
Newlin Creek Trail by Florence
Greenhorn Mountain Road, by Lake Isabel
Music Pass Road, by Westcliffe
South Colony Lake Road by Westcliffe
Rainbow Trail by Westcliffe
Stonewall Gap, by Stonewall
Trinchera Peak Road by Cuchara
Zapata Falls Trail, by the Great Sand Dunes
Zapata Creek Trail, by the Great Sand Dunes
Mosca Pass Trail East and West Side, by the Great Sand Dunes
Major Creek Trail by Villa Groove
Valley View Hot Springs by Villa Groove



Cypripedium parviflorum Photo by Scott F Smith

Ferns

Argyrochosma fendleri, Zigzag Cliff Brake
Asplenium septentrionale, Grass Fern
Asplenium trichomanes ssp. ramosum, Green Maiden Hair Spleenwort
Asplenium trichomanes ssp. trichomanes, Maiden hair Spleenwort
Athyrium filix-femina, Lady Fern
Botrychium echo, Reflective Moonwort
Botrychium hesperium, Western Moonwort
Botrychium lanceolatum, Lance leaf Moonwort
Botrychium minganense, Mingans Moonwort
Botrychium neolunaria, Common Moonwort
Botrychium pinnatum, St. Johns Moonwort

Botrychium spathulatum, Spatulate Moonwort
Botrychium tunux, Moosewort Moonwort
Cheilanthes feei, Slender Lip Fern
Cheilanthes fendleri, Fendlers Lip Fern
Cryptogramma acrostichoides, Parsley Fern
Cryptogramma stelleri, Slender rock Brake
Cystopteris fragilis, Fragile Fern
Cystopteris reevesiana, Reeves Fern
Dryopteris filix-mas, Male Fern
Equisetum arvense, Field Horsetail
Equisetum hyemale, Common Scouring Rush
Equisetum laevigatum, Smooth Scouring rush
Polypodium saxamontanum, Mountain Polypody
Selaginella densa, Crowded Spikemoss
Selaginella mutica, Blunted Spikemoss
Selaginella underwoodii, Underwoods Spikemoss
Pteridium aquilinum ssp. pubescens, Bracken Fern
Woodsia oregana ssp. cathartiana, Western Cliff Fern
Woodsia neomexicana, Mountain Cliff Fern
Woodsia ssp., Unknown Cliff Fern

Orchids

Calypso bulbosa, Fairyslippers Orchid
Corallorhiza maculata, Spotted Coralroot Orchid
Corallorhiza striata, Stripped Coralroot Orchid
Corallorhiza trifida, Green Coralroot Orchid
Corallorhiza wisteriana, Wisters Coralroot Orchid
Cypripedium parviflorum ssp. pubescens, Yellow Lady Slipper
Epipactis gigantea, Chatterbox Orchid
Goodyera oblongifolia, Rattlesnake Orchid
Goodyera repens, Lesser Rattlesnake Orchid
Platanthera huronensis, Green Bog Orchid
Platanthera purpurascens, Green Bog orchid
Platanthera tescamnis,

Scott F Smith is a Colorado plant enthusiast and plumber with the United States Antarctic program. His particular expertise is in native *Botrychium*, cactus, ferns, and orchids, and includes both study and photography. More examples of his photography can be found on the CoNPS website (under "Slide Shows").

WE'RE ON FACEBOOK!!!

The Colorado Native Plant Society is now on Facebook. Join us to share information, interests, questions, and answers about Colorado native plants!

BOOK REVIEWS

Pollination Described in Words and Pictures

By Jan Loechell Turner

To understand a subject, words and pictures can be a powerful, and in some cases, indispensable combination for learners. Analogies can bring a subject home to us. The lay reader can be intimidated by academic sources and give up their study of a topic because the vocabulary seems daunting. Well-written and researched picture books can give readers a gentler introduction to a subject than a scientific article or textbook might do. Such books distill information from more scholarly sources and present the facts in a way that may inform and entertain the reader without being overwhelming. Authors who are artists are well-equipped to create this kind of book.

Colorado authors and artists, Anne Ophelia Dowden and Angela Overy, produced two very different books about plant pollination. Both authors are skillful, entertaining writers. Dowden created an enchanting, fact-filled book accompanied by her own outstanding black-and-white illustrations and watercolors of plants and pollinators. Overy took a humorous approach, drawing parallels between the sex life of plants and the sex life of humans. The pages of her informative book are filled with colorful and provocative words and photographs and Dowden's book was one of the references used by Overy.

Sex in Your Garden by Angela Overy. Golden, CO: Fulcrum Publishing, 1997.

Wouldn't you know that someone with the surname Overy would write a book with the title *Sex in Your Garden*? Published in 1997, this is the perfect book for someone who is engaged in plant education for the public or for anyone desiring a good read while waiting for spring to arrive.

The author has taken a humorous, anthropomorphic approach to plant reproduction, using verbal and visual analogies that compare plant "behavior" to that of humans. Much of the book is devoted to the various ploys used by plants to attract pollinators, including

colors, shapes, and scents. Like a bee visiting flowers, Overy has gathered information from many different sources and the result is a sweet blend of humor and facts. Bold red letters proclaim the dandelion to be PROMISCUOUS, unselectively welcoming any pollinator (flies, bees, butterflies, and beetles) that may come its way. In contrast, the prim and more selective monkshood (labeled DEVOTED) is faithful to the bumblebee, but if no bumblebee visits the flowers, Overy admits that the monkshood will resort to self-pollination or selfing "rather than die unfulfilled." (p.25). The book does not discuss whether this behavior results in blindness.

"Bellflower anthers ejaculate pollen onto the female organ before the flower even opens. This may seem premature..." (p.25). Although this bold language may shock the prudish reader, others will be delighted by the author's description of strategies used by plants and people to attract "the one" or in some cases, the many.

The author describes and illustrates the sexual parts of a flower and next visits the topics of sexual orientation, methods of advertising to attract pollinators/partners, and discusses food rewards for pollinators including nectar and pollen. Photos of plants and humans illustrate similar strategies employed to catch the eye of a promising "mate," from the tanned man displaying his muscles and the woman in a lacy bra to a shocking red poppy calling out to pollinators with its color and shape.

The chapter, "Pain and Shame," describes the disappointing or grizzly fate of some pollinators; orchid flowers may be teases that mimic female insects to attract males of the species and gnats may be lured to their death by the flowers of Jack-in-the-pulpit, that trap the insects after the flowers have been pollinated ("murder most foul", p. 74). No pollination book would be complete without describing the characteristics of

the plants that are adapted to wind pollination and flowers that attract butterflies. The final chapters discuss how humans have intervened to selectively breed flowers, and finally, how seeds are distributed to new and different places.

For a light-hearted and informative look at the reproductive strategies used by plants, *Sex in Your Garden* is an enjoyable way to learn more about the subject.

Angela Overy is an artist, author, and gardener who spent her early years in England. She is retired but had a background in advertising design before she taught botanical illustration at the Denver Botanic Gardens, where she established the Botanical Illustration Certificate Program.

***The Clover & the Bee: A Book of Pollination* written and illustrated by Anne Ophelia Dowden. New York, NY: Thomas Y. Crowell, 1990.**

Anne Ophelia Dowden observed nature. She watched the interaction between insects and plants. She stroked bumblebees that were oblivious to her touch as they busily visited flowers. She viewed the flowers with a hand lens to study their tiny organs, dissected the flowers to view the inside of the pistils, and depicted the interior of the flowers as well as the exterior with her artwork. She illustrated numerous flowers, showing the differences between the pistils, stamens, petals, sepals, and other structures of species such as dogbane, columbine, rose, bouncing bet, *Monarda*, *Anemone*, lily, dandelion, and many others. She illustrated the pollinators and their interactions with flowers. The result is a highly informative and readable book, filled with the artwork of one of the foremost botanical illustrators of the twentieth century.

The book begins with an introduction to flower parts and fertilization, illustrated by drawings and paintings. The simple pistil of the sedum is compared to the compound pistil of the St. Johnswort, with cross sections revealing the arrangements of the ovules within the carpels. Pistils and anthers of a variety of species are displayed side by side. Drawings of the bumpy or ridged pollen of insect-pollinated flowers are contrasted with the smooth pollen blown by the wind. Have you seen the male and female flowers of meadow

rue? Dowden's drawings depict the male flower with its dangling stamens, looking like shimmering earrings. The female flower, on the other hand, is shown to be rather inconspicuous.

The book demonstrates how flowers entice pollinators with high visibility, scent, nectar, and pollen. The importance of shape (saucer-shaped, bell-shaped, tube-shaped, etc.) and markings, such as nectar guides, are described and illustrated.



Iliamna grandiflora

Photo by Tim Henson

A large portion of the book is devoted to pollinators, including honeybees, solitary bees, wasps, butterflies and moths, flies, beetles, ants, hummingbirds, and bats. The interaction of plants, pollinators, and their environment are described. The final chapter focuses on plants and pollinators with intimate or unusual relationships, such as the yucca and yucca moth, the milkweed flower and its pair of pollinia like a purse with a strap, which sticks to the legs of insects and may trap insects that lack the strength to pull away from the plant. The mechanisms of orchid pollination and the combination of insect-pollinated and self-pollinated flowers of the violet are also described and illustrated.

Dowden deftly combined words and pictures to help her readers understand the adaptations of flowers and animals that result in pollination for the plants and a food source or other benefits for the animals. This book is an outstanding classic that will not disappoint you. Although it is out-of-print, it is available from used book stores (see amazon.com) and libraries.

Anne Ophelia Todd Dowden, a well-known botanical artist and book illustrator, was a Colorado native who spent half a century in New York, and died in 2007, at age 99, in Boulder, Colorado. Dowden, the daughter of the chair of the pathology department at the University of Colorado Medical Center, was the author of 20 books. Much of her artwork and correspondence is in the collection of the Hunt Institute for Botanical Documentation at Carnegie-Mellon University, Pittsburgh, Pennsylvania. . CONPS members, Carolyn Crawford and Bill Jennings were friends of Dowden's.

Her obituary was published in the *New York Times* (<http://www.nytimes.com/2007/01/16/arts/design/16dowden.html>) on January 16, 2007.

Jan Loechell Turner is on the CoNPS Board of Directors and chairs the research grants committee. Jan and her husband, Charlie, are the authors of Wildflowers of Red Rocks Park, Wildflowers of Mesa Verde, and Wildflowers of Canyon de Chelly. Their next book, Wildflowers of the Bandelier National Monument, is due to be published in 2011 by Rabbitbrush Publishing.

POLLINATOR QUIZ

Some questions answered by *Sex in Your Garden* and *The Clover & the Bee* (answers are on page 14):

1. Does pollen come in colors other than yellow?
2. What pollinator does the yeasty smell of a South African protea attract?
3. Are hummingbirds attracted by fragrance as well as color?
4. Can beetles smell flowers?
5. What colors attract butterflies?
6. What colors attract bees?
7. What colors attract hummingbirds?
8. Are any wind-pollinated plants also pollinated by insects?
9. What is a danger to pollen that is flying at high altitudes?
10. Are honeybees native to North and South America?
11. Are bumblebees solitary or colonial?
12. What are some plants that can be pollinated by bats?
13. Do yucca moths eat yucca pollen?
14. What are some of characteristics of plants pollinated in the evening or night by moths?

PHOTOS NEEDED! COLORADO NATURAL HERITAGE PROGRAM Field Guide to Colorado's Wetland Plants

The Colorado Natural Heritage Program is developing a Field Guide to Colorado's Wetland Plants and we need your photos! The guide will include up to 500 species, and is funded by an EPA Wetland Program Development Grant. If you can donate high resolution photos of wetland plants, please contact Denise Culver (Denise.Culver@colostate.edu) or (970) 491-2998. We will credit you as the photographer, and you will receive a copy of the field guide.

A list of plant photos needed is posted on the CNHP website: <http://www.cnhp.colostate.edu/teams/wetlandphotos.asp>

2011 COURSES COLORADO NATIVE PLANT MASTER PROGRAM

The Colorado Native Plant Master® Program has announced a newly expanded 2011 course schedule. These award-winning courses are offered across the state by twelve CSU Extension offices.

Participants in Native Plant Master courses learn identification, ecology and human uses of selected Colorado plants emphasizing sustainable landscaping and invasive weeds. Students learn to use a botanical key including scientific names and families. Also offered this year are special classes such as Native Plant Landscaping, Invasive Weeds and Basic Botany.

Classes are open to all on a space available basis. Most courses are held outdoors, but some are classroom sessions. A few advanced courses have prerequisites. The cost ranges from \$20 to \$90 per course. Some courses are available for K – 12 teacher relicensure credit for an additional fee.

These popular classes have a waiting list each year, so those interested are advised to register early. To register, see www.conativeplantmaster.org or contact the program directly at yhuang@jeffco.us, (303) 271-6620. For research-based information on more than 1,000 Colorado plants, browse the Colorado Plant Database at <http://coloradoplants.jeffco.us>.

2011 FIELD TRIPS

Colorado Native Plant Society



Photo by Tim Henson

Our goal is to get as many people outside as possible, and there is no shortage of possibilities! Here are a few tips as you seek to venture out this field season:

- Please sign up for trips early as there may be limits to the number of participants. If full, many trips will also have waiting lists; even if a trip is full now, get your name on the list and don't give up hope!
- Details on where and when to meeting is available online on each chapter's web page, or by contacting field trip leaders.
- When attending a trip, be sure to bring a lunch, plenty of water, sun protection, bug spray, your favorite plant identification guides, a 10X magnifying glass, packable rain gear, and layers adaptable to Colorado's unpredictable and rapid weather changes.
- All trips are free and open to members and non-members (subject to group size limitations).
- No pets are allowed on field trips.

- Please check each chapter's web page for trip details and to see if any new trips have been added.
- Have fun!

All trips are subject to CoNPS field trip policies that emphasize "treading lightly" and adhering to strict limitations on plant collecting. These policies and guidelines are posted online at www.CoNPS.org.

METRO DENVER CHAPTER

TOUR OF THE UNIVERSITY OF DENVER ARBORETUM April 8, 2011, Friday, 3:00 PM to 4:30 PM

This is an easy and accessible walk on pavement in a mostly urban environment. It will be about 2 miles if we do every meander, otherwise 1 to 1.5 miles total. Water, restrooms and snacks are available at several points throughout.

Leader: Martin Quigley, MLA, Ph.D. has a broad background in research and has taught courses ranging from basic botany to ethnobotany, conservation biology, environmental science, landscape restoration, landscape analysis and design, and others.

Directions: Meet at the University light rail station on Buchtel (just east of I-25 and University Blvd.). Parking structure (fee charged) or local on-street parking is available.

Contact: Martin F. Quigley, martin.quigley@du.edu, office: 303-871-3973, cell: 720-362-0589

SPRING HIKE - SEARCH FOR PASQUE FLOWERS (PULSATILLA PATENS)

April 23, 2011, Saturday, 9 PM to noon

This is an easy hike of one to two miles in gentle hills. Bring lunch, hand lens, and field guides.

Leader: Lenore Mitchell,

Location: Lair O Bear Jefferson Country Open Space (five miles west of Morrison on Bear Creek Road).

Note: If weather is not amenable, will try for Green Mountain Open Space.

Directions: Meet at 9:00 AM at Lair O Bear parking lot.

Contact: lenoremitchell@msn.com 303-934-2691

SECRET LITTLE PLACES IN COMMON OPEN SPACES, PART 1

May 13, 2011, Friday

In this morning, this trip will visit a gravel bar some distance from the river at South Platte Park in Littleton. The gravel bar was left high and dry by the Platte River changing its course during the 1965 flood. It now supports a unique community unlike anything else around it. This trip requires special permission.

After lunch, we will carpool to Maxwell Falls above Evergreen. The upper trail is very well used. Yellow violets grow along the creek. A little higher on the trail, bunch berry and twinflower are found. Other species more common to the northern mountains are there as well. None of them are protected.

Bring lunch, hand lens, and rain gear.

Leaders: Vicky Trammel, past president of the Metro Denver Chapter of the Colorado Native Plant Society, recently retired from teaching biology at Arapahoe Community College, and currently conducting ecosystem research at Roxborough State Park. **Lenore Mitchell,** Native Plant Master Instructor in Jefferson County for five years.

Contact: Vicky Trammel for meeting time and directions, JRTRAMBO@Q.COM, 303-795-5843

SOUTHEAST DENVER NATURAL AREAS HIKE

May 24, Tuesday, 5:30 PM to approx 8 PM

This is remnant sandhill prairie and associated ditch, dry gulch, and low-lying areas. Easy, but most of the walk will be off trail. Hiking distance to be determined by the group, but will be in the range of 0.25 to 1 mile.

Leader: John Vickery, Natural Areas Specialist, City and County of Denver (and Native Plant Master instructor).

Location: Babi Yar & Paul Hentzell Natural Areas

Directions: The southeast corner of Babi Yar NA is the NW corner of the intersection of S. Havana St. and E. Yale Ave. Meet at the parking lot on the north side of Yale St., about 150 yards to the west of the intersection.

Bring hand lens and field guides.

Contact: John Vickery, jvickery_[at]_mcg.net, 719 359 6491

TRIP TO WALDO CANYON, HWY 24 WEST OF MANITOU SPRINGS

Friday, June 10th, 2011, 7:00 AM to 4:00 PM

Hike dry, exposed ridges and wet canyons; see masses -- thousands! -- of bluemist penstemon and 50-100 other botanical treasures; watch humming birds dip and hawks soar. Geared for both the beginner and expert: learn new details of those lesser known gymnosperms like white fir and limber pine, find parasitic plants like mistletoe, broomrape and pine drops; see "southern" plants like Penstemon barbatus that don't grow as far north as Denver; clarify the differences between the many shrubs with small leaves; learn some poisonous plants; enjoy dramatic rock formations and cross the Great Unconformity: lay your hand across a gap of 500,000,000 years in the rock record between the Pikes Peak granite and the more recent sedimentary rocks near Colorado Springs.

Expect many stops to see geology, plants, birds, insects and views of Pikes Peak.

Participants receive a plant checklist of over 91 vascular plants found in early June on this hike; please help me extend the list. You'll also get my guide to native evergreen trees of Colorado and a summary of the area geology. Because of the elevation change and the many different habitats found on this hike, the diversity of plants is enormous.

This is a real hike, not just a stroll; it is 7 miles long with over 1500 feet of elevation gain including all of the ups and downs. It is steep in places. Please come prepared with hiking boots, good rain gear, sun hat, sun shirt, sunscreen, snacks, lunch, 2 liters of water, First Aid kit and other necessities of a long day in the woods. You will also want your field notebook, pen/pencil, sketch paper, botany field guides, camera, and hand lens. Strong thunderstorms, snow, or intense heat are possible. Much of the hike is in full sun. CMC considers this to be a Difficult A hike.

Leader: Jeanne Willson, holds a PhD in Botany from Cornell. She was a ranger-naturalist in Shenandoah National Park for several seasons in the 1970s. These days she volunteers teaching natural history including geology, paleontology, and evolution with the Colorado Mountain Club, the Native Plant Master program, the Denver Museum of Nature and Science, and the Colorado Native Plant Society.

Directions: Meet at the Arapahoe Park n Ride east of I-25 between Orchard and Arapahoe at 7:00 for a 7:15 departure. Hike starts at 8:45 to 9:15. We will carpool south 60 miles with a coffee stop at the first gas station on Garden of the Gods Road. Parking is limited as the area is popular. Expect a late return of 4:00 or later. Bring money to pay your driver \$10/person.

Register by contacting: Jeanne Wilson canyonwren22@comcast.net, Work: 720-228-4128 Cell: 720-581-2052

METRO DENVER GARDEN TOURS

June 11, 2011, Saturday

Details are still being developed, and will be announced.

RARE PLANTS OF MIDDLE PARK

June 25, 2011, Saturday

Join us for an informative day of viewing rare plant species and their suitable habitat in Middle Park. Middle Park is a large valley roughly bounded by Rocky Mountain National Park to the east, the Rabbit Ears Range to the north, the Gore Range to the west, and the Williams Fork Mountains to the southwest. Middle Park is situated in the montane lifezone, featuring stunning mountain vistas and the Colorado River flowing through it to the southwest. We will focus on, and take great pains to avoid disturbing in any way, the suitable habitat for Osterhout's milkvetch (*Astragalus osterhoutii*) and Penland penstemon (*Penstemon penlandii*). These two plant species are federally listed **endangered species** and are both ranked as globally and state critically imperiled (G1/S1) with 5 or fewer occurrences.

If we have time, we will also make stops to see the rare Middle Park penstemon (*Penstemon cyathophorus*), Harrington penstemon (*Penstemon harringtonii*), and possibly, various species of moonwort (*Botrychium* spp.). Attendees will need to pack a lunch, light rain gear, sunscreen, water, and a hand lens.

Bring lunch, hand lens, and field guides.

Leader: Steve Yarbrough

Contact: Steve Yarbrough at steveandken-na@msn.com or 303-233-6345. **Registration is limited.**

SUMMIT LAKE

July 29th, Friday, 9 AM to 4 PM

There will be three site visits. The first stop will be above Summit Lake, the second stop at Summit Lake, and the final stop at the Visitor's Center. A variety of subalpine penstemons should still be in bloom, arctic gentians, and

marsh marigolds. Each stop will feature a hike of one-half to one mile.

Meet in the parking lot east of Echo Lake Lodge. Bring lunch, water, hand lens, field guides, and layers of clothing.

Lenore Mitchell has been a Native Plant Master Instructor in Jefferson County for 5 years

Contact the leader for additional details at lenoremitchell@msn.com 303-934-2691.

" LANDSCAPING FOR HUMMINGBIRDS AND SONGBIRDS"

July 31, Sunday, 5:00 PM to 8:30 PM

Plants which hummingbirds feed on will be discussed, in addition to identifying some of the hummers. Many of these plants are native to the Southwest and some are native to CO. Tina has had up to 6 species of hummingbirds in her yard, including an Anna's Hummingbird which spent 4 months at Tina's house, from Oct. to Jan. Along with hummingbirds Tina has many Songbirds, of which some nest in her boxes. Many shrubs have been planted for the birds, including Barberry [Berberis fendleri], and the unusual wild Buckthorn from the western slope [Rhamnus smithii]. Other native shrubs are abundant. Tina had a pair of Mountain Chickadees and a pair of Red-breasted Nuthatch nest in her bird boxes. There is minimal walking and one can bring a stool to sit on, to observe the birds.

Bring a hat, water, snacks or your dinner, binoculars, stool to sit on, sunblock, and hand lens and bird field guide if you desire.

LEADER: Tina Jones developed a love of Arctic and Alpine plants while studying at the University of Colorado. Tina has taught classes on Alpine Plant Adaptations and Edible and Medicinal Plants for the Denver Botanic Gardens, and for the Denver Museum of Nature and Science. In the late 1980's Tina was Vice President of the Colorado Native Plant Society, and helped organize the CoNPS annual convention at the Denver Museum of Nature and Science.

LOCATION : 4400 Bow Mar Dr., Littleton,CO.

DIRECTIONS : Class is at, and participants meet at, 4400 Bow Mar Dr., Littleton,CO [instructor's house]. From Fort Logan Cemetery go S. on S. Sheridan to the intersection of W. Quincy and S. Sheridan, drive SOUTH ON Sheridan to the first stop sign[which is just S. of W. Quincy and S. Sheridan]. At the stop sign take a right onto Sunset[head west]. Go west about one mile to Bow Mar Dr. Take a right on Bow Mar Dr. and go north to the FIRST driveway on your right. This is 4400 Bow Mar Dr. Do not park in driveway unless you are handicapped. PARK on the WEST side of Bow Mar Dr., across from 4400. Park on the west side of Bow Mar Dr. so that your car is half on the grass and half on the road, underneath the large Cottonwoods. Do not park on the east side of Bow Mar. Thank you!

CONTACT : tjcalliope@hotmail.com, or cell 303-906-5479. home 303-794-2647

CLASS LIMIT : 20 PARTICIPANTS

SECRET LITTLE PLACES IN COMMON OPEN SPACES (PART 2)

August 5 , 2011, Friday

Morning. Drive to Evergreen and take rpt 103 up toward Echo Lake. There is a lane coming off the left as you go up that leads to an old picnic area which contains a gazebo and a spring. The CCC during the depression built it. Liverworts are found in the creek. The north facing hillside supports a stand of subalpine fir. Wood nymphs, various pyrola, and bunch berry. The stream along the road has several different orchids. We could sweep search the north facing slope and see what else we find. Lunch among the wood nymphs.

Afternoon. Back to the highway and to the top of Loveland pass and Loveland Lakes for beautiful displays of alpine flowers including swamp laurel.

Bring lunch, layers of clothing, hand lens and field guides.

Leaders: Vickey Trammel, past president of the Metro Denver Chapter of the Colorado Native Plant Society, recently retired from teaching biology at Arapahoe

Community College, and currently conducting ecosystem research at Roxborough State Park. **Lenore Mitchell**, Native Plant Master Instructor in Jefferson County for five years.

Contact: Vicky Trammel for meeting time and directions, JRTRAMBO@Q.COM, 303-795-5843

GENEVA BASIN IRON FENS

Saturday, August 13:

Meet 7:30AM; return 5:00 PM

This is a designated Colorado Natural Area, due to its unusual habitat and vegetation. It is a site for Sphagnum balticus, a boreal sphagnum. The vegetational species in an iron fen are limited to 8 plant species, due to the high dissolved iron content. Where there are underground fresh water sources, there are numerous other common wetland plants. The terrain is mostly level to slightly sloping. However, most terrain is wet, with a few small streams, so a good waterproof boot is recommended. Several sites will be visited with the longest hike being one-half mile. Elevation is 11,000 feet, so plan for typical mountain weather.

Leader: Dave Bathke, Volunteer for Clear Creek County Open Space. Also volunteer for Colorado State Parks Natural Areas Program, and Pike National Forest. Has Masters in Science (Botany) from Western State College. Retired after 33 years with National Park Service as Park Ranger, Planner and Environmental Compliance Specialist.

Location: Meet at Dinosaur Parking Lot at I-70 and Highway 93 (Hogback Road). This is north of I-70 and west of the Hogback Road. We will carpool, and we will need 4-wheel drive vehicles. Meet here at 7:30 AM. We will then drive west on U.S. 285 to Grant and north on Guanella Pass Road and west on Geneva Creek road. Last five miles are 4-wheel-drive. It takes about 2 hours to reach the iron fens. Anyone coming from the west should wait at Grant, meeting about 8:15. There is now a locked gate one mile before the site, so we will need to carpool and caravan together for entry.

Contact: Fran Enright, franenright@earthlink.net, 303-674-2657 or Dave Bathke, dibathke@juno.com



Calochortus gunnisonii, Segoe Lily

Photo by Tim Henson

SOUTHEAST CHAPTER

"Go Where They Grow!"©

GENERAL INFORMATION: All Southeast Chapter field trips start in the a.m. and go into the afternoon, time depending on distance and species covered. Except as noted, participants should bring a lunch, plenty of water, their favorite flora(s), 10X hand lens, and packable rain gear. The SE Chapter welcomes everyone from professional botanists to beginners.

REGISTRATION: Advance registration is required since leaders typically limit participation to somewhere between 10 and 15 persons.

HOW TO REGISTER FOR A TRIP: Simply e-mail your name, name of trip and date, and phone number (in the event of a last minute cancellation), to **SE-trips@gmail.com**. You will be contacted by reply e-mail to confirm your registration or, if a trip is full, given the option of being wait-listed.

IMPORTANT: An announcement with details on each trip is e-mailed two to three weeks in advance of each trip date. Be sure to give us your e-mail address. (SE Chapter members automatically receive announcements.)

For information about the SE Chapter, Colorado Native Plant Society, please visit us at www.conps.org and click on "Southeast Chapter."

VOGEL CANYON
(Comanche National Grasslands)
Saturday, May 7

If you're one of the many who have joined Steve Olson on a trip to the "grasslands," you know this is one of the must-do's of the year. This trip covers habitats from short-grass prairie to the cool riparian canyon.

Leader: Steve Olson, botanist, USFS

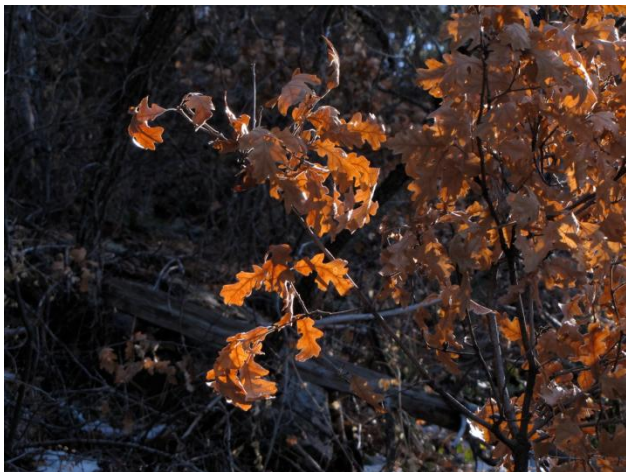
Rating: Moderate. Option to carpool from Pueblo for the 90-mile drive.

BEAVER CREEK (Beaver Creek Wilderness Study Area, west of Colorado Springs)
Saturday, May 21

27,000 plus acres of wilderness with exceptional species diversity.

Leader: George Cameron, biologist / botanist and instructor at Pike's Peak Community College

Rating: Moderate



Quercus gambelii, Scrub Oak

Photo by Tim Henson

HATCHETT RANCH, , about 30 miles south of Pueblo
Saturday, May 28

Dr. Tass Kelso will lead us through this rugged terrain of artemisias and cacti to identify many of the native plant species that make up this high desert ecosystem. Tass will also discuss the general geology of the area, and demonstrate the proper collection and identification of specimens for herbarium vouchers.

Leader: Dr. Tass Kelso, professor, Colorado College

Rating: Moderate

AIKEN CANYON
Saturday, June 4

This is one of the trips we've been requested to repeat. This is an exceptional foothills ecosystem with new things to discover at every bend of the trail.

Leader: George Cameron, biologist / botanist and instructor at Pike's Peak Community College

Location: Aiken Canyon, a preserve of the Nature Conservancy (south of Colorado Springs)

Rating: Moderate

THE 2011 GRASS I.D. WORKSHOP
Chico Basin Ranch, southeast of Fountain
Saturday, June 11

Note: This workshop is co-sponsored by the NRCS, SE Chapter of the CoNPS, and CSU-Pueblo Extension.

This workshop proves that learning can be fun. Join us for the introductory session by the Natural Resources Conservation Service. Then practice your in-the-field i.d. skills in a small group under the tutelage of an experienced instructor. \$12 fee includes a picnic-style "ranchburger" lunch.

Instructors:

Rich Rhoades, district conservationist, NRCS
Kimberly Diller, rangeland management specialist,
NRCS
Steve Olson, botanist, USFS
Dr. Neal Osborn, professor emeritus, CSU-Pueblo

Rating: Easy

PIKE'S PEAK AND ELK PARK
Saturday, June 18

The leader will meet you at the Pike's Peak tollgate (expect to pay an entrance fee of about \$7 per person) so everyone can carpool up to Elk Park Knoll at 12,000 ft. Then the search for early tundra flowers begins. The hike will only be about a mile, but be prepared for several hours at high altitude.

Leader: Doris Drisgill, area naturalist (Call Doris at 719 578-1091 for more information)

Rating: Easy

THREE MILE MOUNTAIN, northwest of Cañon City
Sunday, June 19

One of Steve Olson's little known "oases" within the millions of acres he covers as botanist for the USFS. Steve promises you won't be disappointed in the wide range of habitats and species.

Leader: Steve Olson, botanist, USFS

Rating: Easy

CAMP JACKSON
Saturday, June 25

Neal Osborn has taught field botany in the Wet Mountains for decades, and this is one of his favorite locations. A true transition zone between the montane and foothills, species and habitats vary widely in riparian drainages and exposed ridges.

Leader: Dr. Neal Osborn, professor emeritus, CSU-Pueblo

Location: About 3 miles north of Rye, Colorado

Rating: Moderate

THE RIPARIAN FOOTHILLS OF EMERALD VALLEY
Saturday, June 25

Another extremely popular trip under Doris' leadership. Carpool up the Old Stage Road to about 8,000 ft. elevation to see the very rare *Cypripedium calceolus* and associated streamside plants.

Leader: Doris Drisgill, area naturalist

Location: Cheyenne Canyon near Colorado Springs

Rating: Moderate

For more info. call Doris at 719 578-1091.

BIRDS AND BOTANY
Saturday, July 9

The Trout Creek Riparian Corridor is known as "the jewel of Teller County" for birders. Jeff will lead you through this exceptional habitat to show you first hand the inter-relationship of our avian species and the native plants they depend on for food and shelter. Binoculars will come in as handy as your 10X lens.

Leader: Jeff Jones, avian specialist / naturalist

Rating: Moderate



Echinocereus tribochidiatus, Claret Cup with Blackchinned Hummingbird Photo by Tim Henson

GREENHORN PEAK

Saturday, July 30

Greenhorn peak is one of the most accessible, and scenic, alpine environments in Colorado. Sky Pilot, King's Crown, Alpine Chiming Bells, Jacob's Ladder - to name a few - grow in the andesitic lava along the 1.5 mile trail to the top. We'll meet just off Hwy. 165 near Bishop's Castle and carpool for the easy 22-mile drive to the trailhead.

Leader: Dr. Neal Osborn, professor emeritus, CSU-Pueblo

Location: Greenhorn Wilderness Area

Rating: Easy to Moderate.

MOSCA PASS

Saturday, August 6

This is a re-scheduled trip from last year, when the area was closed to give firefighters access to a distant location. This trail is easily accessed on the eastern slope of the Sangres, and offers meadows, rocky exposures and riparian habitats. After botanizing, some may want to make a day of it and climb the dunes.

Leader: Steve Olson, botanist, USFS

Location: 5 miles west of Gardner, Colorado

Rating: Easy to Strenuous

QUEEN'S CANYON QUARRY, Colorado Springs

Saturday, August 27

This is the one of the "scars" on the mountains above Colorado Springs, and a limited access area managed by the Colorado Mountain Reclamation Foundation. We'll evaluate this interesting area as native plant habitat and likely observe some of the large population of Bighorn Sheep. Much more info to come.

Leaders: Doris Drisgill and George Cameron

Rating: Easy

Pollinator's Quiz: Answers

1. Yes
2. Mice
3. No. Hummingbirds do not have a strong sense of smell
4. Yes. They are attracted by scent
5. Red, orange, yellow, pink
6. Yellow, blue, purple, ultraviolet
7. Red, orange, purple-red
8. Yes. Overy lists garden meadow rue (*Thalictrum*), willows (*Salix*), linden trees (*Tilia*), and Hima layan border jewel (*Polygonum affine*)
9. Ultraviolet light
10. No. They are native to Europe.
11. Some live alone and some live in small colonies
12. Saguaro cacti, bananas, avocados, agaves
13. No. Yucca moths do not feed at all and the yucca moth larvae feed on the seeds of the yucca
14. White or light-colored petals, fragrant, flowers open in the evening or night



Lewisia redivia, Bitterroot

Photo by Tim Henson

Aquilegia Deadline Approaches

Submit contributions by April 15

Announcements, news, articles, book reviews, poetry and other contributions are requested for publication in *Aquilegia*. Articles not exceeding 750-1000 words in length are especially welcome. Include author's name, address, and affiliation, as well as credit for images. Please use previous issues of *Aquilegia* for guidance on format. Previously published articles submitted for re-printing require permission. All contributions are subject to editing for brevity and consistency. Submit materials via e-mail to Bob Henry at bh.prairieink@gmail.com.

2010 DONORS

The Society is very grateful to all who contributed in the past year in support of our research and other activities.

DONATIONS TO THE JOHN MARR FUND

Research on the biology and natural history of Colorado native plants

Lawrence and Ruthmary Allison
Susan Beatty
Richard Beidleman
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Leo Bruederle
David and Sandra Buckner
Jeffrey Carter and Family
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Research and other activities to benefit the rare plants of Colorado

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Carol Zager

WORKSHOPS

FERNS

This is a free workshop!

The Ferns Workshop dates have been set for **March 19 and 20, 2011**, again at CSU Extension in Longmont, from 9:00AM to 3:00PM, Scott Smith as speaker.

Come learn about the almost 90 different ferns of Colorado, some of which are extremely rare, that can be found growing on the Eastern and Western Slopes. Learn

how to tell the differences between *Woodsia*, *Cystopteris* and so many others. This all-day workshop will help you identify the ferns that you are seeing in the hills and near wet areas.

The slide show will have color photos of the ferns of Colorado along with pressed herbarium specimens to browse at your leisure. Ask questions.

NATIVE PLANTS ON FEDERAL LANDS: HOW TO USE FEDERAL DOCUMENTS TO CONSERVE PLANTS

This is a free workshop!

Saturday, March 19, 2011; 9:00 AM to 3:00 PM

Presenters:

Brian Kurzel, Colorado Natural Areas Program
Josh Pollock, Center for Native Ecosystems
David Loomis, US Forest Service
BLM representative, to be announced

Location: Denver, Alliance Building,
1536 Wynkoop Street (LoDo)

-or-

Webinar to be offered to anyone with a phone line and internet

Are you interested in....?

- Overcoming a fear of federal documents
- Learning how to dive into the important stuff to find opportunities to conserve native plants
- Learning how to provide comments that will have the most impact for native plant conservation

- Helping your chapter make sure you don't miss a chance to comment on important projects in your area

This is part of a new approach that CoNPS is taking to be more proactive in native plant conservation. Be a part of this exciting opportunity!

FREE TO CoNPS Members! Contact Linda Smith at CoNPS@aol.com or by phone at 970-663.4085 to register for either the on-site workshop, or the Webinar. The on-site workshop is limited to the first 25 registrants,



Castilleja integra

Photo by Tim Henson

ADOPT A TRAIL – MONITOR NATIVE PLANTS

Do you have a favorite hiking trail near your home?

Do you enjoy identifying all of the plants along the trail?

Do you want to help conserve the native plants of Colorado?

If so, you may want to volunteer for our new “Adopt a Trail” Program.

Pick any trail in Colorado, develop a list of the plants you find (or update an existing list), and share the information with us. We will then enter all the plant lists we receive into a database and be able to put together plant field guides that would be available in the future on our website for anyone interested in wildflowers and hiking. The information that you collect will inform us, and any other interested agency, about the overall welfare of Colorado’s native plants and their habitats.

You can monitor a local trail once a year, monitor the same trail several times during the season, or monitor as many trails as you want, anywhere in the state, depending on the commitment level of your choice. The website will also provide high quality photos of the plants, so if you enjoy photography, this volunteer opportunity gives you a chance to share your photos. Our ultimate objective is for the Colorado Native Plant Society to be a state-wide repository of all available

plant lists. Our hope is that the database will eventually contain ALL plants that are found along ALL Colorado trails (the exact locations of rare plants will NOT be made public), with the ability to search and provide reports, brochures, and future research data with the following results:

- Find locations of a particular plant around the state, blooming at a specific time along any or all trails within Colorado
- List any or all plants within certain ecosystems (i.e., riparian, piñon/juniper) across the state
- Track noxious weed encroachment
- Track the bloom time, distribution, and numbers of our native plants over multiple seasons to see what impacts climate change and other environmental factors are having on Colorado’s native plants and their habitats, not just on one trail, but throughout the entire state. To make this information most useful, trails could be monitored on a more frequent basis for multiple factors.

To volunteer for this program or for more information, please call 970-663-4085 or e-mail CoNPSoffice@aol.com.

MONITORING NATIVE PLANTS IN THE GARDEN

The Colorado Native Plant Society is developing a new program, Monitoring Native Plants in the Garden. The long-term objective of this program is to develop an interactive, searchable database of native plants that are being grown in gardens across Colorado. The information gathered will help all gardeners, nurseries, and partner agencies to determine which natives do well in a garden setting across the state, which plants are having problems, and why.

A survey form is being developed that gardeners of native plants can obtain from our website, fill out and return to us at the end of this growing season. The information from all surveys received will be entered into the database and will be available on our website next spring to help gardeners across the state have more success with their native plant gardens. The information will also be shared with nationwide phenology sites. The survey can be repeated each season, for

comparison and research purposes, and will ask for information such as:

- Plant names, location and elevation of garden
- Irrigation amounts, rainfall amounts, pollinators present
- Soil type, micro-climates, sun/shade

Call 970-663-4085 or e-mail CoNPSoffice@aol.com for more information, to participate in the survey, or to volunteer for data entry at the end of the growing season. The survey can either be mailed to you, or you can check our website at <http://www.CoNPS.org/Activities/volunteers.html>

CHAPTER NEWS and ANNOUNCEMENTS

BOULDER CHAPTER

Boulder Chapter programs are held on the second Thursday of each month (September through April) from 7:00 p.m. to 9:00 p.m. All meetings, except as noted, are held at the Community Room at the Boulder REI Store at 1789 28th Street (between Canyon and Pearl). For more information, please e-mail Chapter President Elizabeth Drozda-Freeman at elizabeth.wildflower@gmail.com or call her at 303-586-1810. Please support zero waste: bring your own cup and plate.

New! "Fire Series". First Monday Evening of every month at REI! Same great location, same time of evening, different day of month

Join us at REI for a series of presentations regarding fire: science, history, ecology, and safety in Boulder County. Sponsored by the Colorado Native Plant Society Boulder Chapter, Boulder County Nature Association, Boulder Open Space and Mountain Parks.

Upcoming in March: In March, we start the series with the stunning NOVA special, *Fire Wars*, which documents the history of America's frontline war on wild-fires, from battling blazes to working with fires to restore forest health. It's an up-close-and-personal view of our complex relationship with fire in the west. A terrific foundation for the rest of the series.

April's speaker, Jay Stalnacker, is Boulder County Sheriff's Department Fire Manager. He has fought or managed fire in many of the roles profiled in *Fire Wars*, including as a Smoke Jumper, in the same Western ecosystems, and will take questions on the movie. His

talk, "*Becoming A Student of Fire*" is the next offering in our series.

"SEX AND THE SINGLE FLOWER"

Patrice Morrow, PhD

March 10, 2011, 6:30 to 8:00 PM

REI Boulder on 28th St.

Dr. Morrow will discuss the evolution of interactions among sedentary plants which need to have pollen moved to another plant and the bribes they offer to mobile animals to move pollen to the right places.

UPDATES ON ONGOING PROJECTS

Taylor Mountain Old Growth Ponderosa Situation

Dianne Andrews

A full explanation of the situation can be found at www.wildlandart.com/oldgrowth.html along with photographs of concern. This concerns the USFS's forest management and fuels mitigation plan in Allenspark. Dianne and Tom Andrews will be leading a CoNPS field trip to Taylor Mountain soon; dates to be announced. The dates are dependent on weather conditions there.

Long Canyon/Flagstaff Rd erosion-sedimentation project

Don D'Amico

The main goal of this project is to prevent traction sand that is applied to Flagstaff Road from negatively affecting the riparian area in Long Canyon.

UPCOMING EVENTS OF INTEREST

Wildflower Identification, Part I

Sponsored by Boulder County Nature Association

Joyce Gellhorn and Janice Forbis

Learn to recognize different plant families as well as how to identify our native species.

Indoor class: Wednesday, April 13, 6:30 to 9:30 pm

Indoor class: Wednesday, April 20, 6:30 to 9:30 pm

Field class: Saturday, April 23, 9 am to 3 pm

LICHEN FIELD TRIPS

Ann Henson has announced quarterly upcoming lichen field trips, offered in conjunction with the Boulder County Nature Association

"The Small and Colorful World of Lichens"

We have a great variety of fascinating lichens all around us. If you are interested in learning more about these organisms, consider joining me in their world. No experience is needed.

Field trips to observe lichens will be held quarterly: Remaining dates are:

June 18, Saturday

September 10, Saturday

November 6, Sunday.

Locations vary depending on weather, but, generally will go regardless.

Time is 9 AM to 3 PM.

Equipment needed is only a hand lens of any type. Water, lunch and dress according to weather with your usual good outdoor sense.

Size of group will be limited. No cost.

Register with Ann Henson with a phone call or e-mail: 303-772-8962 or annhenson@kwabena.us

Gardening With Native Plants/Cultivating Pollinators

Sponsored by Boulder Culinary Gardeners

Megan Bowes

Learn why native plants and pollinators are important in any garden.

Sunday, Feb. 20, 2011 1 p.m.

George Reynolds Branch Library, south Boulder

Lichens: Diversity, Utility, and Their Inner World

April 14, 2011

Scott Bates, Ph.D., CIRES Visiting Fellow, Fierer

Laboratory, University of Colorado at Boulder

303-492-2099 scott.thomas.bates@gmail.com

Lichens (lichenized fungi) are fascinating symbiotic "organisms", which have traditionally been thought of as a mutualistic relationship between a mycobiont (the fungus) and a photobiont (green or "blue-green" algae). Recent DNA research is showing, however, that the symbiosis may also include bacteria. This "lifestyle" has been very successful – so successful that lichens are known to survive in some of the most extreme environments on Earth (but they also do quite well in outer space). Locally, they may be familiar to you – living on trees or rock surfaces.

With a wonderful variety in form and color, lichens are quite beautiful to behold, but they have also been used for many practical purposes – from ingredients of perfumes to "biomonitors" of air pollution and forest "health". In this talk we will explore the exquisite beauty of lichen diversity as well as many interesting stories from the lichenological world. The talk will be presented by Dr. Scott Thomas Bates, who is currently a visiting fellow at the University of Colorado at Boulder, where he has been investigating lichen-associated bacteria.

"This is a lichen day"

"This is a lichen day. The white lichens, partly encircling aspens and maples, look as if a painter had touched their trunks with his brush as he passed."

– Henry David Thoreau, *Journal* (January 26, 1858)

METRO-DENVER CHAPTER

Monthly meetings of the Metro-Denver Chapter are typically held on the fourth Tuesday of the month (September through May, except November). The chapter is changing its meeting location to the Denver Botanic Gardens for the 2010-2011 year. For more information, visit www.CoNPS.org or contact Jannette Wesley (303) 969-2131 (daytime) or (303) 985-5299 (evenings).

“PROPAGATING PENSTEMONS”

March 22, 2011, 7 PM

Presenter: Bob McFarline, President of the American Penstemon Society

Location: Denver Botanic Gardens, Plant Society Building

There are over 275 recognized species of penstemon, and all of them are native to North America from Alaska down to Guatemala. A large majority of these plants are quite garden worthy and the list seems to grow annually. Most species are propagated from seed because it is so easy. However, most do quite well from cuttings. In fact, most of the hybrids must be propagated vegetatively in order for the plant characteristics to be accurately reproduced.

There are a large number of variables to consider when propagating different species of penstemon. The talk will cover the author's experience in treating the various items such as gathering seed in the wild, gathering seed in the garden, seed life, stratification, soaking seed, planting soil mixture, germination times, sunlight effect of seedlings, watering, relative ease of propagating by species, etc.

Bob is retired from a long career in engineering and software management. He attended Stanford University and worked in California, Saudi Arabia and Colorado. He became interested in plants in general and Penstemon in particular after his retirement in 1992. He is a longtime member of the American Penstemon Society and is currently serving as President. He, along with Hugh MacMillan, is a founder of the Eriogonum Society which was established in 2009.

GARDENING WITH NATIVE PLANTS

April 26, 2011, 7 PM

Presenter: Susan Smith

Location: Denver Botanic Gardens, Plant Society Building

Details forthcoming.



Allium acuminata

Photo by Tim Henson

NORTHERN COLORADO CHAPTER

Except as noted, Chapter meetings are held on the first Wednesday of the month (October through April) at 7:00 PM, at the Gardens on Spring Creek, 2145 Centre Ave., Fort Collins. Prior to meetings, members are invited to meet at 5:30 PM for dinner with the speaker at Café Vino, 1200 S. College Avenue. If you would like to join us for dinner, please contact Chapter President Pam Smith at 970-223-3453 or pamelas4824@earthlink.net.

“UNDERSTANDING SOIL, THE SKIN OF THE EARTH”

Wednesday, April 6, 2011

Presenter: Kari Sever, Soil Scientist

Soil is the basis of our ecosystem, not only supporting life, but performing vital functions that are essential to our existence on this planet. Even so, the “skin of the earth” is often taken for granted and least understood. From this presentation you will gain a basic understanding of soils and the science behind it and will take home some practical insights and applications to use in your own encounters with Mother Earth. Come prepared to get your hands dirty!

Kari Sever is a Soil Scientist for the USDA-NRCS in the Fort Collins MLRA office with over 25 years experience in the soil consulting and environmental drilling industry. She is currently working on a nationwide initiative

to inventory soil carbon to determine the effects of conservation practices on soil carbon stocks and for global carbon accounting.

BATS AND WHY THEY MATTER

Joint Meeting with Fort Collins Audubon Society

Thursday, May 12, 2011

Speaker: Dr. Rick Adams, University of Northern Colorado

Time: 7:00 pm Social Hour, 7:30 pm speaker
Location: Fort Collins Senior Center-Multi-Use Room,
1200 Raintree Drive

We will explore the natural history of bats and bat diversity as well as the ecology of bats in terms of global, regional, and local importance to ecosystem function and health. We will also discuss the major influences on the contemporary mass-extinctions of bat populations and species and what this means for the future of plant and animal food webs of which humans are an integral part. Dr. Rick Adams is a Professor of Ecology and Evolution at the University of Northern Colorado. His research integrates development, ecology and evolution of bats by addressing a diverse array of research questions including: seed dispersal by epauletted fruit bats in South Africa, the effects of natural disasters on Caribbean Island bat populations, climate-change and bats in western North America, alterations of forest structure by humans and bat foraging habits in Colorado, and the development and evolution of flight in bats.



Photo: Rick Adams

PLATEAU CHAPTER

Chapter activities are scheduled throughout the year. For more information, visit www.CoNPS.org or contact Chapter President Gay Austin at austin-ceae@frontier.net.

SOUTHEAST CHAPTER

Activities of the Southeast Chapter are scheduled throughout the year and include field trips and meetings. Regular chapter meetings (always with an educational focus) will begin in October in both Pueblo and Colorado Springs. Those wishing more information can e-mail us as SEtrips@gmail.com and we will add you to our distribution list.

Following is a report from the Southeast Chapter on their activities in support of the Society's dual mission of education and conservation.

Educational mission. -- The Southeast Chapter offered 18 successful field trips and classes during the 2010 growing season.

Field trips included ecosystems ranging from the "Birds and Botany" along Trout Creek, Teller County to the shortgrass prairie and canyons encountered in a "Descent to the Purgatory" in Otero County, and many habitats and species in between.

Classes included subjects such as "Essential Botany," our annual "Grass I.D. Workshop" (in cooperation with CSU Extension – Pueblo, and the NRCS), botanical photography, and "How to Use a Botanical Key."

The Southeast Chapter also helped support and promote the opening of the "Rare Imperiled Plants of Colorado" art exhibit presented by the Rocky Mountain Society of Botanical Artists. The exhibit is designed to educate the public and to encourage conservation of Colorado's rare botanic species and their habitats.

For information on future SE Chapter educational opportunities and field trips, please contact Ed Roland, edwardrroland@gmail.com.

Conservation mission. -- The Arkansas River valley is one of the top five hotspots for plant biodiversity in Colorado. In particular, the areas around Lake Pueblo Reservoir have four plant species that are endemic to Colorado: the Arkansas Valley Evening Primrose, *Oenothera harringtonia*, the Golden Blazing Star, *Nuttalia (Mentzelia) chrysantha*, the Pueblo Goldenweed, *Oonopsis puebloensis*, and the Round-leaf Four-o'clock, *Oxybaphus (Mirabilis) rotundifolia*. Other rare species include the dwarf milkweed, *Asclepias uncialis* and the Alpine Feverfew, *Parthenium (Bolophyta) tetraeuris*.

In collaboration with the state's Colorado Natural Areas Program – Resource Stewardship section, the southeast Chapter has embarked on two new conservation initiatives to monitor these rare plant species in their native habitats. We will be collecting information throughout the year from designated sites around Lake Pueblo State Park and its adjacent State Wildlife Areas.

In addition, along with the Wildlands Restoration Volunteers organization, we are also participating in restoration efforts in the Garden Park area near Canon City by collecting and processing native plant seeds.

For more information on these SE Chapter conservation volunteer opportunities, please contact Michele Bobyn at mbobyn@hotmail.com.

"THE CACTI OF COLORADO"

7:00 p.m., Tuesday, April 19, Colorado Springs

6:30 p.m., Thursday, April 21, CSU Extension Center in Pueblo

Don Barnett, of the Cactus & Succulent Society, will show us how to i.d. ALL of the diverse native species of cacti in Colorado, and where to find them.



Echinocereus tribochidiatus, Claret Cup

Photo by Tim Henson

THE "ESSENTIAL BOTANY" WORKSHOP

(Co-Sponsored by CSU-Pueblo Extension and the SE Chapter of the CoNPS)

Location: Meeting room and garden area of the SE Colorado Water Conservation District, Pueblo

9:00 a.m. to 2:00 p.m., Saturday, April 30

Class on the botany you need to know to effectively use keys like "Colorado Flora Eastern Slope," then lots of i.d. practice with native plants from the garden. Team-taught by Dr. Neal Osborn with assistance from Linda McMulkin and Ed Roland.

www.conps.org

If you haven't checked out the new CoNPS website, you should do that soon! Many thanks to our webmaster, Yongli Zhou and website editor, Linda Smith.

SOUTHWEST CHAPTER

CHAPTER PRESIDENT NEEDED!

If you know of someone who would make a great Southwest Chapter president (or you think you might be that someone yourself), we would love to have your nomination.

The major duties of the chapter president are to:

- serve as a voting member of the CoNPS board of directors;
- represent the chapter, either in person or via teleconference calls, at up to four Board meetings annually;
- plan and arrange field trips, workshops, and other chapter programs and activities;

-maintain an e-mail data base of chapter members and send (or forward) regular e-mail updates on chapter and statewide activities that might be of interest to members; and

- make logistical arrangements for chapter meetings and activities.

Some of these duties can be shared by finding volunteers or designating chapter members to lead them (e.g., coordinating field trips) or by other officers the chapter may elect (e.g., Vice President).

On average, these duties probably require two to five hours per week. Less time is generally required during the summer months, and more during the rest of the year (with more chapter meetings, board meetings, etc.).

Please let Crystal Strouse, CoNPS President, know of your interest or nomination by June 1. Her e-mail address is csnativeplants@gmail.com.

COMMITTEE NEWS and ANNOUNCEMENTS

VOLUNTEER OPPORTUNITIES

WORKSHOPS COMMITTEE CHAIR, WORKSHOP HOST

Volunteers are needed to chair of the Workshops Committee and to serve as hosts of CoNPS workshops.

Workshops are one of the most important ways by which CoNPS encourages knowledge and interest in Colorado native plants.

The Committee chair is responsible for soliciting proposals for workshops, obtaining volunteers to conduct the workshops, and assuring that logistical arrangements are made in support of the workshops.

The Committee chair must be willing to spend a fair amount of on the phone to set up workshops with pre-

senters in the winter months. There are a number of members who can help identify people to contact about giving workshops. It is necessary to spend the upfront time *in the winter* (or at least as soon as possible) so that presenters have the summer season to collect specimens for dissection at the workshop. This project might take 10-12 fairly lengthy phone calls over several weeks to set up a full season of seven workshops. During this phone call, a subject, date, biography info and expectations are set. The follow-up of writing letters to confirm and give pertinent details takes a few hours, perhaps ten. This part of the overall job should be done by the Committee chair.

The next job is hosting the workshops. This part could be done by 1 or 2 different people. Once a location is determined for each workshop, the host opens the building, sets up snacks and microscopes & video equipment and helps speaker get ready. The host can stay or leave for the workshop. We offer "free" workshops to those who host. The host must arrive at least

45 minutes before and stay to clean up, usually about 1/2 hour after. So, depending on the workshop and assuming the host stays to enjoy the presentation, it might involve a total 7 hours per workshop.

One or more of the previous Workshop chairs will be happy to provide an orientation and training on what's involved in conducting a successful Workshops season.

If you are interested in either chairing the Workshops Committee or in hosting workshops, please contact CoNPS President Crystal Strouse at csnativeplants@gmail.com.

VOLUNTEER OPPORTUNITY

CONSERVATION COMMITTEE CHAIR

A volunteer is needed to chair the CoNPS Conservation Committee. This is a great opportunity to be actively involved as the Society endeavors to become more proactive in plant and habitat issues across the state.

Major duties include:

- staying abreast of Federal, state, and local land management actions that may be of interest or concern to the Society, and keeping members informed and involved;

- coordinating proactive efforts with partner organizations, such as those involved in the Colorado Rare Plant Conservation Initiative; and

- soliciting appropriate articles and information to be included in *Aquilegia*, the Society's newsletter, for the benefit of members.

The amount of time required to carry out these duties varies considerably, but would generally require two to five hours each week in e-mail correspondence and other interchange with partners and members. At times, considerably more time might be required in responding to ongoing issues.

Additional information on the committee's activities, partners, and conservation issues can be found on the CoNPS website (www.CoNPS.org), or by contacting any Board member, or CoNPS President Crystal Strouse at csnativeplants@gmail.com.

SOCIETY NEWS and ANNOUNCEMENTS

NEW PUBLICATIONS IN THE CoNPS BOOKSTORE

Bringing Nature Home: How You Can Sustain Wildlife with Native Plants, Douglas Tallamy; \$14.50 (\$2.75 shipping)

Calochortus: Mariposa Lilies and their Relatives
M. Gerritson and R. Parsons; \$23.00 (\$2.75 shipping)

How to Know the Mosses and Liverworts: Pictured Key Nature Series, Conrad & Redfearn; \$58.00 (\$2.75 shipping)

Island of Grass, Ellen Wohl; \$20.00 (\$3.00 shipping)

The Kingdom Fungi: Biology of Mushrooms, Molds and Lichens, S. Stephenson; \$27.00 (\$3.50 shipping)

Medicinal Plants of the Desert & Canyon West
M. Moore; \$14.00 (\$2.75 shipping)

Medicinal Plants of the Mountain West

M. Moore; \$20.00 (\$3.00 shipping)

A Natural History of the New World: Ecology & Evolution of Plants in the Americas, Alan Graham; \$34.00 (\$3.00 shipping)

To order, find an order form at

<http://www.CoNPS.org/pdf/Bookstore/Book%20order%20form.pdf>

These books are also available for sale at the Boulder Chapter meetings and the CoNPS East Slope workshops, usually held at the CSU Extension office in Longmont. E-mail Linda at CoNPSoffice@aol.com if you have questions.

AQUILEGIA

Newsletter of the Colorado Native Plant Society

Aquilegia is the newsletter of the Colorado Native Plant Society, and is available to members of the Society and to others with an interest in native plants. Four regular issues are published each year, plus a special issue for the annual Society meeting held in September

Announcements, news, articles, book reviews, poems, botanical illustrations, and other contributions should be sent to the editor at bh.prairieink@gmail.com, who can provide editorial guidelines.



Please direct questions or comments regarding the newsletter to the editor at bh.prairieink@gmail.com.

Deadlines

Submissions to *Aquilegia* are accepted throughout the year, although deadlines for publication are:

- February 15 (Spring issue, published March 1)
- April 15 (Summer issue, published May 15)
- June 15 (Annual Meeting issue, published July 15)
- July 15 (Fall issue, published Aug. 15)
- October 15 (Winter issue, published November 15)

All contributions are subject to editing for brevity and consistency, with final approval of material changes by the author.

Articles from *Aquilegia* may be used by other native plant societies or non-profit groups, if fully cited to author and attributed to *Aquilegia*.

NEWSLETTER AVAILABLE BY E-MAIL

Do you know that *Aquilegia* is available electronically? You could receive your issue of *Aquilegia* by e-mail. This saves postage costs as well as paper and printing costs. Please request your change from paper with Eric Lane via e-mail at ericmlane@yahoo.com,

Be sure to include your e-mail address.

PHOTOGRAPHY



Photo by Tim Henson

The exceptional photography in this issue is largely the work of Tim Henson.

Tim is retired from teaching biology and geology in the Longmont area, and now pursues photography, bird-watching, and numerous volunteer activities. He is generally observed in the same habitats as Ann Henson, former CoNPS President.”

These photographs are just a few of the collection shown by Ann Henson in her presentation on wildflowers at the February meeting of the Northern chapter.

MEMBERSHIP APPLICATION AND RENEWAL FORM

Name(s)
 Address
 City State..... Zip
 Phone ____-____-____ E-mail

MEMBERSHIP CLASS

Dues cover a 12-month period.

- ___ Individual (\$20.00)
- ___ Family / dual (\$30.00)
- ___ Senior (65+) (\$12.00)
- ___ Student (\$12.00)
- ___ Organization (\$30.00)
- ___ Supporting (\$50.00)
- ___ Lifetime (\$300.00)

CHAPTER

You are free to affiliate with any chapter you choose and to attend the meetings of any chapter. Chapters do not have drawn map boundaries; the locations below indicate the usual meeting place of chapter meetings.

- Boulder Metro-Denver Northern
- Plateau Southeast Southwest

OPTIONAL E-MAIL DELIVERY OF *Aquilegia*

Many members prefer to receive the newsletter electronically via e-mail, and this saves the Society considerable printing and postage expense. If you would like to receive the newsletter by e-mail, please check this box and provide your e-mail address above.

- Please deliver *Aquilegia* electronically to the above e-mail address.

DONATION

\$ _____ General Fund

Endowments in support of small grants-in-aid of research:

- \$ _____ John Marr Fund: research on the biology and natural history of Colorado native plants.
- \$ _____ Myrna P. Steinkamp Memorial Fund: research and other activities to benefit the rare plants of Colorado

Mail to: Eric Lane, P.O. Box 200, Fort Collins, CO 80522

Please make checks payable to "Colorado Native Plant Society"

Dues and contributions are tax-deductible.

NEW and RENEWING MEMBERS

Paul Alaback, Julie Barter, Thomas O Bates, Marie Baum, Lena M Beauchamp, Cassandra Bohnet, M Deane Bowers, Barbara Brand, Benjamin Brayden, Jim Bromberg, Ed Carter, Ann Kurz Chambers, Chris & Kim Chereck, Bill Cisney, Mark Cowhick, Audrey Coyle, Mark Cruz, Andrea Cummins, Lee Curtis, Nan H Daniels, Ken Draves, Christopher Dugan, Joe Ehrenberger, Mimi & Larry Elmore, Scott Franklin, Renee Galeano-Popp, Jeannie Girard, Evan Gohring, Gail & Charles Gray, John Grodt, Mia Hannon, Doug Harmon, Philip Harrison, Ronald L Hartman, John Hauptli, Barbara Hawke, Anne Henry, Tom Hombs, Rebecca Irwin, Callie James, Michael Kirkpatrick, Ronda & Tony Koski, Chris Kulish, Alicia Langton, Bill & Shirley Loessberg, Rick McNeill, Karin McShea, Cheryl Mention, Marlene T Miller, Marilyn Moore, Elise Mulder, Mare Nazaire, Jean Nelson, Ruth Mccorrison & Steve Odendahl, William Petry, Jamie Port, Megan Reehl, Steven Rolfmeier, Judy Ronzio, Robert Schaeffer, Donna Schultz, Eric Scott, Meredith Sears, Susan Simons, Elaine Smith, Michael A Spangler, Patricia Stuckey, Christine Tagila, Celia Tannehill, Amy Trowbridge, Barbara Vining, Matthew Webb, Jim Weedon, Donnetta Wilhelm, and Amanda Wilson

Colorado Native Plant Society



The Colorado Native Plant Society is dedicated to furthering the knowledge, appreciation and conservation of native plants and habitats of Colorado through education, stewardship and advocacy.

Membership is open to all with an interest in our native plants and is composed of plant enthusiasts, both professional and non-professional.

Please join us in learning about, enjoying and protecting Colorado's native plants.

OFFICERS

President	Crystal Strouse	csnativeplants@gmail.com
Vice President	Bernadette Kuhn	bernadettekuhnCoNPS@gmail.com
Treasurer	Mo Ewing	moewing@q.com
Secretary	Nan Daniels	nahada@msn.com
Administrative Assistant	Linda Smith	CoNPSoffice@aol.com

CHAPTER PRESIDENTS

Boulder	Pam Sherman	boulderCoNPS@gmail.com
Northern	Pam Smith	pamelas4824@earthlink.net
Metro-Denver	Jannette Wesley	metrodenverCoNPS@gmail.com
Plateau	Gay Austin	austinaceae@frontier.net
Southeast	Ann Zielinski	zielinski.agnesann7@gmail.com

BOARD OF DIRECTORS

Director	Carol English ('12)	grownative@msn.com
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"	Jenny Neale ('13)	nealejr@gmail.com
"	Robert Powell ('11)	robertlpowell@durango.net
"	Jan Turner ('12)	jltturner@regis.edu
"	Charlie Turner ('11)	turner@rabbitbrushpublishing.com
"	Steve Yarbrough ('11)	steveandkenna@msn.com

STANDING COMMITTEES

Conservation	Vacant	
Education and Outreach	Megan Bowes	bowesm@bouldercolorado.gov
Field Studies	Steve Popovich	stevepopovich@hotmail.com
Horticulture and Restoration	Megan Bowes	bowesm@bouldercolorado.gov
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Sales	Linda Smith	CoNPSoffice@aol.com
Workshops	Steve Yarbrough	steveandkenna@msn.com

WATCH THIS SPACE!

Future issues of *Aquilegia* will feature brief vignettes of rare and unusual native Colorado plants, as well as key habitats.



Colorado Native Plant Society

P.O. Box 200
Fort Collins, Colorado 80522
<http://www.CoNPS.org>



CALENDAR 2011

(see inside for details)

BOARD MEETINGS

April 2 Board Meeting, Regis University, Denver

WORKSHOPS

March 19 "Ferns"

March 19 "Native Plants on Federal Lands: How to Use
Federal Documents to Conserve Plants"

AQUILEGIA DEADLINES

April 15 Summer Issue

June 15 Annual Meeting Issue

July 15 Fall Issue

October 15 Winter issue

BOULDER CHAPTER

March 10 "Sex and the single flower"

April 14 "Lichens: Diversity, Utility, and Their
Inner World"

METRO-DENVER CHAPTER

March 22 "Propagating Penstemons"

April 26 "Gardening with Native Plants"

NORTHERN CHAPTER

April 6 "Understanding Soil, The Skin of the
Earth"

May 12 "Bats and Why They Matter"

SOUTHEAST CHAPTER

April 19 and 21 "The Cacti of Colorado"

April 30 "The 'Essential Botany' Workshop"

and the 24 field trips inside!