

Aquilegia

Newsletter of the Colorado Native Plant Society

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Volume 40 No. 1 Winter 2015- 2016

Colorado Native Plant Society

Dedicated to furthering the knowledge, appreciation, and conservation of native plants and habitats of Colorado through education, stewardship, and advocacy

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Aquilegia is the newsletter of the Colorado Native Plant Society. Members receive four regular issues per year (Spring, Summer, Fall, Winter) plus a special issue for the Society Annual Conference held in the Fall.

All contributions are subject to editing for brevity, grammar, and consistency, with final approval of substantive changes by the author. Articles from *Aquilegia* may be used by other native plant societies or non-profit groups, if fully cited to the author and attributed to *Aquilegia*.

The deadline for the next issue is May 10.

Announcements, news, articles, book reviews, poems, botanical illustrations, photographs, and other contributions should be sent to the editor.

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Want to Learn About Thistles, Photography, Willows, Wetland Plants, and More?

Sign up now for CoNPS Summer Field Seminars!

In a recent SurveyMonkey poll, CoNPS members said they wanted summer field seminars. A number of field seminars have been scheduled on the Eastern and Western Slopes. A catalog of seminars was sent out last month and an updated version will be sent out soon. The Summer Field Seminars are also described in this issue of *Aquilegia* on pages 14-19. These are wonderful educational opportunities.

In addition to the special event offered by John Fielder, field seminars include:

Eastern Slope: Beneficial Arthropods, Colorado Native Plants for Urban Landscapes, Botany in a Day, Ute Indian Prayer Trees, Botany in a Day, Field Plant Ecology Skills, Thistle Identification, Willow Identification, Dendrochronology, Grass Identification, Colorado Bumblebees, Butterfly Natural History, Designing with Native Plants for Pollinators, Itinerant Field Plant Ecology, Wetland & Riparian Plants, and Riparian Plant ID, Ecology, and River Restoration Criteria

Western Slope: Ecological Diversity within Sagebrush Steppe, Thistles of Gunnison, Medicine on the Wild Side: What Insects Can Teach Us About Chemicals in Nature, Natural History of Rocky Mountain Pollination, Ecology & Botany of Iron Fens in the San Juans, Grasses of the Grand Junction area, Colorado Native American Ethnobotany, Wetland Flora ID, and Lichens ID.

Front cover: *Cirsium scopulorum* on LaPlata Peak. Photo © Tami Kochen, 2nd place winner, Native Plant Category, 2015 CoNPS Photo Contest.



More information about John Fielder's Summer Field Seminar on Photography on page 17. Sign up soon to be guaranteed a place in the class!



The Year in Review 2015

by Jan and Charlie Turner, CoNPS Presidents

The year 2015 could be summarized as a year of many exciting changes for CoNPS. Chapters offered a record-breaking number of field trips (close to 60) and committees were extremely busy and productive. Board meetings have been energetic and synergistic, with many good ideas coming from the discussion

of the Board members who include the officers, chapter presidents, committee chairs, and Board members at large. The Board has been honored to have Jack and Martha

Carter, who returned to Colorado after many years in Silver City, NM, attend some of the Board meetings and share their ideas with the Board. The work of volunteers has been outstanding this year with much to show for their efforts.



Charlie & Jan Turner, Co-Presidents

2015: A Year of Big Changes

- 1. New staff position: Marketing & Membership Coordinator - Jen Boussetot began July 2015**
- 2. New website run on WordPress enabling multiple people to edit it**
- 3. CoNPS has a new chapter, the Southwest Chapter based in Durango**
- 3. So many events and activities: record number of volunteers and committee & chapter activities**
- 4. A CoNPS fund-raiser helped Jennifer Ackerfield raise enough money to have her book, *Flora of Colorado*, published by BRIT.**

After discussion and brainstorming about the need for a greater advocacy role for CoNPS (as reflected in the 2014 advocacy survey), the Board decided that additional staff support was needed in order to facilitate communication, promote and help to organize volunteer opportunities, and increase membership to a level that we could afford to hire an Advocacy Coordinator. With improvements in these areas, CoNPS would be in a better position to recruit and coordinate volunteers for conservation projects and also to better support the goals of CoNPS' other committees. A new staff position, Membership & Marketing Coordinator, was created and Dr. Jennifer Boussetot was hired to fill the position. Jen started the half-time job in July 2015 and her role involves communicating with members



Jen Boussetot, Membership & Marketing Coordinator

through social media and email to keep them up-to-date with CoNPS news and events, helping chapter presidents and committee chairs find volunteers for events and projects, increasing CoNPS' presence at events throughout the state, and supporting and growing the membership. Jen's CoNPS E-News is sent out approximately every 10 days, keeping members up-to-date on news about CoNPS and its partner organizations and containing a calendar of current field trips, programs, workshops, field seminars, and volunteer opportunities. As social media coordinator, she facilitates the work of CoNPS Facebook Master, Carol English, and Twitter Master, Sally White. Another important function of the Membership & Marketing Coordinator is to grow the membership to a level that will make CoNPS more sustainable as an organization. In the short time she has been with CoNPS, Jen has already increased membership, increased communication through E-News and social media, and been a great help at many events. She seems to have unlimited energy and enthusiasm.

CoNPS has a beautiful new website that uses WordPress. Conservation Chair and Treasurer, Mo Ewing, took it upon himself to create the WordPress website from scratch, a project that took innumerable hours. Mo was assisted by CoNPS' hard-working Administrative Coordinator, Linda Smith, who spent countless hours helping Mo. By creating the site through WordPress, more than one person can update the site. In the past, only one person, the webmaster (who was a computer expert), could update the website. If that person was on vacation or busy, the website could not be updated. Mo is now CoNPS Webmaster, Charlie Turner is Assistant Webmaster, and Linda Smith is Web Editor. Kudos to Linda who worked more hours than usual despite her broken leg.

A membership plug-in was purchased for the website, allowing membership functions and events to become more automated. Charlie Turner did a great deal of the work helping set up the plug-in. The membership plug-in insures that membership data is always up-to-date and provides an accurate list of members and their status. It allows members to update their status themselves with their latest email address, mailing address, and phone number. It sends out renewal notices and membership notices automatically. It allows people to sign up for field trips, workshops, field seminars, and other events through the website. Chapter presidents and committee chair can post events themselves (without having to wait for the webmaster to do it) and send out emails to their groups easily, knowing the list is always up-to-date. Although it might make CoNPS seem less "small town", it was an important change in terms of reducing the information that had to be added and maintained manually. Linda Smith, Charlie Turner, and others help Mo to update events and other information on the website.

CoNPS had an extremely busy year, offering many events, volunteer opportunities, and fund-raising for important causes. One important fund-raiser was to help raise enough money for the printing and publication of *Flora of Colorado* by Jennifer Ackerfield. Thanks to the generosity of CoNPS members including a large donation from Charlie Maurer, CSU alum and former student of



Jennifer Ackerfield
Photo by Jan Turner

Harold Harrington, enough money was raised for *Flora of Colorado* to be printed in 2015. This is the first time since the publication of Harold Harrington's *Manual of the Plants of Colorado* (1954, 1964), that a key and descriptions have been available in one volume for the plants of the entire state of Colorado. CSU held a special reception for Jen celebrating the publication of her book.

Chapters, Committees, & Events

In addition to the record number of field trips, some of the CoNPS chapters (Boulder, Metro Denver, and Northern) also offered monthly winter programs on a variety of interesting topics. The presidents of the chapters are Erica Cooper (Boulder), Nanette Kuich (Gore Range), Samantha Clark (Metro Denver), Stephen Smith (Plateau), Ronda Koski (Northern), Richard Bunn (Southeast), and John Bregar (Southwest).



Many people attended the Denver Chapter Program in February 2016 to hear Dave Anderson, Executive Director of the Colorado Natural Heritage Program (CNAP) speak about the Natural Heritage of the Denver Area. Photo courtesy of Sam Clark.

After a number of years as Metro Denver Co-Presidents, Janette Wesley and Jeanne Willson decided they needed some time off and resigned as Co-Presidents although they continue to be active in CoNPS. Jannette is still in charge of planning the Metro Denver Chapter field trips (she is amazing!) and is on the Annual Conference Planning Committee, and both Jannette and Jeanne are leading field trips. Ecologist Samantha "Sam" Clark became the new Metro Denver Chapter president. As soon as her field season ended, Samantha scheduled a number of excellent speakers for the Metro Denver Chapter programs that are usually held monthly on Tuesday evenings at Englewood Public Library. By the end of the season, the Metro Denver programs were standing room only (see photo)! The Boulder Chapter was active in local advocacy, working with the CoNPS Conservation Committee commenting on the North Trail Study Project. At the end of 2015, CoNPS welcomed a new chapter, the Southwest Chapter based in Durango. John Bregar is the President of the chapter (see p. 20).

The CoNPS committees have been exceptionally busy. The Education & Outreach (E&O) Committee, chaired by Sara Copp, has been involved in many activities this year. They co-sponsored events such as "Pulling (Weeds) for Colorado at Bear Creek Lake Park" with the City of Lakewood; "Winter Willow ID course" with the Society for Ecological Restoration - Central Rockies Chapter; and "Wildflower Hike on Green Mountain" with the City of Lakewood and BLM. Jack Carter (Professor Emeritus, Colorado College) has taken an active role as a member of the Education & Outreach Committee, staffing a table for CoNPS at the Colorado Association of Science Teachers Convention. Tom Zeiner assisted at the convention and also staffed a CoNPS table at the Crested Butte Wildflower Festival. Cecily Mui and CoNPS VP, Irene Shonle, represented CoNPS in 2016 at the Colorado Weed Management Association Conference. Sara Copp has staffed CoNPS tables at a variety of events including the Southern Rockies Seed Conference. The E & O committee also had an exhibit at the Sustaining Colorado Conference and High Plains Environmental Center. They were also involved in planning and implementing the 2016 Colorado Weed Network Meeting, teaching "Intro to Plant Identification" courses at Louisville Open Space and Loveland Museum, presenting "Gardening with Native Plants: Creating Colorado Connections" at a local garden club. Sara Copp also started a CoNPS Linked-In page. Membership & Marketing Coordinator, Jen Boussetot, could often be found staffing tables at events and helping Sara and other committee chairs. There are a number of volunteers who have provided their time and talents to the committee and we are grateful for their contributions.



Jack Carter, Tom Zeiner, and Jen Boussetot (not pictured) represented CoNPS at the Colorado Science Teachers Conference. Photo by Sara Copp.

Instead of consisting of one person (Mo Ewing, the committee chair), the Conservation Committee has grown to 45 members and has had very productive brainstorming sessions about specific actions that committee would take to impact the conservation of native plants. This has involved advertising the projects of other organizations to provide volunteer support in conservation and restoration efforts. Partners have included Wildlands Restoration Volunteers, the Southern Rockies Seed Network, and Rocky Mountain Wild. The committee is working on a phenology trail program and made public comments on Colorado State Wildlife Action Plan SWAP, Boulder's North Trail Study Project, and the Board voted to sign the statement of the Endangered Species Act Coalition. Many CoNPS members are involved in the Colorado Natural Areas Stewards Program and the Rare Plant Monitoring (Adopt-a-Rare Plant Program). See page 25 for conservation volunteer opportunities.



Native Plant Sales at Annual Conference : Mikl Brawner of Harlequin's Gardens (L) and Jim Tolstrup of High Plains Environmental Center. JLT



An Annual Conference Planning Committee, chaired by Jan Turner, was formed to give continuity to the planning of annual meetings (now called annual conferences) and take the burden off the chapters. In addition to Jan Turner, the committee includes Jessica Smith, Tom Schweich, Irene Shonle, Jen Boussetot, Charlie Turner, Lenore Mitchell, Jannette Wesley, Steve Olson, Carol English, and Don Parker. Other volunteers (and staff) included Linda Smith (who worked in spite of her broken leg), Patrick Murphy, Denise Wilson, Carol English, Kathy Brown, and Cecily Mui. The committee put on their first conference, independent of a chapter.

The theme was pollinators and native plants. The conference was well attended (over 180 attendees) held at the American Mountaineering Center in Golden. The conference buzzed with activity, beginning with the Colorado Rare Plant Symposium, where attendees enjoyed a dazzling slide show of beautiful Colorado rare plants and a reports of discoveries of new occurrences of some of the plants. This was followed by the CoNPS Friday night pizza social. On Saturday, the conference was fast-paced with many speakers on the topic on pollinators and native plants, a gigantic booksale run by Pat Murphy with the assistance of Linda Smith and Denise Wilson, the silent auction, vendors, photo contest, and a native plant sale.

Jack and Martha Carter and Vickey Trammell received special merit awards for their many contributions to Colorado native plant education and Mo Ewing received the SuperMo award for his creation of the new CoNPS website and his many other contributions to CoNPS. The CoNPS Annual Photo Contest, run by Steve Olson, was held at the conference and winners were selected by members' votes. On Sunday, many people attended field trips that had been organized by Lenore Mitchell. There were many popular field trips but people were especially excited to attend Jen Ackerfield's field trip so shortly after the publication of her book, *Flora of Colorado*.



SuperMo by Rob Pudim

Two new members were elected to the CoNPS Board at the election at the Annual Conference: Cecily Mui (Noxious Weed Specialist, Colorado Dept. of Agriculture) and Amy Yarger (Director of Horticulture, Butterfly Pavilion) filled the vacancies. They are both dynamic people and as soon as they joined the Board they immediately began to participate and assist in volunteer activities.

The Horticulture & Restoration Committee, chaired by Jim Tolstrup, collaborated in the Native Plant Sale and Seed Swap of Front Range Wild Ones, spearheaded by Susan Crick Smith and Linda Hellow. An H & R subcommittee, the Native Plant Garden Guides Committee, chaired by Irene Shonle, completed research and writing of the native plant guides for five regions of the state; next will be the editing and layout and design of the booklets. They also produced a full-color, two-sided, professionally printed handout on native plants that attract pollinators that was distributed at the Annual Conference.



Dave Elin's photo of *Penstemon grahamii* won first place in the CoNPS Photo Contest, Native Plant category.

The Field Studies Committee, chaired by Steve Popovich, conducted three field study trips. Steve Olson, USFS Botanist, hosted a bioblitz on June 26-28 in the Huerfano County portion of the Wet Mountains. CoNPS members collaborated with Colorado Natural Heritage Program, Denver Botanic Gardens, and Colorado College botanists to conduct a thorough field assessment of prairie woodland plants in burned areas on the Pineries Open Space in the Black Forest northeast of Colorado Springs on May 15-16 and July 17-18. Judy von Ahlefeldt organized and led these field studies.

Ronda Koski, Workshop Coordinator, again offered a great selection of workshops, including some on the Western Slope.

Sales Committee chair, Linda Smith, reported that the Bookstore carries 87 different titles (9 of them new for 2015) and sales were almost \$6,000 higher than in 2014. Pat Murphy does a tremendous job selling CoNPS books at Boulder Chapter meetings, workshops, and the annual conference. Check out the Bookstore on the new website!

The Research Grants Committee (Cath Kleier, chair) awarded \$3,435 in grants to Carla DeMasters, Vanessa Diaz, Gabriella Pardee, and Moneka Worah (Marr Grants) and Brandee Wills (a Steinkamp grant).

We are grateful to all who have volunteered for CoNPS, those who have attended CoNPS events, and those who support CoNPS through their memberships. We are grateful to the many contributors who support CoNPS financially, funding projects, research, and books. Together we make up a community that is actively learning about and sharing our knowledge of native plants, working to preserve the plants and their habitats, and planting native plant habitat gardens. This group has a lot of good energy and great accomplishments. Thank you for being a part of it!

A reminder...please volunteer. It is the effort of CoNPS' volunteers that achieves CoNPS' mission and makes Colorado a better place for native plants, their habitats, and people who love nature.

A Photographic Report on Reznicek's 2015 *Carex* Workshop

by Loraine Yeatts



Have you ever wondered why we don't eat puffed sedge achenes for breakfast? Then you should have been one of the 21 fortunate, soon to be sedge aficionados who attended Tony Reznicek's advanced *Carex* workshop in Gothic, CO, August 28 – 30, 2015. It was sponsored by CoNPS and Denver Botanic Gardens' (DBG) Research Department and organized and orchestrated by Leo Bruederle (UC Denver) and Melissa Islam (DBG). The event was held at the Rocky Mountain Biological Laboratory (RMBL) and participants were impressed by the classroom, lab facilities, excellent food and lodging, and the help of Jennifer Reithel and staff (1).

Our instructor, Tony Reznicek, Curator of the University of Michigan herbarium, is the co-author of the genus *Carex* treatment in *Flora of North America*, and an inspirational teacher. Beginning with an afternoon lecture on Friday we learned that genus *Carex* of approximately 2000 species is the largest genus in the Cyperaceae family, the seventh largest family worldwide with approximately 105 genera and 6000 species. Characteristics that separate sedges from other members of Cyperaceae were noted as well as those that group carices into subgenera. Excellent slides illustrated Reznicek's presentation.



Following a dinner break, we reconvened in the lab that was equipped with quality microscopes to delve into the intricacies of *Carex* identification. Using multiple keys we worked on our own personal specimens or those supplied by Tony who patiently guided us along the way. It was a remarkable opportunity to study and compare species, many rare and often overlooked in the field. At 10 p.m. some of us had to be urged to retire in spite of being overwhelmed by sedge hallucinations. (2)



Saturday featured an all day 5.5 mi. roundtrip hike to North Pole Basin in the Ragged Wilderness north of Gothic to view carices in habitat. With an eye on the gathering storm clouds, Tony charged ahead to a lunch-stop near timberline where the *Carex* treasure hunt would continue (3). In addition to his encyclopedic knowledge, Tony, visiting from the lowlands of Michigan, must have amazing lungs and cold tolerance, because he appeared unaffected by the high altitude or chilly air that had the rest of us shivering in jackets.

Jan Wingate had supplied all of us with the latest version of her upcoming *Carex* key which we avidly tested. Feedback from Tony and his entourage has been extremely valuable for Jan in the production of her final version that she hopes to have available later this year.

Highlights of the field trip included discovery of large tundra patches of *Carex engelmannii* (4) and *C. pseudoscirpoidea* (5). Between a bounding willow carr and the stream, *C. gynocrates* (6), a relatively rare diminutive sedge, was found sheltering among horsetails and grasses in seeping mud.



4



5



6

Those who occasionally lifted their eyes above sedge level were rewarded with dazzling late summer flowers and fauna. Scott Ellis identified a northern blue butterfly, *Plebejus idas* ssp. *ublivens* (7), considered imperiled in Colorado, another fortuitous find. In-vigorated by spectacular scenery, gorgeous flowers (including *Cirsium eatonii*) (8) and too many *Carex* species to remember, most of the sedgeophiles returned to the lab after dinner for another intense keying session.



7



8

Our Sunday morning field trip to Rock Creek in Paradise Basin provided the opportunity to observe riparian and wetland species, unintimidated by the icy water in which we and they were standing (9). As departure time approached, even Tony was feeling the rigors of our exciting treasure hunt. According to Pam Regensberg, who was collecting specimens for the Denver Botanic Garden herbarium, we saw at least 17 *Carex* species (listed below).



Photo on right:
Carex kelloggii

All who participated in this workshop owe Tony, a mentor par excellence, an immense debt of gratitude for generously and enthusiastically sharing his knowledge and helping us hone our identification skills ! A second round of applause goes out to organizers, Leo Bruederle, Melissa Islam, Jennifer Reithel and RMBL for providing us with an unforgettable experience. If you would like to take a class at the Rocky Mountain Biological Laboratory, full-day seminars are being offered on July 16 & 17 (see page 15).

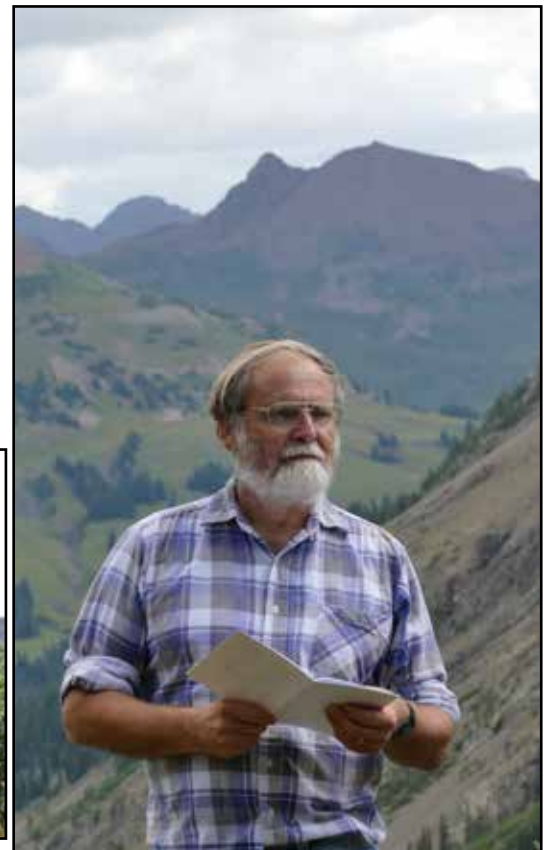
Loraine Yeatts is a botanist with the Denver Botanic Gardens Katheryn Kalmbach Herbarium, a photographer, and co-author with Jan Wingate of Alpine Flower Finder.

Carex species seen on field trip:

- C. aquatilis*
- C. aurea*
- C. chaciolepis*
- C. ebenea*
- C. egglestonii*
- C. elynoides*
- C. engelmannii*
- C. gynocrates*
- C. haydeniana*
- C. illota*
- C. kelloggii*
- C. microptera*
- C. pellita*
- C. pseudoscirpoidea*
- C. rossii*
- C. saxatilis*
- C. utriculata*



Above: Author of article, Loraine Yeatts Photo by Carol English. **Right:** Leo Bruederle and *Carex pseudoscirpoidea*. **Far Right:** Dr. Tony Reznicek



CHAPTER FIELD TRIPS

New Method for Field Trip Sign Up

Field trip sign-up has changed. You can do it all online now. Just go to CoNPS website (<http://conps.org>) and sign in as a member. Go to the Calendar of Events and scroll down to the date of the event. Double-click on the event and register. For questions contact conpscturner@gmail.com.

BOULDER CHAPTER

The Boulder Chapter field trip schedule is not available yet. The field trips will be in the Schedule of Events on the CoNPS website and listed in the CoNPS E-News as soon as the information is available. They will also be listed in the next issue of *Aquilegia*.

GORE CHAPTER

Peak 7 area (Breckenridge Area)

Date & Time: July 16 (Sat.) – 9 a.m. to 5 p.m.

Leader: Jane Hendrix

METRO-DENVER CHAPTER

Note: Physical difficulty of hikes is rated from 1 to 5 with one being the easiest. Please do not forget to bring cash to reimburse the driver when carpooling.

Patridge Open Space Park

April 23 (Sat.) 9:30 a.m. to 12:30 p.m.

Leader: John Vickery

During spring, an outwash mesa blooms with flowers near the town of Leyden in this Arvada Open Space Park. Expect ~20 species. We will visit the mesa that lies to the SW of the hamlet of Leyden (between W. 82nd Ave to the N, Hwy. 93 to the W, and Arvada/Blunn Reservoir to the S.) The area is a relatively small part of this mesa that represents the best combination of ease of parking, shortness of access hike, and quality/diversity of plant community. Our destination is the NE slopes of the mesa. Intermediate level 2 hike. We will focus on forbs in bloom. Last year plants included: *Lomatium orientale*, *Townsendia hookerii*, *Musineon divaricatum*, *Lesquerella montanum*, *Comandra umbellatum*, *Erysimum capitatum*, *Leucocrinum montanum*, *Astragalus shortianus*, *Astragalus crassicaarpus*, *Gilia spicata*, *Vicia linearis*, *Pediocactus simpsonii*, *Nothocalais cuspidata*, *Orophaca tridactylia*, *Viola nuttallii*, and *Castilleja integra*. There is a trail from the modestly improved parking area to the plant ID area but once there, we will largely be off trail. There is an at-grade, trail crossing of Leyden Creek/Barbara Gulch. No restroom or port-a-let.

Meet at Patridge Open Space at the west end of the hamlet of Leyden along 82nd Ave. in Arvada. (Some maps will show this as 80th Ave. It changes from 80th to 82nd between Alkire and Simms). Park near the corner of W 82nd Ave and 3rd Ave. (3 blocks W of Quaker St.), either on the W side of 3rd Ave adjacent to the grey-green Water District building or to the N of this building in a slightly improved trailhead parking area.

Access to the Leyden area from the W is from Hwy 93 (Boulder-Golden Hwy). 82nd Ave. is the first E-W road to the south of Hwy 72 (Coal Creek Hwy) and the first road to the N of W 64th Ave—the road that goes along the S side of Arvada (Blunn) Reservoir. Access from the E is on 80th/82nd Ave—from many N-S roads such as Indiana, Kipling, Wadsworth, and Sheridan.

Rocky Mountain Arsenal National Wildlife Refuge

April 27 (Wed.) 9 a.m. to 11 a.m.

Leaders: Dennis Mead & Georgia Hart

Prairie plants, native plant garden, native prairie grasses, riparian habitat, short walks on good trails. Casual and more advanced botany. The plant walk will be guided by a Refuge volunteer who specializes in prairie flora and will be able to help with plant ID. Photography options. We will start with comments on the re-seeding of the Refuge with native prairie grasses (to replace agricultural and other non-natives). We will create a list of plants in the area of Lake Mary and Lake Ladora.

Good gravel trails. Walk 0.5-1.5 miles as desired. Bring hat, water, plant ID book. Level 2, with options for more walking if desired.

Meet at 9:00 am at Rocky Mountain Arsenal National Wildlife Refuge Visitors Center, 6550 Gateway Rd., Commerce City, CO 80022. At Quebec and 64th St., turn east onto Prairie Parkway (64th becomes Prairie Parkway). Continue about 1 mile. Turn left onto Gateway Rd. and continue east through the entrance gate of the Refuge and a short distance farther to the Visitors Center.

Hayden/Green Mountain Park

April 29 (Fri.) 4:30 to 7:30 p.m.

Leader: Judy King

Hike on flat ground following easy lower trail for one hour until 5:30 p.m. At 5:30 p.m. begin ascent to the tower on the Green Mountain Trail and loop back on the Hayden Trail.

Hike is of moderate level 2 in difficulty. Possible flowers include the Easter Daisy, Sand Lily, Golden Banner, Short's Milkvetch, and Mountain Bladderpod. A plant list with updated plant names from Ackerfield will be available. Rattlesnakes are a possibility.

Meet at the Hayden Green Mountain Trail Head in the Florida parking lot across from Green Mountain Recreation Center. Bring a flashlight if you plan to join the second hour of the hike.

Roxborough State Park

May 12 (Thurs.) 9 a.m. to noon

Leaders: Jannette Wesley and Kathy Brown

It will be an easy hike along Willow Creek Trail to find and identify the bountiful wildflowers found in the park. Casual, a chance to see some unusual plants, e.g. Indian Pipe (*Monotropa hypopithys*), Venus Looking-glass (*Triodanis perfoliata*), Hawk-beard (*Psilochenia occidentalis*) and some front range favorites: Spreading Daisy (*Erigeron divergens*), Early Spring Senecio (*Senecio integerrimus*), White-flowered Peavine (*Lathyrus leucanthus*), and many more. You will need water, hat, sunscreen, good hiking or walking shoes, a snack, and a camera or sketching materials if you like. Snakes are a possibility. Meet at the Roxborough Visitor Center at 9:00 a.m.

North Table Mountain Trail

June 5 (Sun.) 8:30 a.m. to noon

Leaders: Tom Schweich and Samantha Clark

Traverse the west and southwest slopes of North Table Mountain on the City of Golden North Table Mountain Trail, then climb through the rim onto the top of the mesa, and return by way of the Jefferson County Open Space North Table Mountain Loop, crossing diverse plant communities where plains and foothills species mingle, including lichen-covered lava cliffs, slickrock and talus, grasslands, and shrublands. There will be a plant list with scientific and common names. We won't do any hard-core keying, but some familiarity with local plants will be helpful. A rattlesnake sighting is always possible on North Table Mountain. Several of the plants that we may find have stinging hairs. The route is 2 to 2½ miles and will include a short steep climb, up with loose rock and a rock scramble requiring 2 to 3' steps, up to difficulty #4.

Meet at the North Table Mountain Trailhead. Off CO Hwy 93, 2.0 miles north on CO Hwy 93 from the intersection of US Hwy 6, CO Hwy 58 and CO Hwy 93. Watch for signs on the right, make a right turn onto the access road. Please carpool if possible, because the North Table Mountain trailhead parking lot gets very full on weekends. There is additional City of Golden parking at Wyoming Circle and Pine View Road; access from CO Hwy 93 from Ford Street.

Reynolds Open Space Park

June 6 (Mon.) 9 a.m. to 4 p.m.

Leader: Kelly Ambler

Reynolds Park contains a wide variety of habitats in a relatively small area, which results in a great diversity of wildflowers. Ecozones range from riparian to foothills to ponderosa to montane. The most unusual plant of the area is the spurless Colorado blue columbine (*Aquilegia coerulea* var. *daileyae*). The spurless form of blue columbine lacks the typical long spurs and white petals, suggesting a different pollinating scheme compared to typical blue columbines. Another favorite of the area is *Dodecatheon pulchellum* (shooting star). More than 70 species of wildflowers have been recorded in the Park. The hike has 1000' elevation gain and is moderate 3 level of difficulty. There are a few minor water crossings. Meeting place TBD.

Golden Gate Canyon State Park

June 11 (Sat.) 8 a.m. to noon

Leader: Judy King

Follow the Horseshoe Trail to Frazier Meadow; hike is a moderate 2 level of difficulty. The meadow should be abundant with Wild Iris, Baneberry, Star Solomon's Seal, False Solomon's Seal, and Bush Honeysuckle. Meet on the 2nd floor of Golden's North Parking Garage. Enter the garage from Jackson St. between 11th and 12th street.

Hayden/Green Mountain Park

June 21 (Tues.) 8 a.m. to noon

Leader: Judy King

Hike the Green Mountain Trail to the tower and loop back on the Hayden Trail. Flowers may include Mariposa Lily, White Horsemint, White Larkspur, Cream Tips, Copper Mallow, and Scarlet Gaura. Rattlesnakes are a possibility. Hike is moderate level 2 of difficulty. Meet at the Green Mountain Trail Head, the Florida Parking Lot on Alameda across from Green Mountain Recreation Center.

Staunton State Park

June 29 (Wed.) 9 a.m. to noon

Leader: Lenore Mitchell

Join us for monthly 2 mile nearly level hikes on wide trails to observe plants as spring progresses into high summer. Initial blooms such as *Pulsatilla patens* (Pasque flower) give way to delights such as *Dodecatheon pulchellum* (shooting stars) and various shrubs and trees. Organized by Lenore Mitchell, Native Plant Master Trainer for 10 years, who lived near Staunton for years before it was a park. An easy hike; a plant list is available. BRING: weather-appropriate clothing; sunscreen; water; snacks; lunch optional. Weber and/or Wingate books, hand lens and camera optional. MEET: 9 a.m. at the main parking lot just after the entrance (annual Park Pass or daily \$7/car fee). Follow US 285 west of Denver approximately 20 miles from junction 285 & C470; exit ramp at Shaeffer's Crossing to right-hand turn; follow Elk Creek Rd approximately 2 miles to well-marked State Park Entrance. Look for silver Volvo XC70 station wagon.

High Creek Fen

July 10 (Sun.) 7 a.m.

Leader: Steve

Yarbrough

This will be a study of the High Creek Fen, a high country wetland in South Park. More details will follow.

Wear waterproof boots. 7 a.m. to carpool at the Woolly Mammoth Parking Lot, 18540 US Hwy 40, Golden meet at light post LL.



Hoosier Ridge – West side

July 21 (Thurs.) 7 a.m.

Leader: Jane Hendricks

The hike begins at the Hoosier Pass parking area in a subalpine forest of spruce and fir. It follows a wide road just below the sunny south side of the Continental Divide with spectacular views of rugged, snowcapped mountains. At 1-1/3 miles, we will arrive at an unnamed alpine pass along the ridge of North Star Mountain (elevation 12,090 feet). This will be the highest point of the hike. From there, we will descend 1/2-mile along a narrow, rocky jeep trail and have lunch at Little Crystal Lake. We will then return on a 1-1/4-mile-long jeep road, paralleling Hoosier Ridge on the north side of the Continental Divide. The total round trip distance is about 3 miles with a total elevation gain of about 600 feet.

Many of the species we will encounter are on display at Klaus & Jane Hendrix's main website: <http://www.picturetrail.com/hendrix>. Jane Hendrix has produced a wildflower guide for Hoosier Ridge which will be available for purchase at \$3.00 each. This is totally optional. The benefit of having one of these guides on the hike is that Jane included only species that we will find in this area. Bring rain gear, a windbreaker, warm clothing, lunch and water. Wear sturdy hiking boots. Lightning a possibility so it's important for everyone to arrive on time so we can get the scheduled early start.

Directions: Take I-70 West to Exit 203 (Breckenridge/Frisco). Go south on Colo. Hwy. 9, through Breckenridge, to Hoosier Pass. Park in the large parking area on the west (right) side of the road. To avoid the possibility of a thunderstorm while we're above timberline, we will meet at 9 a.m. There is no restroom facility at Hoosier Pass. There is a public restroom at City Market (from Colo. Hwy. 9, turn right onto Park Avenue at the north end of Breckenridge) and at Breckenridge Station, 150 Watson Avenue, Breckenridge (about 1 block south of City Market, near the gondola).

Carpool from Morrison, meet 7 a.m. at light pole HH in the Woolly Mammoth parking lot: heading west on I-70, take Morrison Exit to the right, parking lot is on west (Left) side of road. Carpool to Hoosier Pass for arrival at 9 a.m.

Silver Dollar Lake

July 23 (Sat.) 6:30 a.m.

Leader: Christine Taraskiewicz

This strenuous hike is a continuous incline at a casual pace up to the lakes. It begins in an area of lodgepole pine forest, then through some willow scrub and eventually opens up with fewer trees and open hills. The surroundings are breathtaking as you come out above the forested area. The high snow-covered mountain peaks and boulder fields and forest around the lower lake are very beautiful. It can be cool and windy even in midsummer. Bring your favorite books, hand lens, and camera for stunning mountain sites and we'll see what flowers are in bloom at this time. Silver Dollar Lake Trail is a 4 mile round trip at high altitude, 11,200' with a 1,000' elevation gain in 2 miles.

Meet at the Mammoth Park 'n Ride in Section FF (for flowers, flowers) at the outside edge of the parking lot at 6:30 a.m. It's an early start in order to get parking at this very popular spot. Look for a white Honda CRV. Bring shoes/boots in a plastic bag as a courtesy to your driver. 4 wheel drive vehicles are welcome and will get us closer to the actual trailhead or we'll add another half-mile of climbing to the hike. Bring lots of water, a meaningful lunch and milk chocolate for the leader. Rain gear and good sturdy boots for the rocky terrain are a must.

Shelf Lake

July 30 (Sat.) 6:45 a.m.

Leader: Jeanne Willson

Hike the beautiful Shelf Lake Trail up into a rich and wet alpine valley with great biodiversity including gorgeous, healthy bristlecone pines, several species of gentians, and thousands upon thousands of flowers including: larkspurs, bistort, and paintbrush. A plant list is available via email. Shelf Lake is considered a "B-difficult" hike under CMC rules, which means it has substantial distance and/or elevation gain and requires reasonable fitness, good hiking boots, rain gear and warm clothes, food and water, personal 1st aid kit, map and GPS, etc. The elevation gain is roughly 2,000 feet depending on our route. Please call the trip leader (720-581-2051) if you have questions about hike preparedness.

Meeting Time: Anyone wanting to carpool from Denver should meet with other hikers at 6:45 a.m. at the Woolly Mammoth lot at Lamppost LL. The road to the trailhead requires high clearance. 4-wheel drive is recommended.

Shrine Ridge Trail #2016

August 11 (Thurs.) 7 a.m.

Leader: Cheryl Ames

This field trip will be on Shrine Ridge Trail #2016. The wildflowers are incredible as well as the view from Shrine Ridge. The hiking distance will be at the most 4 miles round trip, depending on the group and what we find. High elevation hike with slight elevation gain (CMC "B-difficult"). This will be for all levels of botanists or want-to-be botanists. Chance of rain or lightning and mosquitoes.

Meet at 7:00 a.m. at the Woolly Mammoth Parking lot, section HH. Going west, this parking lot is on the north west corner of I-70 and Morrison Road turn off.

Green Mountain Grasses

August 27 (Sat.) 9 a.m. to noon

Leader: Jessica Smith

Identify and learn about grasses at Green Mountain Park. We will observe at least fifteen species of grass and discuss their key characteristics and ecological facts. We will discuss the major breaks in the Weber and Wittmann *Colorado Flora* grass key. The field trip will include about a one-mile hike (one-way) on a moderate trail at the base of Green Mountain. This course is for the more advanced botanist. The attendee should have a working knowledge of the sexual parts of a flower and previous experience with using a technical, dichotomous key. There could be rattlesnakes on the trail, and conditions could be hot

or rainy and muddy. Please come prepared for light hiking with water, snacks, sunscreen, rain jacket, warm layer and a sun hat. If possible, please also bring a copy of the *Colorado Flora* by Weber and Wittmann, Eastern Slope, 4th edition preferred. A hand lens and a clipboard are optional materials.

Meet at 8:45 a.m. at the Covered Picnic Shelter at Forsberg Iron Springs Park Trailhead. Please pay close attention to the following directions. There are several trailheads to Green Mountain, and attendees get lost every time this trip is offered:

The trailhead is on the southern side of Green Mountain, located off of Alameda Parkway. From C-470, exit onto Alameda Parkway, and head East. You will pass Indiana St. on the right. Following Indiana St., the trailhead will be on your right. It is only about 1 mile to the park once you turn onto Alameda Pkwy. There is a large brick sign for Forsberg Iron Springs Park at the entrance to the main parking lot. If you continue east on Alameda, you will shortly see a dog park and more parking to the right. Park at either place. The picnic shelter is at the top of the hill behind the parking lots. My cell phone is 303-960-4196. If you get lost, please call.

NORTHERN CHAPTER

Pawnee Grasslands

May 15 (Sun.) 7 a.m. to 4 p.m.

Leader: Donald Hazlett

Description: Dave's Draw is an isolated ravine located a mile or so northeast of the Pawnee Buttes.

Bobcat Ridge Natural Area

May 24 (Tues.) 5:30 p.m. to 7:30 p.m.

Leader: Ann Grant

Description: An evening walk in one of Fort Collins' more remote natural areas. Lots of plant diversity and great views.

Eastern Prairie Ranchlands Flora near Wray (Part of a 1 or 2 day field trip)

June 11 (Sat.) 2 p.m. to 5 p.m.

Leader: Bruce Bosley

Location: Various Ranches near Wray, CO

Eastern Prairie Ranchlands Flora near Wray (Part of a 1 or 2 day field trip)

June 12, 2016 (Sun.) 9 a.m. to 1 p.m.

Leader: Bruce Bosley

Location: Various Ranches near Wray, CO

Well Gulch Trail in Lory State Park

June 22 (Wed.) 2 p.m. to 6:30 p.m.

Leader: Jennifer Ackerfield

The Northern Chapter's Newly-Formed Noxious Week Committee Work Project (Weed Mitigation #1)

July 9 (Sat.) 8 a.m. to 4 p.m.

Leaders: Renee Galeano-Popp, Hugh Mackay, and Rebecca Hannon.

The Northern Chapter's Noxious Week Committee invites you to join us on Day #1 of our new multi-year work project on the Arapaho Roosevelt National Forest and adjoining private land.

Peak 7 Treasures in Ten-Mile Range (Breckenridge Area)

July 17 (Sun.) 9:15 a.m. to 5 p.m.

Leader: Jane Hendrix

Intriguing Vegetation of Middle Bald Mountain

Aug 3 (Wed.) 8 a.m. to 5 p.m.

Leader: Steve Popovich

Location: Middle Bald Mountain - At 11,000 ft., it is among the highest peaks in the Laramie Mountains

The Northern Chapter's newly formed Noxious Weed Committee Work Project (Weed Mitigation #2)

Aug 13 (Sat.) 8 a.m. to 4 p.m.

Leader: Renee Galeano-Popp, Hugh MacKay, and Rebecca Hannon

Location: Elkhorn Creek Weed Mitigation #2

Shambhala Mountain Center Tour

Aug 27 (Sat.) 9 a.m. to 4 p.m.

Leader: Renee Galeano-Popp and Dickie Swaback

Description: This is a special opportunity to tour Shambhala Mountain Center.

Location: 151 Shambhala Way, Red Feather Lakes, CO

Elkhorn Creek Weed Mitigation #3

Sept 11 (Sun.) 8 a.m. to 4 p.m.

Leader: Renee Galeano-Popp, Hugh Mackay, and Rebecca Hannon

PLATEAU CHAPTER

The Plateau Chapter field trip schedule is not available yet. The field trips will be in the Schedule of Events on the CoNPS website and listed in the CoNPS E-News as soon as the information is available. They will also be listed in the next issue of *Aquilegia*.

SOUTHEAST CHAPTER

Withers Canyon – Comanche National Grassland

May 21 (Sat.)

Leader: Steve Olson, U.S. Forest Service botanist (leader-steve01@gmail.com)

We will not be heading down the trail toward the dinosaur tracks. Instead we will head back into Withers Canyon. We will hike past cliffs with the potential for a few of the unusual ferns, juniper woodland, and shortgrass prairie. We will be looking for Ebony spleenwort (*Asplenium platyneuron*), Purple cliffbrake (*Pellaea atropurpurea*), Wheel milkweed (*Asclepias uncialis*).

BioBlitz - Browns Canyon National Monument

June 1-3 (Wed. -Fri.)

Leader :Steve Olson, U.S. Forest Service botanist (leader-steve01@gmail.com)

Old limber pine (*Pinus flexilis*), old Douglas-fir (*Pseudotsuga menziesii*), springs, cliffs, canyons, Fendler's cloakfern (*Argyrochosma fendleri*).

Leader: Steve Olson, U.S. Forest Service botanist (leader-steve01@gmail.com)

Elk Park - Pikes Peak

June 18 (Sat.)

Leader: Doris Drisgill (leaderdoris@gmail.com)

Deep snow kept us out of Elk Park last year, a great place for alpine botanizing. We will be looking for alpine species including dwarf columbine (*Aquilegia saximontana*), and Pikes Peak endemics *Mertensia alpina* and *Oreoxis humilis*.

Cottonwood Pass – Sawatch Range

June 25 (Sat.)

Leader: Doris Drisgill (leaderdoris@gmail.com)

Overnighter or long day trip.

The Crags - Birds and Botany in Pike National Forest

July 9 (Sat.)

Leader: Jeff Jones (leaderjeff01@gmail.com)

Orchids and other upper montane/subalpine species. We will hike through forest and riparian valleys to rocks supporting clumps of *Telesonix jamesii* and two species of *Heuchera*. A great place to bird--we expect to see Three-toed Woodpeckers and other mountain species.

Buffalo Creek – Pike National Forest

July 17 (Sun.)

Leader Doris Drisgill (leaderdoris@gmail.com)

Easy hike through a verdant riparian ecosystem in search of Wood Lillies (*Lilium philadelphicum*).

Leader: Doris Drisgill (leaderdoris@gmail.com)

Missouri Gulch

July 23 (Sat.)

Leader: Steve Olson, U.S. Forest Service botanist (leader-steve01@gmail.com)

We will be looking for Marsh violet (*Viola palustris*), Bunchberry (*Cornus canadensis*), Crandall's beardtongue (*Penstemon crandallii*).

Independence Pass and Turquoise Lake

August 6 (Sat.)

Leader: Doris Drisgill (leaderdoris@gmail.com)

Overnighter or long day trip.

BioBlitz - Browns Canyon National Monument

August 23-25 (Tues.-Thurs.)

Leader: Steve Olson, (leadersteve01@gmail.com)

Aquilegia Volume 40 No. 1 Winter 2015-2016

Colorado tansyaster (*Machaeranthera/Xanthisma coloradoensis*), winterfat (*Krascheninnikovia lanata*), Yellow owl-clover (*Orthocarpus luteus*), Arkansas River.

SOUTHWEST CHAPTER

Chapter Workshop: Ft. Lewis College Herbarium Tour & Common SW Colorado Plant Family ID

April 23 (Sat.) - 9 a.m. to 3 p.m.

Leader: Dr. Ross McCauley

Description: Tour of the Ft. Lewis College Herbarium and a workshop focusing on identifying the most common plant families in SW CO.

Location: Ft. Lewis College herbarium in Durango Colorado

Lower McElmo Canyon

May 7 (Sat.) - 7 a.m. to 3 p.m.

Leader: John Bregar

Description: Starting from Cannonball Mesa to Ismay Trading Post at the UT state line, looking for high-desert plants blooming at the lower edge of the PJ zone.

Miramonte State Natural Area and State Wildlife Area

June 4 (Sat.) - 10 a.m. to 4 p.m.

Leader: Peggy Lyon

Description: Mostly flat, with large reservoir, Black sage community. Physical difficulty level 1 (easy). Rare plants should be at their prime on June 4: *Physaria pulvinata*, *Puccinellia parishii*. Meet at the campground at 10 a.m. (go right when you enter the SWA, cross the dam.) There are shelters, picnic tables, rest rooms. It shouldn't be buggy, but come prepared. Plant ID will be casual. We have a pretty complete species list for the area, but you may find something that we've overlooked. From Durango, go to Dolores, then north on the Dolores-Norwood Road.

Subalpine Flowers in Cunningham Gulch & Lower Highland Mary Trail

July 9 (Sat.) - 8 a.m. to 4 p.m.

Leader: Bob Powell

Top of Lizard Head Pass

Aug. 6 (Sat.) - 8 a.m. to 4 p.m.

Leader: Connie Coulter

Description: Meander along gentle trails through wetland and meadow habitats eventually entering into the coolness of the evergreen forest to discover what's growing along streams and out of rocky crevices. Incredible variety of species, gorgeous views.

Identification of Common Lichens in Western San Juan Mountains

Aug 21 (Sun.) - 9 a.m. to 3 p.m.

Leader: Bob Powell

Location: Western San Juan Mountains

Colorado Native Plant Society

Summer Field Seminars

For the first time ever, CoNPS is offering Summer Field Seminars. These are day-long classes that focus on a specific topic, similar to the CoNPS workshops. They are taught by experts and there is usually a cost to attend the Field Seminars in contrast to the free field trips that are put on by CoNPS chapters.

Continuing education credit is available for teachers through BOCES, if desired. There is a \$25 per class additional fee from BOCES if you wish to receive credit. For details, contact JLTurner@regis.edu.

To sign up for a field seminar, go to the CoNPS website (<https://conps.org>), and sign in as a member (if you are a member). Members' registration fees are lower than non-member fees. Click "Calendar of Events", scroll to the date of the seminar you want, and double click on the seminar title. There will be a description of the seminar and a registration button. Prices vary according to the place the seminar is held and the amount they charge for permits, room fees, etc.

For more detailed information about the seminars, see the CoNPS Summer Field Seminars 2016 Catalog, posted as a PDF file on the CoNPS homepage (<https://conps.org>).

EASTERN SLOPE- JUNE

Recognizing Beneficial Arthropods - Eric R. Eaton "Bug Eric" - Colorado Springs

June 12 (Sun.) 8:30 a.m. - 5:00 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Location: Mesa Room, The Mesa Conservation & Environmental Center, (2855 Mesa Road, Colorado Springs)

One-day session \$45 (CoNPS members), \$55(non-members)

Description of class: An introduction to identifying beneficial insects from pollinators to flower visitors, predators, parasitoids, parasites, scavengers, and decomposers. There will be a PowerPoint presentation including an interactive game illustrating insect mimicry, followed by time afield in gardens and natural habitats. There will be ample time for questions, and the *Kaufman Field Guide to Insects of North America* will be available for purchase and signing by the author.

Bringing Colorado Native Plants to Any Urban Landscape - Dr. Jack Carter & Dr. Jen Busselot - Cherry Creek State Park, Aurora

June 17 (Fri.) 9 a.m.-3 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

There will be a morning classroom session; the afternoon session will be outside looking at the native plants.

Location: Cherry Creek State Park, 4201 S. Parker Rd., Aurora

Description: Review 30 Colorado native plants that are ideal for use in Colorado urban landscapes. Then take a hike around Cherry Creek State Park to look at specimens of the native

plants. The goal is to be able to identify and describe Colorado native plants that can be used in homeowners' landscapes.

Botany in a Day! Jennifer Ackerfield - Lory State Park

June 17 (Fri.) 9 a.m. - 3 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Location: Meet at Lory State Park Visitor Center. Well Gulch.

Description: Have you ever wanted to know how botanists key out plants? Come join *Flora of Colorado* author Jennifer Ackerfield and learn how! This workshop will go through the major recognition characteristics of the flowering plant families and teach users how to work through a dichotomous key. Special emphasis on the grasses will be done in the afternoon. Handouts will be provided covering the plant families.

Identification & Classification of Ute Indian Prayer Trees in Colorado - John Anderson - Colorado Springs

June 18 (Sat.) 9 a.m. - 4 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Location: La Foret Conference & Retreat Center, 6145 Shoup Rd, Colorado Springs, CO 80908 (followed by a field trip in nearby Fox Run Regional Park, in the Black Forest of northern El Paso County).

Description: This seminar provides an introduction to Culturally Modified Trees (CMT). These trees are still being discovered in the forested regions of Colorado. The majority, if not all of these particular CMTs, are attributed to the Ute Indians, known as "People of the Shining Mountains". The three primary objectives of this 1-day (8-hour) seminar are: 1) Name the five generally accepted types of Ute Indian Prayer Trees (Trailmarker, Burial, Story, Medicine and Prophecy Trees), 2) Identify characteristics of typical man-made modifications to the trees (e.g., unnatural bends, distortions, scars and peeled bark patterns or distinctive ligature or tie-down marks), 3) Recognize natural causes of tree scarring or disfigurement (lightning strike, disease, heavy-snowfall, animal interaction, etc.)

Field Plant Ecology Skills - Dr. David Buckner - Boulder

June 24 (Fri.) 9 a.m. - 5:30 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Where to meet: Meet at 1077 S. Cherryvale Rd, Boulder, CO; Carpooling to additional sites may be undertaken.

Description: During this seminar, the topic of field skills in plant ecology will form the core of instruction. Quantitative data collection as applicable to monitoring and plant community characterization will be explored and demonstrated. Participants will receive instruction and hands-on practice in the techniques discussed. Other important features of field sampling will be explored including commonly used statistical designs, unbiased sampling, and instruction in plant identification using field characteristics of common species occurring in natural and re-constructed ("restored") communities.

WESTERN SLOPE- JUNE

Ecological Diversity in Sagebrush Steppe within the Gunnison Basin - Dr. Barb Frase - Gunnison

June 23 (Thurs.) 9 a.m. - 4 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Description: Participants will learn about ecological diversity within and between localities in sagebrush steppe ecosystem, learn how to measure species diversity, learn how to assess suitability of habitat for Gunnison sage grouse, and visit research sites that test the effects of elk and livestock utilization of sagebrush steppe. There will be a short indoor orientation before activities in the field.

EASTERN SLOPE- JULY

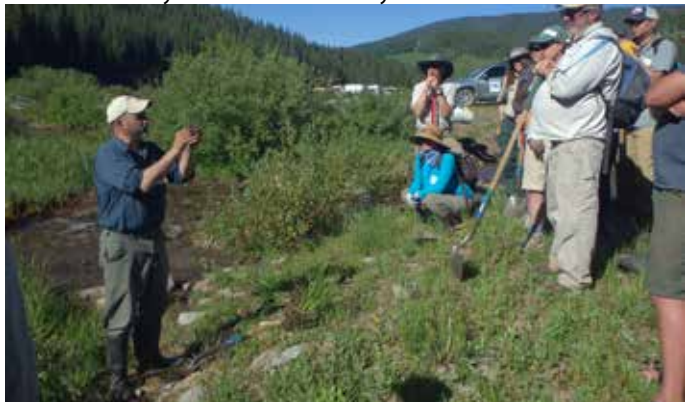
NEW! Identification Course for the Riparian Flora for Colorado's Front Range, including Riparian Ecology, Geomorphology, and other River Restoration Criteria - Randy Mandel

July 2 (Sat.) 9 a.m. - 5 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Location: TBD (Front Range Foothills Location)

Description: The purpose of the seminar is to provide 1-day in-field training for riparian plant identification, ecology, geomorphology, and functions and services for the major native woody, Randy in the field Photo by Sarah Johnson



herbaceous, and graminoid wetland and riparian plants for the Front Range of Colorado. The class will also include an overview of river restoration criteria, planning, and design, including geomorphology and other factors, and will be co-instructed by Randy Mandel, Senior Restoration Ecologist, Golder Associates, and additional members of the Colorado Water Conservation Board Emergency Watershed Protection project team.

Introduction to Dendrochronology (Field & Laboratory Methods) - Dr. John Sakulich - Golden Gate Canyon State Park & Regis University (Denver)

July 9-10 (Sat. - Sun.) 8 a.m. - 4 p.m.

Two-day field/lab course (one full day in the field followed by one day working with cores in the lab at Regis) \$90 (CoNPS members), \$110 (non-members)

Where to meet: On Saturday, we will meet at the Golden Gate Canyon State Park Visitor Center (this is tentative; Dr. Sakulich will send out instructions before the class). On Sunday, we will meet in room 204 Pomponio Science building on the Regis University campus in Northwest Denver

Description: Students will learn the basics of using tree-ring dating to analyze forest ecological conditions. The class will conduct research on forest change at alpine treeline. Day 1 will cover field methods identifying, mapping and measuring tree characteristics, as well as collecting increment cores from trees. Day 2 will cover laboratory procedures for processing tree cores and dating tree rings.

Audience: Field biologists and others interested in dendrochronology field and laboratory methods.

Colorado Bumblebees: Native Pollinators of Colorado Plants - Dr. Carol Kearns & Dr. Diana Oliveras - Boulder

July 13-14 (Wed. - Thurs.) 9 a.m. - 1 p.m. each day

Two half-day sessions \$45 (CoNPS member) \$55 (non-member)

Location: July 13: We will meet on the CU campus in the morning on day one to learn about bumblebees and to view bees under the microscope. We will catch bees in gardens on or near campus.

July 14: On day two we will carpool to two different field sites. Moderate walking.

(Paid parking in Euclid Parking Garage on campus)

Classroom session: CU Boulder campus, Room TBA

Field sessions: Minnick Open Space, Boulder Co., CO, N 40° 00.065 W 105° 30.019, Elevation 2612m and private pasture, Sugarloaf Rd, Boulder CO

Description: We will learn about the bumblebee life cycle and the importance of bumblebees as native pollinators. We will visit two field sites with a diversity of mid-altitude flowers (about 8500 ft. elevation), and capture bumblebees. Bumblebees will be chilled so we can examine them closely, and released after study. We will learn to identify bumblebee species in the field.

NEW! Front Range Thistle Identification - Carla DeMasters and Casey Cisneros - Red Mountain Open Space, Larimer County

July 15 (Fri.) 9 a.m. - 3 p.m.

Location: Red Mountain Open Space, Larimer County. Approximately 1 hour north of Fort Collins. Meet at Larimer County Weed Control office parking lot at 9 a.m. (2649 E Mulberry St # 6, Fort Collins, CO 80524). We will carpool to Red Mountain Open Space and return to Fort Collins around 3 p.m.

Description: Material covered during this field seminar will include a review of plant identification terminology specific to composites, how to identify thistle species in the field using key traits, how to key out thistle species using a dichotomous key and information on the general ecology and prescribed management techniques for noxious weed species. Participants should bring a hands lens and *Colorado Flora: Eastern Slope* (Weber and Wittman). The Larimer County Land Stewardship Program will be donating copies of the second edition of "Thistles of Colorado: Identification and Management Guide" to field trip participants. Species we hope to encounter include bull thistle, Canada thistle, musk thistle, Scotch thistle, Flodman's thistle, wavy leaf thistle and yellow spine thistle.

Goals, Skills, etc.: Participants will learn how to identify native and non-native thistles in the field using key traits and di-

chotomous keys. Participants will also learn about benefits and strategies of exotic thistle management.

Butterfly Natural History- Dr. Paul Opler & Evi Buckner Opler - Golden Gate Canyon State Park

July 24 (Sun.) 8:30 a.m. - 5 p.m.

One-day session \$45 (CoNPS members), \$55(non-members)

Location: Golden Gate Canyon State Park: Meet at Visitor Center

Description of class: An introduction to butterfly natural history including identification, life histories, behavior, and conservation with examples among local butterflies found along the Colorado Front Range. There will be an introductory illustrated lecture followed by a field trip along Nott Creek. After the field trip there will be a summary lecture and an illustrated talk on monarch migration and conservation.



Designing with Native Plants for Pollinators - Jim Tolstrup - High Plains Environmental Center, Loveland

July 30 (Sat.) 8 a.m. - 4 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Location: High Plains Environmental Center (HPEC), 1854 Piney River Road, Loveland

Description: The morning will consist of a presentation on gardening with native plants including habitat and pollinator considerations, design theory, soil preparation, and landscape construction. Participants will receive a 41 page native plant guide compiled by HPEC with specific information and recommended landscape plants. Participants are encouraged to bring digital pictures of their gardens to share with the group, as well as problems, challenges, and ideas. If possible, participants can include drawings with existing dimensions of their home landscape. Participants will split into working groups, create landscape designs collaboratively and present their ideas to the larger class for discussion.

Participants will have the opportunity to have some hands-on experience at the HPEC gardens and native plant nursery in the afternoon. Drawing materials will be provided by HPEC.

Introduction to the Grass (Poaceae) Family - Jessica Smith - Golden Gate Canyon State Park

July 30 (Sat.) 8:30 a.m.-4 p.m. (with a half-hour lunch break on-site, and a half-hour of homework assigned).

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Meeting location: Golden Gate Canyon State Park Visitor Center. The Visitor Center is located at the intersection of Golden Gate Canyon Road (Hwy 46) and Crawford Gulch Road in Gilpin County. The instructor will present introductory information at this location, and then we will caravan/carpool to other areas of the Park.

Description: This class will provide an overview of the Poaceae family in Colorado. Specifically, we will discuss the floral parts

of a grass, and variations on these parts in different species. We will discuss the major breaks in the dichotomous key to the grasses in Weber and Wittmann's *Colorado Flora*, and view examples of each major group. We will key out several species, and learn at least 15 species of grasses. Key characteristics and ecological facts of each species will be discussed. The differences between the grass, sedge and rush families will also be described.

Wetland and Riparian Plants of Golden Gate Canyon State Park - Denise Culver & Pam Smith - GGCSF

July 31 (Sun.) 9 a.m. - 4 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Location: Meet at Golden Gate State Park Visitor Center. Group will carpool to the Nott Creek Trailhead, 4 miles northeast of Visitor Center.

Description: Focus will be on riparian and wetland plants that can be difficult to identify in the field, e.g., sedges, rushes, and willows. Additionally, we will talk about the importance of wetlands in Colorado and the biodiversity of wetlands in the state.

WESTERN SLOPE- JULY

Thistles of the Gunnison Basin: Not All Thistles Are Bad Plants - Dr. Barb Frase - Gunnison

July 9 (Sat.) 9:00 a.m. - 3:30 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Location: various sites within 15 miles of Gunnison; there will be a short classroom session and the rest of the time will be in the field.

Description: Native thistles are interesting in their own right with fascinating evolutionary histories and ecological roles; they also can facilitate broader thinking about noxious and native plants. The issue of invasive, non-native species is complex with no easy solutions, and indeed there is some disagreement about whether a solution is a desirable goal in all instances.

In the Gunnison Basin we have one invasive thistle species and multiple native species. We will visit several sites, learn to ID thistle species in the field, and explore biotic and abiotic factors in the surrounding plant communities. We will gain experience using a non-technical key to species in the field. We will also spend time at field research plots established to test biological control methods of Canada thistle, a noxious weed. Learning about our thistles will be facilitated by observations, practice with a key, group discussions, and basic ecological assessment measures.

Goals: Participants will learn about native and noxious thistle species in the Valley, investigate adaptations and habitat requirements of local species, learn to differentiate by sight the noxious species (bad) from the native (good), and learn the ecological costs and benefits of noxious thistle control methods utilizing a case study.

John Fielder Photography Field Seminar

Wildflowers of Steamboat Springs Exclusive for Colorado Native Plant Society

July 9-10, 2016 Saturday-Sunday

Maximum 16 participants, most meals included, lodging extra
\$850 per person

The lush ranch meadows and National Forest open spaces of Routt County offer remarkable displays of wildflowers in early July. Our base of operations is the Steamboat Springs Community Center, 1605 Lincoln Avenue.

This is your opportunity to learn landscape photography directly from John Fielder. Find out how John creates his award-winning images and gain a deeper understanding of the visual aspects of nature. In a comprehensive 4-hour slide show lecture learn how to improve your compositions and get an insider's look at professional techniques, including which bells and buttons you only really need to use on your camera. After lunch, John will discuss the most important tools used in the best of the post-processing programs Adobe Lightroom. Appropriate for all levels of photographers, beginner to advanced.

Then spend sunset and sunrise in the field at John's favorite locations in the Steamboat Springs area, including the Elk River Valley and Steamboat Lake State Park. For personalized attention, you will photograph side-by-side with John and his two pro-photographer assistants. For instant feedback, he will show you his compositions in his LCD, and then critique yours. The workshop concludes with a critique of your weekend work on your laptop.



John Fielder

Photo courtesy John Fielder

Equipment

Any type of digital camera, point & shoot or SLR, is appropriate. However, you will be maximizing depth of focus on tripods, and SLRs that allow f22 settings are best. You should have lenses that cover 18mm to 150mm for small sensor digital cameras. A 10-22mm ultra-wide angle zoom is even better for wildflowers. For APS-C large sensor cameras, you should have at least 28mm to 200mm coverage with your lenses. A 16-35mm is even better. If you bring an SLR, bring a tripod too for those images, as well as for low light photographs at sunrise and sunset. Manfrotto brand tripods are by far the best for landscapes. Pistol grips heads are the easiest to use. Remote releases work well, but so does your 2 second timer. If you have a point & shoot camera, bring it for closeups!

Saturday

- 8:30 - 12:30: Steamboat Springs Community Center, 1605 Lincoln Avenue, slide lecture, includes continental breakfast
- 12:30 - 2:00: Lunch break
- 2:00 - 2:30: Review of camera settings and tripods
- 2:30 - 8:30: In the field until sunset. Dinner catered into the field.

Sunday

- 5:30 - 9:30: Meet at Steamboat Springs Community Center, pick up coffee & rolls, and head into the field
- 9:30 - 1:30: Hot breakfast, edit photos, John's critique on your laptops
- 2:00: Book sale and signing including John's new book *Wildflowers of Colorado*

About John

John Fielder has worked tirelessly to promote the protection of Colorado's ranches, open spaces, and wildlands during his 30-year career as a nature photographer. His photography has influenced people and legislation, earning him recognition including the Sierra Club's Ansel Adams Award in 1993 and, in 2011, the Aldo Leopold Foundation's first Achievement Award given to an individual. Over 40 books have been published depicting his Colorado photography. He lives in Summit County, Colorado, and operates a fine art gallery, John Fielder's Colorado, in Denver's Art District on Santa Fe. He teaches photography workshops to adults and children. John's latest book *Wildflowers of Colorado* will be published in May. Information about John and his work and workshops can be found at johnfielder.com.

This is a fundraiser with 50% of profits given to CoNPS.

The next two seminars, **Medicine on the Wild Side** and **Natural History of Rocky Mountain Pollination**, will be offered at the **Rocky Mountain Biological Station (RMBL)**, just 30 minutes from Crested Butte. The 2016 Crested Butte Wildflower Festival will take place July 11 - July 23 (<https://www.crestedbuttewildflowerfestival.com/save-the-date/>) so why not take these two full-day seminars on the weekend of July 16 and July 17 and enjoy the Crested Butte Wildflower Festival during the week before or after the seminars. Be sure to sign up for the CoNPS Seminars on the CoNPS Calendar at <https://conps.org/mfm-event-calendar/#!calendar>. It is arranged by date. Click on the event and you will be taken to the page where you can register. If you want to stay close to Gothic, you can find lodging at Mt. Crested Butte (<http://www.skicb.com/lodging/search>). If you would rather stay in town near the festival, you can find lodging at Crested Butte but make reservations early because near festival time it might be hard to get reservations in Crested Butte.



Gothic Community Center

Photo by Chad Carter

www.rmbll.org

Medicine on the Wild Side: What Insects Can Teach Us About Chemicals in Nature - Dr. Emily Mooney - Rocky Mountain Biological Laboratory (RMBL) Gothic, near Crested Butte
July 16 (Sat.) 8 a.m. to 4 p.m.

1 day seminar \$75 (CoNPS member) \$85 (non-member)

Location: Rocky Mountain Biological Laboratory, Gothic, CO, near Crested Butte. We will meet outside the Visitor Center.

Description: In a world of hungry, hungry caterpillars, what's a plant to do? Since they can't run away from their enemies, plants produce a variety of special compounds to ward off attack. We as humans often find these potent compounds useful in herbal medicine. In this tour, we will take a walk to see this connection in the medicinal plants and insect herbivores of the Gothic area. Along the way, participants will get to know the traditional or medicinal uses of a variety of plants and trees.

The Natural History of Rocky Mountain Pollination - Dr. Jane Ogilvie - Rocky Mountain Biological Laboratory (RMBL) Gothic, near Crested Butte

July 17 (Sun.) 8 a.m. to 4 p.m.

1 day seminar \$75 (CoNPS member) \$85 (non-member)

Location: Rocky Mountain Biological Laboratory, Gothic, CO, near Crested Butte. We will meet outside the Visitor Center.

Description: We will learn about some of the fascinating relationships between flowering plants and pollinators in the rich wildflower meadows around the Rocky Mountain Biological Laboratory. While outside in the meadows, we will identify the plants and animals engaging in pollination relationships, discuss the relationship from both perspectives (they are not always cooperative!), and learn some practical ways to address questions about the relationships. We will gain a much deeper understanding of, and fascination for, pollination, which is vital to the persistence of plant and pollinator populations.

NEW! The Ecology and Botany of Iron Fens in the San Juan Mountains - Anthony Culpepper & Amanda Kuenzi - Silverton area

July 22 (Sat.) Time TBA (9 a.m. - 3 p.m. or maybe longer)

\$60 for CoNPS members; \$70 for non-members

Description: This field seminar is being put on jointly by the Mountain Studies Institute in Silverton, CO, and the Colorado Native Plant Society.

Grasses of the Grand Junction Area- Dr. Stephen Stern - Grand Junction

July 22-23 (Fri. - Sat.) 9 a.m. to 5 p.m.

Two-day field/lab course (one full day in the classroom at Colorado Mesa University followed by one day in the field).

\$90 (CoNPS members), \$110 (non-members)

Locations:

Day 1: Wubben Hall, Colorado Mesa University, Grand Junction CO

Day 2: Meet at Wubben Hall, CMU before departing for various field sites

Description: This two-day class will focus on the basics of grass identification. The first day will be spent in the classroom learning the terminology associated with identifying grasses. The second day will be spent in the field surveying grasses on the Grand Mesa and using Wingate's "Illustrated Keys to the Grasses of Colorado" to identify grasses.

We will visit various sites in the area. Total mileage for the day will be around 5 miles on trail. Overall moderate difficulty due to time in the field and elevation.

Colorado Native American Ethnobotany - Lynn Albers - Vail
July 30 (Sat.) 10:00 a.m. to 4:00 p.m.

1 day seminar \$45 (CoNPS member) \$55 (non-member)

Where to Meet: Betty Ford Alpine Gardens (BFAG) Education Center. Park at the east end of Vail Village Parking Structure or Ford Park Parking. Summer parking is free.

Description: Ethnobotany and its partial role in the lives of Colorado's historic Native American peoples will form the foundation of the instruction. The morning and midday sessions will include two presentations held at the new Betty Ford Alpine Gardens (BFAG) Education Center. The first will focus on ethnobotany and briefly examine its history, evolution, and development as a field of study. The second will focus on Colorado's historic Native American peoples and a selection of native plants they often used. After lunch, we will venture into the nearby BFAG and Vail Nature Center to enjoy and discuss Colorado Native American ethnobotany in both a garden setting and in the field. We will have a final wrap-up back at the BFAG Education Center.

EASTERN SLOPE- AUGUST

Willow Identification - Gwen Kittel - Golden Gate Canyon State Park

August 14 (Sun.) 9 a.m. - 3 p.m.

Learn to identify willows using Gwen's key.

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Itinerant Field Plant Ecology - David Buckner - Boulder

August 20 (Sat.) 9 a.m. to 5 p.m.

Description: This seminar will take place in two natural landscapes and will be centered on an on-going and diverse discussion of topics in field plant ecology and plant ecology in general. As suitable occurrences are encountered in the field walk during the day, topics such as the nature of plant communities, dynamic ecology, the importance of soils, the role of geomorphic features in plant community distribution, plant physiology, plant community reconstruction, and of course plant identification will be discussed.

WESTERN SLOPE- AUGUST - Free Field Seminars

NEW! Identification Course for the Wetland Flora of Colorado's Western Slope - Randy Mandel and Travis Morse

August 6 (Sat.) 9 a.m. - 5 p.m.

Location: Grand Mesa; details to follow

1 day seminar Free for CoNPS members and non-members but registration for the class on the CoNPS website required.

Description: The purpose of the class is to provide 1-day in-field training for wetland plant identification, ecology, and functions and services for the major native woody, herbaceous, and graminoid wetland and riparian plants for the Western Slope of Colorado. The class will include some of the basic factors (hydrology, soils, and vegetation) for wetland delineation and will be co-instructed by Randy Mandel, Senior Restoration Ecologist, Golder Associates, and Travis Morse, Project Manager, US Army Corps of Engineers, Sacramento District.

NEW! Identification of Common Lichens in the Western San Juan Mountains - Bob Powell

Aug 21 (Sun.) 9 a.m. to 3 p.m.

1 day seminar Free for CoNPS members and non-members but registration for the class on the CoNPS website required.

WORKSHOPS

See the CoNPS website (<https://conps.org>) for descriptions and to sign up. Go to Calendar of Events and scroll down to the correct date. Double click on the title of the event for details and for a link to register. If a workshop is full, you can be placed on the waiting list and will be notified if there is an opening in the class.

Colorado Conifers Workshop

April 24, Sunday, 9 a.m.-3 p.m.

Instructor: Stephen Stern

Location: Colorado Mesa University, Wubben Hall, Room 302, 1260 Kennedy Avenue, Grand Junction, Colorado

Instructor: Dr. Stephen Stern, Mesa State University.

Colorado Orchids

April 30, Saturday, 9:00 am - 3:00 pm

Instructor: Scotty Smith

Location: Rocky Mountain Arsenal National Wildlife Refuge, Contact Station, Commerce City, CO

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Rare Plant Seeds Scout Workshop

April 30 (DeBeque or Parachute) or July 9 (Canon City)

This year the Colorado Native Plant Society and the Denver Botanic Gardens are making a big push to collect seeds from 13 rare plant species in Colorado. The seeds will go into long-term storage at the National Seeds Storage Lab in Fort Collins to be used if ever the need arises to replenish or restore a population that is decimated for one reason or another.

The species we've chosen for this year are centered in two different areas, one in the oil and gas exploration area in Rio Blanco and Garfield Counties, and one in the barrens, in Teller, El Paso, and Fremont Counties.

We need seed scouts to go out and assess known populations of these species to see whether this is a good year for seed collection in a given population, and to determine timing of seed maturity. Surveying these plant communities will require off-trail hiking. Seeds must be collected by Denver Botanic Gardens staff, due to permitting requirements, but we sure could use help in the finding and assessing of the target species!

Training and orientation will be held April 30th in DeBeque or Parachute for the western region, and on July 9th in Canon City for the south central region. We will cover how to identify the plants you are searching for, and give you location information on where the plants are known to have been. Some of the populations have been visited fairly recently, and some have not been visited in over 20 years.

You are encouraged to work in groups. It's more fun, and it's nice to have others to rely on in identification, assessment, etc. At each of the trainings, we will do what we can to facilitate the formation of scouting groups. You are, of course, welcome to work alone, too, if that is your preference.

Colorado Penstemons

Classroom Session Dates: Saturday May 7 AND Sunday, May 8, 2016

Location: Auraria Higher Education Center, Denver, Colorado

Field Session Dates: Saturday, June 25, 2016 AND/OR Saturday, July 30, 2016. \$60 for 2-day workshop; \$25 per field session.

Instructor: Carol English

Note: This is a multi-day workshop, consisting of a 2-day classroom session and 2 field sessions. All sessions will begin at 9:00 a.m. More details are in the Fall 2015 issue of *Aquilegia* and on the Calendar of Events at <https://conps.org>.

Rare Plant Seeds Scout Workshop July 9 (Canon City)

See April 30 entry above.

News & Announcements

CoNPS Welcomes Southwest Chapter!

CoNPS is happy to welcome a new chapter. The Southwest Chapter of CoNPS is based in Durango, CO, and covers the Southwestern part of the state. The officers are:

President– John Bregar

Vice-President – Bob Powell

Treasurer – Peggy Lyon

Field Trip Coordinator – Priscilla Sherman

Program Director – vacant

Publicity – David Wright

The Southwest Chapter already has a number of field trips planned for the summer. Check the CoNPS Calendar of Events for information and to sign up.

John Bregar, President of the Southwest Chapter, is a retired oil & gas exploration geologist/geophysicist, active mountain climber, bird-watcher, and botanist. John and his wife, Dorothy, have lived in Durango, CO for almost ten years. They lived in Calgary, Alberta, Canada for 4



John Bregar, President of the SW Chapter

1/2 years prior to that.

John has lived in many different places throughout the USA in his lifetime. When asked where he is from, John simply says “from the USA.”

Description of your talk: 300 – 1,000 words

Contact information: email and phone number (mobile phone preferred).

Please send your proposal to: ConpsConf@gmail.com

The deadline is July 15, 2016.

Research Grant Recipients for 2016

The CoNPS Research Grants Committee is pleased to announce the 2016 recipients of research grants from the John W. Marr and Myrna P. Steinkamp funds.

Steinkamp Grant Recipient

Zachary Cabin – University of California Santa Barbara, working with Scott Hodges. Understanding the Ecological Conditions Favoring the Radical Morphological Mutant *Aquilegia coerulea* var. *daileyae*. \$1000

Marr Grant Recipients

Jennifer Ackerfield – Colorado State University, working with Mark Simmons. A Prickly Puzzle: Phylogeny and Evolution of the Genus *Cirsium* in North America, \$1000

Alyssa Albertson – Colorado State University, working with Kenneth Kassenbrock. A Survey of Fungal Endophytes in Bristlecone Pine: Do Endophyte Communities Vary in Trees Susceptible Versus Those With Some Resistance to White Pine Blister Rust?, \$1000

Margaret Mitter McCormick – University of Colorado, working with Jeffry Mitton: A Vertical Mile of Stonecrop: Physiological Implications of Genetic Variation, \$750

The Marr Fund supports research on the biology of Colorado native plants and plant communities.

The Steinkamp Fund supports research on the biology of Colorado rare native plants.

Thanks to the generous contributions of many members and supporters, a total of approximately \$4,000 each year is available for grants. Your donation to these funds is encouraged and welcomed. Please make your check to the Colorado Native Plant Society, designate the fund(s) to which you are donating, and mail to: Treasurer, Colorado Native Plant Society, P.O. Box 200, Fort Collins, C) 80522.

A Call for Proposals: Lightning Talks at the 2016 Colorado Native Plant Society Annual Conference

Graduate and undergraduate students are invited to submit proposals to present their botanical or ecological research (research focused on Colorado native plants preferred) at the Colorado Native Plant Society 2016 Annual Conference on Saturday, September 24, 2016, at the University of Colorado in Boulder, Colorado. The presentations will be lightning talks (5 minute PowerPoint presentations). Eight presentations will be selected.

Please supply the following information in your lightning talk proposal:

Title of talk (with subtitle if title is not descriptive)

Your name, status (undergraduate, master's student, doctoral student), department, university, your thesis/dissertation chair or advisor.

Alan T. Carpenter On Appalachian Trail Adventure

CoNPS member and author of *Reading the Landscapes of Colorado*, Alan Carpenter, will start his 4 1/2 month hike of the Appalachian Trail in April. He will record the experience on his blog: <http://longdistanceadventures.com/preparations-for-hiking-the-appalachian-trail/>. We wish Alan a safe and enjoyable adventure. Alan's wife is botanist Betsy Neely.

American Society of Plant Taxonomists selects Dr. Ron Hartman for Distinguished Service Award

The American Society of Plant Taxonomists (ASPT), the largest North American professional organization of plant taxonomists and systematists in North America, has selected Dr. Ron Hartman to receive the Distinguished Service Award.

The award will be presented at the ASPT Botany 2016 meeting in Savanna, Georgia, on August 1 at the annual banquet. Ron was selected for the ASPT Distinguished Service award due to the large career-long impact his floristics research program has had on western North American botany, and his training of over 50 graduate students in these projects, as well as his long-term, active involvement on the Editorial Board for the Flora of North America Project. During Ron's 38-year career at the University of Wyoming where he served as Curator of the Rocky Mountain Herbarium during his entire tenure, and as a professor in the Botany Department, he personally collected 94,000 specimens. In a 2004 analysis of plant collecting in the U.S. (*Syst.Bot.*29:15-28) the Rocky Mountain Herbarium (RM) was shown to be, by far, the most active herbarium in the country in terms of collecting and herbarium growth. Under Ron's administration the RM set the standard for broad-scale, integrative study, and graduate training in floristics. This announcement from ASPT coincides with Ron's retirement from the University after a long, productive career. We anticipate his continued involvement with the RM as Professor Emeritus of Botany.

This article was reprinted from RM Friends Newsletter, (Rocky Mountain Herbarium) Vol. 1 issue 2, December 15, 2015. http://www.uwyo.edu/botany/rm%20friends/rm%20friends_17dec2015_final3.pdf



Credit: UW photo

Introducing Dominic Cooper

Congratulations to Erica and Carter Cooper on the birth of their son, Dominic Rudolph Cooper, who arrived Saturday evening, March 12th. He weighed in at 8 lb 2 oz, and is reported to be a very calm, quiet baby so far. Big sister, Violet, is delighted to have a baby brother. Erica Cooper is president of the Boulder Chapter of CoNPS.



Violet holding baby brother, Dominic

Cecily Mui's New Job

CoNPS Board member Cecily Mui, has accepted a job with the St. Vrain Creek Coalition (www.saintvraincreekcoalition.org) as its Watershed Coordinator. She will be assisting with flood recovery and restoration efforts on the St. Vrain (including Drake, Lyons, Longmont, etc.) coordinating partnerships, outreach, planning, and construction. Previously, Cecily was a noxious weed specialist with the Colorado Department of Agriculture.



Congratulations, Cecily!

Congratulations to Dr. Stephen Stern on Receiving Tenure



Congratulations to Dr. Stephen Stern, president of the Plateau Chapter of CoNPS and member of the biology faculty at Colorado Mesa University in Grand Junction, on receiving tenure. Our thanks to Stephen for stepping in to teach the Colorado Conifers Workshop in Grand Junction on April 24 when the scheduled instructor had to cancel. Stephen will be teaching a 2-day CoNPS Field Seminar on Grasses of the Grand Junction Area on July 22-23. *To sign up, go to the CoNPS website and select the Member Login. If you don't remember your password, contact Charlie at conpscturner@gmail.com. Once you have signed in, go to "Calendar of Events" and scroll down to July 22 and double-click on the event to sign up for the field seminar.*

SAVE THE DATE: 2016 CoNPS Annual Conference & Colorado Rare Plant Symposium - Sept. 23-25

“Forty Years of Change, 1976-2016: Plants, People, Places”



McAllister Bldg., CU Boulder Photo by Lenore Mitchell

You are invited to join CoNPS in celebrating its 40th Anniversary at the 2016 Annual Conference at the University of Colorado in Boulder. It will be held at CU's MacAllister Building on East Campus (corner of Colorado & Ford), SEEC (Sustainability, Energy, Environment Complex) 4001 Discovery Dr., Boulder. Note it on your calendar now because you won't want to miss this conference. It will have something to interest everyone.

What is happening at this year's conference?

The annual Colorado Rare Plant Symposium will take place on Friday. Although it is attended by many professional botanists, it can be enjoyed by anyone. The slides of the rare plants are a real treat and the talks are interesting. Learn more about threats to native plants by attending this interesting and inexpensive symposium.

The CoNPS Annual Conference on Saturday will focus on history and ecology, plants, places, and people. The conference is geared to botanists, horticulturists, gardeners, and people who love plants, nature, and the environment. Of course, there will be the very popular book sale, silent auction, photo contest, and native plant sale.

Dr. Bill Bowman, Director of the Mountain Research Station of CU, Boulder, is hosting the CoNPS Conference and Colorado Rare Plant Symposium at CU Boulder's East Campus. CoNPS' first president, the plant ecologist John Marr, was the founder of the Mountain Research Station, so it is quite apropos that the current director of the research station is our host. Dr. Bowman will discuss his research on the effects of the changing environment on alpine plants.

Because it is the 40th anniversary of CoNPS, some of the founding and early members will talk about the early years of CoNPS. A lot has changed in the 40 years since CoNPS was founded in 1976, and a number of the speakers will be discussing the changes, advances in the botanical sciences, horticulture, and environmental sciences. They include: Dr. Dieter Wilken, CoNPS first secretary of the Board of Directors; Panayoti Kelaidis, the second secretary; and Dr. David Buckner, who was a student of John Marr and early member.

Environmental scientist and author, Dr. John Emerick, will speak on 40 years of changes at Rocky Mountain National Park. A new edition of Dr. Emerick's book, *Rocky Mountain National Park Natural History Handbook*, was just published. Emerick is currently working on a new edition of his popular book, *From Grassland to Glacier*.

There will be many other wonderful speakers and the afternoon sessions will be split into two tracks: botany and horticulture. This year, the botany track will include something extra: undergraduate and graduate students from Colorado colleges and universities will present lightning talks on their research! Jen Ackerfield will discuss the nomenclature used in her *Flora of Colorado*. The gardening track will include a number of fascinating talks on gardening with native plants and a panel discussion of natives in the horticulture industry.

Citizen science has received much attention recently and, in the afternoon, attendees will reunite after the track talks and enjoy five lightning talks about citizen science projects.

Immediately after the conference, the CoNPS Social will begin at 4 p.m. and last until 6 p.m. All conference attendees are invited. We will celebrate the 40th anniversary of CoNPS with a cake, appetizers, and drinks. Join the celebration!

On Sunday, conference participants can attend a free field trip. Watch CoNPS E-News and *Aquilegia* for more information.

Landscaping with Colorado Native Plants Conference a Big Hit!



Conference Planning Committee Members (from left to right: Karen Crumbaker, Ronda Koski, Jim Tolstrup, Amy Yarger, Linda Hellow, Irene Shonle, Deryn Davidson, and Jen Boussetot. Not in photo: Susan Crick Smith. Photo by Desneige Hallbert

The Landscaping with Colorado Native Plants Conference was held on March 12, 2016, in Loveland. The conference was a big success with 200 people in attendance, who were a mix of homeowners and landscape professionals. The conference was put on by a number of organizations including CoNPS and (in alphabetical order) the Butterfly Pavilion, CSU Extension/ Native Plant Masters®, Front Range Wild Ones, and HPEC. It was felt that the time was right for the conference with the increased interest in providing habitat for pollinators and the desire to decrease water use in the yard as well as decreasing or eliminating the use of pesticides, herbicides, and fertilizers that could harm wildlife and water quality.

Noted Colorado author and plant biologist, Susan Tweit, was the keynote speaker, telling the inspiring story of how her efforts in restoring a blighted industrial property in Salida, CO, grew into a movement. Her talk, "The Ditch and the Meadow: How Native Plants and Gardeners Revived a Neighborhood and Changed the Culture of a Town" included photos of the park and trail system that grew out of her efforts.



Susan Tweit

Other talks included: Designing with Natives by Karla Dakin of K. Dakin Design, Louisville; Construction of Native Landscapes by Alison Peck of Matrix Gardens, Boulder; Creating and Maximizing Micro-Climates in Your Native Garden by Jim Tolstrup of High Plains Environmental Center, Loveland; Edible and Medicinal Native Plants: Karen Vail and Mary O'Brien of Steamboat Springs and Hayden; Native Plants for Every Situation: Irene Shonle of Gilpin County CSU Extension Program; Habitat Gardens: Susan Crick Smith of Front Range Wild Ones, Denver.

The Conference ended with five Virtual Garden Tours from homeowners and landscape designers who retrofitted traditionally landscaped yards with native plants. Themes include a

foothills rock garden (Carol English), no-lawn yard (Jan & Charlie Turner), prairie garden (Rick Brune), rain-powered landscape (Kenton Seth), and a habitat garden (Susan Crick Smith).

There is obviously a huge demand for native plant landscaping information and the committee is already planning next year's conference. A bit of exciting news is that this year's keynote speaker, Susan Tweit, has joined the conference planning committee for 2017 as has Nick Daniel, Horticulturist, Denver Botanic Gardens!

Native Plant Gardening Guide Now Available Online

The online booklet, *Low Water Native Plants for Colorado Gardens: Front Range and Foothills*, is now available online on the CoNPS homepage, <https://conps.org>. It is a work in progress and the CoNPS Native Plant Garden Guide Committee is still updating and improving it. They are also working on booklets for other regions within the state: Mountains (over 7,500 feet), Southeastern Colorado, Prairies and Plains, and Western Slope (Low Elevation).

Low-Water Native Plants for Colorado Gardens: Front Range & Foothills



The committee producing the booklets includes Irene Shonle (chair, Mountains), Deryn Davidson (Front Range & Foothills), Jim Tolstrup (Southeastern Colorado), Nick Daniel (Western Slope), Susan Crick Smith (Prairie and Plains), and Amy Yarger (Introduction, gardening). Jan Loechell Turner is serving as editor and is performing the layout and design. Linda Smith is the proofreader.















The booklet contains information on how to create a native plant garden, a table of native plants with their characteristics, a photo album of native plants, two landscape designs using native plants, and a photo album of yards with native plants.

The CoNPS website has additional information on native plant gardening and sources of native plants and seeds on the Horticulture & Restoration Committee page.

The booklet was produced as a collaboration between CoNPS, CSU Extension/Native Plant Master Program® (Irene Shonle and Deryn Davidson), the Butterfly Pavilion (Amy Yarger), Denver Botanic Gardens (Nick Daniel), Front Range Wild Ones (Susan Crick Smith), and the High Plains Environmental Center (Jim Tolstrup).

Do you have a fabulous garden that includes a good number of Colorado native plants? Please send your native plant landscape photos to Jan Turner for inclusion in CoNPS gardening guides. Our committee is interested in photos from all regions of the state. Please email jpeg files (1-5 MB preferred) to JLTurner@regis.edu.

CoNPS Online Spring Native Plant Sale

 <p>Maximilian Sunflower - <i>Helianthus maximiliani</i> (HPEC) Add \$7.50</p>	 <p>Golden Banner - <i>Thermopsis divaricata</i> (HPEC) 4 inch Add \$4</p>	 <p>Columbine Rocky Mountain - <i>Aquilegia caerulea</i> (HPEC) 1 gal Add \$7.50</p>	 <p>Columbine, Yellow - <i>Aquilegia chrysantha</i> (HPEC) 4 inch and 1 gal Add \$4</p>	 <p>Blue Flax - <i>Linum lewisii</i> (HPEC) 1 gal Height x Width - 30" x 18" Add \$7.50</p>	 <p>Lanceleaf Stone Crop - <i>Sedum lanceolatum</i> (HPEC) 4 inch Add \$4</p>	 <p>Canada Golden Rod - <i>Solidago canadensis</i> (HPEC) 1 gal Add \$7.50</p>
 <p>Bee Balm - <i>Monarda fistulosa</i> (HPEC) 4 inch and 1 gal Add \$4</p>	 <p>Blanketflower - <i>Gaillardia aristata</i> (HPEC) 1 gal Add \$7.50</p>	 <p>Black-Eyed Susan - <i>Rudbeckia hirta</i> (HPEC) 4 inch and 1 gal Add \$4</p>	 <p>Milkweed, Butterfly - <i>Asclepias tuberosa</i> (HPEC) 4 inch and 1 gal Add \$4</p>	 <p>Milkweed, Swamp - <i>Asclepias incarnata</i> (HPEC) 4 inch and 1 gal Add \$4</p>	 <p>Cut-leaf Coneflower - <i>Rudbeckia laciniata</i> (HPEC) 4 inch and 1 gal Add \$4</p>	 <p>Early Bluetop Fleabane - <i>Erigeron vetensis</i> (HPEC) 4 inch Add \$4</p>

CoNPS First Online Native Plant Sale a Huge Success!

It can be difficult to find the native plants you want at nurseries. Therefore, for the first time, CoNPS has had an online native plant sale. The plant sale began January 1, 2016 and ended April 15 (from New Year's to Tax Day).

Hundreds of native plants were sold through the CoNPS online plant sale. Home gardeners and organizations pre-ordering native plants that will be available in time for spring planting. Plants are neonicotinoid-free and are from the nurseries of the High Plains Environmental Center in Loveland, the Fort Collins Wholesale Nursery, and several other nurseries in Colorado.

Jim Tolstrup, Chair of the CoNPS Horticulture Committee, came up with the idea of an online plant sale and CoNPS Membership & Marketing Coordinator, Jen Boussetot, assisted Jim with the planning and implementation of the online sale. Charlie Turner created the plant sale webpages.

There will be three pickup locations: **Boulder** – Sat. May 7, 2016, at 9 a.m. -12 noon at City of Boulder Open Space and Mountain Parks office parking lot at 66 S. Cherryvale Rd. **Denver** – Saturday, May 7, 2016, at 9 a.m. -12 noon in the City of Denver greenhouse parking lot at City Park, 2500 E. 23rd Ave. Denver, CO 80205. **Loveland** – Thursday, May 5, 2016, at 6 - 8 p.m. at the High Plains Environmental Center, 4555 Long Pine Lake Drive, Loveland.

Boulder Field Trip Leaders Needed

Summer Field Trip season is coming! Our Boulder chapter will hold 1-2 field trips a month between May and September, on weekday evenings. We need YOU to volunteer as a Field Trip Leader! The ideal field trip has a theme of which the leader is knowledgeable. Some examples could include: pick a genus, medicinal/edible plants, lichens, pick a habitat (alpine species) etc. You may choose your location and date. Please contact us at boulderconps@gmail.com to volunteer or if you have questions!



Photo © Audrey Boag, 2014.

Hummingbird Haiku

by Sally L. White

Around the feeder
Young hummingbirds float and buzz
Gorgetts flash crimson.

In this cool morning
Such beauty is hovering
As they fuss, feed, fight.

Another Use for Lichens

This broadtail hummingbird has incorporated lichens (*Parmelia* and *Xanthoparmelia*) into her nest.

Volunteer for CoNPS Conservation & Field Studies Programs

The CoNPS Conservation Committee has set up new on-the-ground Conservation Programs for the 2016 field season and the Field Studies Committee is offering two bioblitzes at Brown's Canyon National Monument. Check out the Calendar on the CoNPS website for more information and to register for the programs.

April 30: Rare Plant Seed Scouts Field Workshop in DeBeque: Learn how to find and survey populations of rare plants to determine the best times and locations for seed collection; then join teams of CoNPS volunteers to survey several species in the oil and gas exploration areas of Rio Blanco and Garfield counties. Based on your surveys, Denver Botanic Gardens research staff will collect seeds of these rare plants for storage at the National Seeds Storage Lab in Ft. Collins.

June 1-3: Browns Canyon National Monument Field Studies Trip: Work with teams of CoNPS volunteers to document the native plant species in this newly designated national monument. This program is open to everyone from novice plant enthusiasts to botanic experts.

June 9: Backyard Phenology (How to be a citizen scientist in your own backyard). This workshop at the Denver Botanic Gardens (DBG) will teach you how to set up and collect phenology (life-cycle) data on the plants in your own backyard for the National Phenology Network. You'll learn how to use the NPN website, and then go out in the Gardens to practice collecting data from the DBG Phenology Trail.

July 9: Rare Plant Seed Scouts Field Workshop in Canon City. See April 30 above for description. The CoNPS volunteer team will survey several rare plant species in the barrens in Teller, El Paso and Fremont counties.

August 23-25: Browns Canyon National Monument Field Studies Trip. See June 1-3 above for description. This section will document late summer and early fall native plant species.

Date TBD: CoNPS Seed Collection Teams with WRV: There will be two opportunities to join a CoNPS botanical team to collect seeds on a Wildlands Restoration Volunteers (WRV) program. This program is open to all levels of expertise as full training is provided.

Congratulations to Denise Culver & Joanna Lemly on Colorado Wetlands Mobile App

The Colorado Wetlands Mobile App delivers information about Colorado wetlands right to your smart-phone (iPhone or Android) or tablet.

The Colorado Wetland Mobile App contains three main sections:

- Wetland Plants: Detailed descriptions and photos of 711 plant species found in Colorado's wetland and riparian areas. The plants are searchable through many different search criteria and filters.
- Wetland Maps: Access to digital National Wetland Inventory (NWI) maps. The App shows NWI maps for the entire state of Colorado and can use location information from the device to show mapped wetland where the user is located. The Maps screen can also be used to search for wetland plants potentially found at the user's location.
- Wetland Types: Brief description of the most common wetland and riparian types found in Colorado. Wetland types can also be used as a filter for searching plant species.



<https://itunes.apple.com/us/app/id1077511822>

Aquilegia Volume 40 No. 1 Winter 2015-2016

Huge Native Plant Sale

Saturday, May 14, 9 a.m. to 3 p.m.

High Plains Environmental Center, 2968 Bluestem Willow Drive (one mile north of the intersection of Hwy 34 and Boyd Lake Road. Turn right (east) at the Lakes at Centerra sign, onto Long Pine Lake, and drive to the end of the road.)

Plants are neonicotinoid-free (pollinator-friendly).

Educational booths, live acoustic music, Silver Seed food truck, and more!

<http://suburbitat.org>

Marlene Borneman in "Heart of the Rockies"

CoNPS member, Marlene Borneman, and participants in her group were included in the final episode of "Heart of the World:" Colorado's National Parks in the alpine tundra in the Rockies. The series will appear on PBS. See <https://www.facebook.com/HeartoftheWorldColoradoNationalParks/> for air dates.

USFS Botanist Steve Popovich Goes East - Temporarily

Steve Popovich, USFS Botanist in Fort Collins, will be serving as the second acting regional botanist in USFS District 9 from April 17 to mid-July or August. District 9 includes the national forests and grasslands of Minnesota south to Missouri, east to Washington, D.C., and north to Maine.

Urgent! Herbaria Need Your Help!

News from Native Plant Conservation Campaign

On March 16, the National Science Foundation (NSF) announced that it was indefinitely suspending funding for the Collections in Support of Biological Research (CSBR) Program. This Program is one of very few funding sources that help maintain biological specimen collections such as herbaria and seed collections. The NSF stated that it will use the suspension to evaluate the program and its impacts and efficacy.

If you wish to comment on the funding suspension, the NSF is accepting feedback. https://dbinsfblog.wordpress.com/2016/04/04/csbr_guidance/. Send comments to DBIC-SBR@nsf.gov. You can review their guidelines and instructions on providing feedback.

For more information:

- Read the Native Plant Conservation Campaign (NPCC) Letter asking NSF to restore and expand funding. (<http://plantsocieties.cnps.org/images/NSFBiolSpecCollec4.15.16NPCC-lett.pdf>)
- Read the American Institute of Biological Scientists (AIBS) letter to NSF about collections in support of biological research (https://www.aibs.org/position-statements/20160324_nsf_collections.html)
- See article in *Nature* on the funding suspension (<http://www.nature.com/news/biological-specimen-troves-threatened-by-funding-pause-1.19599>)
- See NSF Announcement of the suspension (<https://dbinsfblog.wordpress.com/2016/03/16/csbr-fy17/>)
- See the NSF Description of the Biological Collections Program (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503651)

The Native Plant Conservation Campaign letter in support of the program pointed out some irreplaceable and essential functions of herbaria and other biological specimen collections:

- Identifying species new to science, including extinct and newly emerging taxa.
- Understanding the processes of species emergence and extinction.
- Maintaining repositories of spatial and temporal data on biological diversity, evolution and adaptation.
- Mapping species' historic ranges to evaluate species endangerment.
- Documenting and understanding the responses of species and ecosystems to climate change.
- Understanding the spatial and temporal development, distribution, and movement of diseases and disease organisms.

Emily Roberson
Native Plant Conservation Campaign

<http://plantsocieties.cnps.org/>

(More NPCC news on bottom of page 39.)



Irene Shonle and Cecily Mui

CoNPS at the CWMA Meeting

Cecily Mui and Irene Shonle staffed a booth at the Colorado Weed Manager's Association meeting in Grand Junction on Dec 2 and 3. Weed managers were able to pick up materials and learn more about the Colorado Native Plant Society and the Colorado Native Plant Master Program®.

Southern Rockies Seed Network Annual Conference

Attendees enjoyed the talks of Andrew Bower, Kristina Huford, Randy Mandel, and Rick Novak on Dec. 3, 2015, at the 2nd Southern Rockies Seed Network Annual Conference in Loveland.

CoNPS was one of the organizations represented with a display at the conference, staffed by Education & Outreach Chair, Sara Copp, with the assistance of Membership & Marketing Coordinator, Jen Bousselot. Jim Tolstrup, Executive Director of the High Plains Environmental Center (HPEC) and CoNPS Horticulture Committee Chair, was at the conference representing HPEC. CoNPS Field Studies Chair, Steve Popovich, and CoNPS Presidents, Charlie and Jan Turner, also attended.



Sara Copp, Jan L. Turner, Jen Bousselot, and Jim Tolstrup. Photos by Charlie Turner

The North American Rock Garden Society Annual Meeting in Colorado June 22-27

The North American Rock Garden Society is having its annual meeting in Denver and Steamboat Springs June 22 -27th. The focus is semi-arid continental mountain ranges and steppes. There will be field trips around Steamboat highlighting the native flora. Attendees can explore Northwestern Colorado in prime wildflower season with hikes and trips to see steppe, montane and alpine plant communities along with tours of private gardens, Denver Botanic Gardens, and Yampa River Botanic Park. Attend lectures by local and international experts on the importance of the world's steppes and continental mountain ranges in both the garden and wild in the evenings. There will also be book sales and signings. The price is \$360 for NARGS members \$400 for non-NARGS members. For information contact Mike Kintgen at kintgenm@botanicgardens.org.

Ann Armstrong Memorial Fund

To the CoNPS Community:

I am pleased to announce the creation of the Ann Armstrong Fund sponsored by the Colorado Native Plant Society (CoNPS). The purpose of the fund is to create greater awareness of Colorado's native flora in ways that we hope Ann would appreciate.

An initial goal is to install a bench at the Ann Armstrong Park in Boulder at the intersection of North and Alpine in Boulder. This park is dominated by native species, and the hope is to encourage folks to stop by and appreciate the native species and even collect seed to propagate them in their own landscapes. The City of Boulder memorial bench program is currently on hold but it is anticipated to resume in 6 months. Both the purchase and installation of the bench would have to be covered by donations, and the current estimate for the bench alone is about \$3,000. If for some reason the City of Boulder does not resume the memorial bench program, the fund will be directed to other educational goals.

If you would like to donate, please pay by credit card on the CoNPS website (<http://conps.org>) or send a check made out to CoNPS – Ann Armstrong Fund and mail to: Colorado Native Plant Society, P.O. Box 200, Fort Collins, CO 80522. If you have any questions, please call or email. Patrick Murphy, 303-444-4358, phmurphy@aol.com.

Patrick Murphy

The Ann Armstrong Park in Boulder is a prairie restoration demonstration area of short-grass prairie. The park, located at 1650 Alpine Ave., was named Alpine Park in 1997 and re-named Ann Armstrong Park in 2008.

ANN ARMSTRONG

Goodbye to a Beautiful Radiant Soul

Ann Armstrong, plant ecologist for the city of Boulder Open Space and Mountain Parks, passed away December 1, 2004. Ann's career included a degree in Horticulture from CSU, a Master's degree in Museum Studies at CU, and a volunteer naturalist position for Boulder County Parks and Open Space. Much of Ann's life was spent learning about horticulture, native plants, plant communities, wildlife and the ecology of Colorado Front Range ecosystems. Her love for learning was matched by her love for teaching. Ann could transform her knowledge into a form that inspired and captured the interest of those around her.



Ann's passion for the natural world and its protection was contagious. Those who knew Ann agree that she was a generous, loving and genuine person with such a young spirit that touched their lives and inspired them to become better people. Goodbye to a beautiful radiant soul. May there be fields of flowers for you in heaven.

Excerpt from article by Carol Kampert, Lynn Riedel, Jennifer Sherry & Laine Johnson in *Aquilegia*, Vol. 29, No. 1, 2005, p. 2.

Editor's note: Ann Armstrong was a very active member of CoNPS, playing a variety of roles over the years.

Aquilegia Volume 40 No. 1 Winter 2015-2016

Donations Needed to Publish Field Guide

Donations are needed to help fund the printing of *Field Guide to the Lichens of White Rocks, Boulder, Colorado* by Erin Tripp, published by University Press of Colorado.

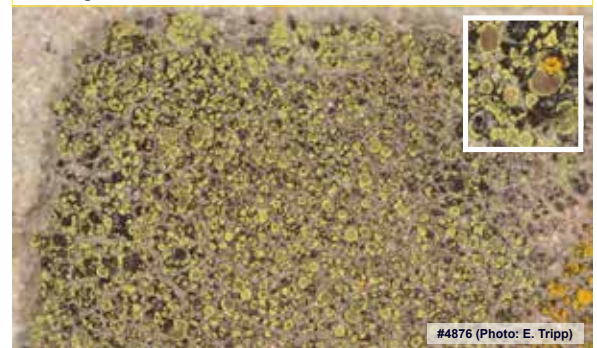
It is a full-color illustrated guide to an ecologically unique and protected area of the Front Range Mountains of Colorado. At present, there are very few field guides available for lichens anywhere in North America, and none that fully cover all the species in a particular area or park. In this case, a rare sandstone outcropping is the focus of investigation, which makes this Field Guide further unique and one of a kind within North America. Historically, lichen literature was technical in nature and generally only used by academics or serious scholars. The present Guide makes the lichens of White Rocks accessible to anyone. The author includes necessary technical information but presents it in a way that is understandable and enjoyable to read. In the words of one reviewer, "her ongoing commentary keeps it engaging, but in no way does it lessen the scientific validity." Many difficult species that are often omitted from other field guides (such as crustose species) are fully covered in the present work. Moreover, many species included in this Guide are common constituents of rock formations throughout Colorado and much of the rest of the western United States, further increasing the utility of this book. The Field Guide is beautifully illustrated with comprehensive, high-resolution photographs of all 56 species present at the site.

Let's help Erin Tripp and the University Press of Colorado make it possible to print this useful color guide. Donations for the guide can be made on the CoNPS website homepage (<https://conps.org>). Scroll down the page to get to the donation link.

SAMPLE PAGE:

Candelariella clarkiae

Dina's Digression



#4876 (Photo: E. Tripp)

Welcome to the City of Boulder—where you can still discover species new to science just a few miles from University of Colorado! *Candelariella clarkiae* is a remarkable taxon and unmistakable among all other lichens at White Rocks owing to its distinctive chartreuse color and crustose growth form with a weakly formed thallus of dispersed areoles (see inset). The distinctive thallus color and apothecia margins may not immediately suggest *Candelariella*, which is typically more egg-yolk yellow in color as in *C. rosulans* (pictured in the far right of main photo as well as overgrowing an apothecium of the new species in the inset). However, the presence of calycin and DNA sequence data clearly confirm its generic affinity. Besides color, *C. clarkiae* is marked by immersed, lecanorine apothecia with thick margins that are concolorous with the thallus and apothecia discs that are green when young and mature to a pale salmon color. Elsewhere in our area, *C. clarkiae* might be confused for *C. vitellina* or *C. aurella*, from which it differs by not being polysporous (as in *C. vitellina*) or by occurring on siliceous rocks and having a distinctive thallus (vs. on calcareous rocks and lacking a distinctive thallus in *C. aurella*). See Westberg et al. 2011 (*Bryologist*) for keys to all (other) North American *Candelariella*. This species was named to honor Dina Clark, Collections Manager at the COLO Herbarium, for her countless contributions to knowledge of Colorado botany. See further information on *C. clarkiae* under *Lecidea hoganii*.

Chemistry: Calycin, pulvinic acid; Spot tests: K-, C-, KC-, P-, UV+ dull orange

Substrate & Ecology: Very rare on sandstone.

Distribution: Currently known only from the type locality at White Rocks, Boulder, Colorado.

Literature: Tripp, E.A. and J.C. Lendemer. 2015 [in press]. *Candelariella clarkiae* and *Lecidea hoganii*: two lichen species new to science White Rocks Open Space, City of Boulder, Colorado. *The Bryologist*.

CoNPS Communication: E-News & Social Media

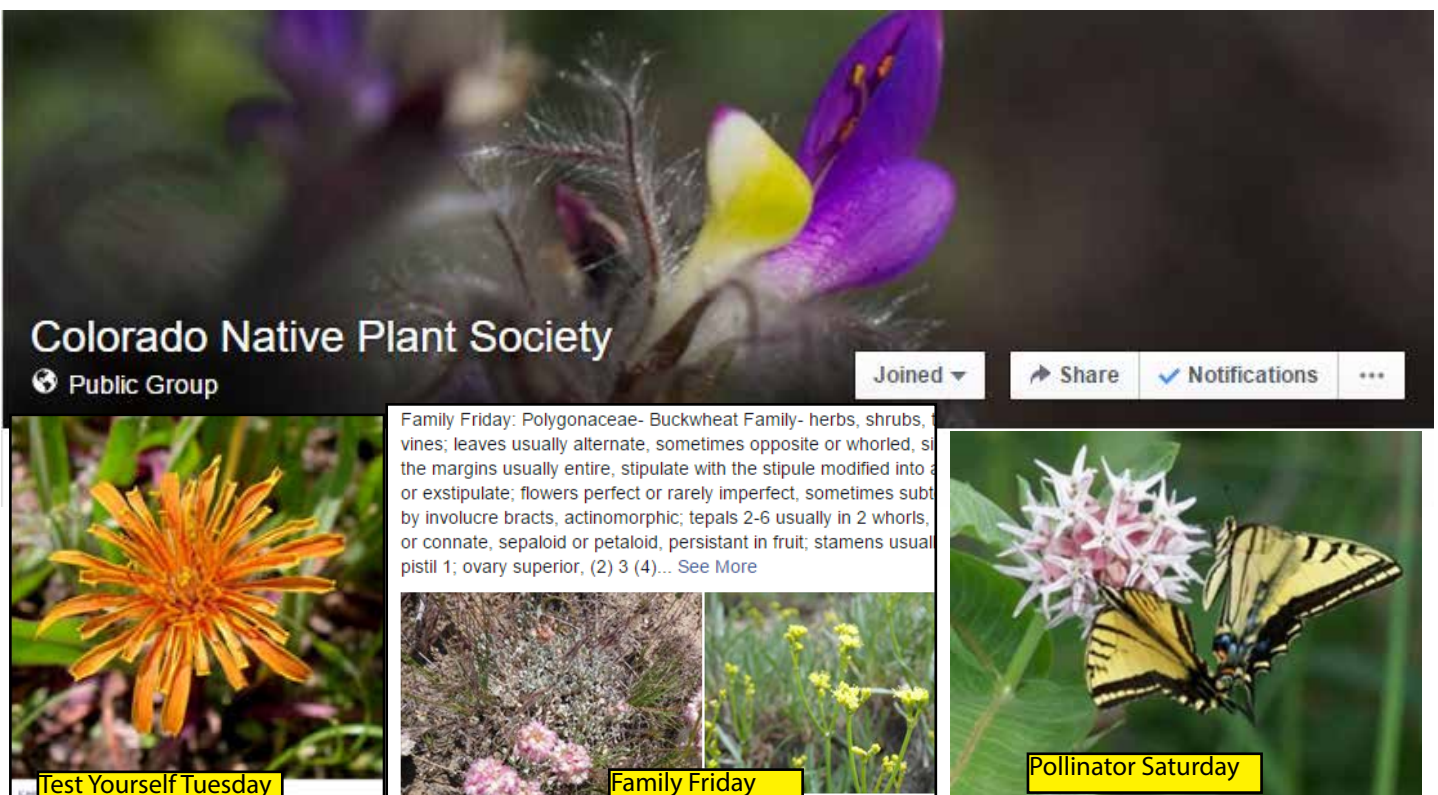
Email is Needed to Receive Current Chapter News and E-News

Like most other organizations, CoNPS is migrating more and more onto the internet. It is important for CoNPS members to have an email account to receive the most current information from CoNPS. For a number of years, there have been monthly chapter emails, reminding members about upcoming chapter meetings and field trips but also providing other time-sensitive information including local events and job announcements. *Aquilegia: Newsletter of the Colorado Native Plant Society* is still available in print 5 times a year but plenty of things are happening in between issues of *Aquilegia*. To fill in the gap, we now have an E-Newsletter (E-News) edited by CoNPS Membership and Marketing Coordinator, Jen Boussetot.

If you don't have internet access or email, your local public library can probably help you. Most public libraries have computers with internet access that are available to the public. The Reference Librarian can help you set up a free email account on the internet. You can then send your email address to conpscturner@gmail.com and Charlie will add your email address to your member profile so you will receive the CoNPS E-News approximately every 10 days and your chapter email newsletter monthly. Be sure to write down your email address and password. You might want to keep a small piece of paper with that information in your wallet. When you return to the library, the librarian can help you sign into your email account, using your email address and password, so you can check for the CoNPS E-News and emails from your chapter presidents. They will give you the latest CoNPS schedule of field trips, programs, workshops, field seminars, and other events that may interest you. Ask your librarian if they can print off the chapter and e-newsletters for you. There may be a print charge.

Social Media to Share Photos, Ideas, Questions, and News with Other Members Instantly

For those who enjoy their computers, tablets, and smart phones, Facebook, Twitter, LinkedIn, and Instagram offer more from CoNPS. On Facebook and Twitter, there are themes for most days of the week. CoNPS has a public Facebook page and a community Facebook page. CoNPS public Facebook page has over 1,500 members. CoNPS Facebook Master, Carol English, with the assistance of Jen Boussetot and the members of the CoNPS Facebook page keep things active. Tuesdays are fun because of the plant quiz (Test Yourself Tuesday). On Wildflower Wednesday, members post beautiful photos. Family Friday features a plant family with photos and plant characteristics. On Pollinators Saturday, you will find amazing photos of pollinators posted on the site. It is a great way to learn. Members also post news items and post photos of plants that they need help identifying on any day of the week. There are many expert botanists, horticulturists, and expert amateurs who can help you identify your mystery plants. Just post your mystery plant on the CoNPS Facebook website. CoNPS also has a Facebook community page where Jen Boussetot posts events and articles from newspapers, magazines, and websites. Jen usually posts these on the CoNPS public page, too. CoNPS Twitter Master, Sally White, with the assistance of Jen Boussetot, provides the same service through Twitter. Education & Outreach Chair, Sara Copp, started a CoNPS Linked-In page. Linked-In is a social media site geared to jobs and employment. For CoNPS photos, see Instagram. CoNPS social media sites are entertaining and informative. Jen Boussetot coordinates CoNPS social media.



Colorado Native Plant Society
Public Group

Joined ▾ Share Notifications ...

Family Friday: Polygonaceae- Buckwheat Family- herbs, shrubs, vines; leaves usually alternate, sometimes opposite or whorled, si the margins usually entire, stipulate with the stipule modified into or exstipulate; flowers perfect or rarely imperfect, sometimes subt by involucre bracts, actinomorphic; tepals 2-6 usually in 2 whorls, or connate, sepaloid or petaloid, persistant in fruit; stamens usual pistil 1; ovary superior, (2) 3 (4)... See More

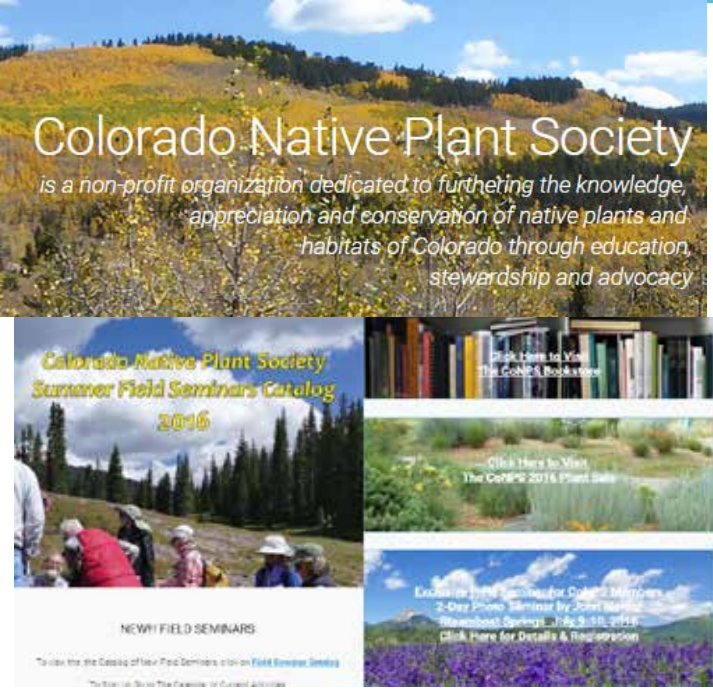
Test Yourself Tuesday

Family Friday

Pollinator Saturday

How to Use the New CoNPS Website <https://conps.org>

Home Calendar of Events About Us Resources Learn Volunteer Current Activities **JOIN - DONATE** **MEMBER LOGIN**



The Website

Mo Ewing created a beautiful new website through WordPress that allows more than one person (not just the CoNPS Webmaster) to update the website. At the top of the webpage is a menu that includes Calendar of Events, About Us, Resources, Learn, Volunteer, Current Activities, Join/Donate, and Member Login.

Home page

The homepage is <https://conps.org>. The items at the top of the menu will allow you to navigate the website and that is where the web address www.conps.org will take you. If you scroll down the home page, there are announcements of current news and items of importance. Part way down the page is a search box to search for items on the CoNPS website.

How do you sign up for a class or event on the website?

First, click on Member Login (on the right side of blue menu bar) so you receive the member discount. You sign in using your email address and your password. If you don't remember your password, contact Charlie at conpscturner@gmail.com. Once you are at your profile page, click on Calendar of Events near the left side on the blue menu bar.

Calendar of Events

Member Log In - Manage Your Account - Renew - Sign Up for Events **Member Login**

If you have any problems email Charlie Turner at conpscturner@gmail.com

Once you have signed in you can go to the Calendar of Events or Current Events tabs and get special member rates and other paid events. To get back here to sign out, just click on the Member Login button.

On this page the About tab updates your general information. Make sure that your email is correct as all correspondence will go there. On this page you can also renew your membership. Your renewal date is shown in the Profile tab.

The Profile tab lets you sign up for committees, order a hard copy of *Aquilegia*, or change your chapter.

Calendar of Events

Click on the event to Get Information and to Register

CoNPS Members - In order to get member rates, you must Log In first!
To get on a waiting list, cancel or change an event email Linda Smith at conps@conps.org

Sun	Mon	Tue	Wed	Thu	Fri
Jul 13 FIELD SEMINAR (2 DAY): Colorado Bumblebees: Native Pollinators of Colorado Plants - Carol	Jul 14 FIELD SEMINAR (2 DAY): Colorado Bumblebees: Native Pollinators of Colorado Plants - Carol	Jul 15 FIELD SEMINAR: Front Range Thistle Identification			

Description of field seminar

FIELD SEMINAR (2 DAY): Colorado Bumblebees
Carol Kearns & Diana Oliveras, - Boulder

Show this event:

Two half-day sessions \$45 (CoNPS member) \$55 (non-member)

July 13 (9 a.m. - 1 p.m.): We will meet on the CU campus in the morning on day one and use the microscope. We will catch bees in gardens on or near campus.
July 14 (9 a.m. - 1 p.m.): On day two we will carpool to two different field sites, 1 campus)

Classroom session: CU Boulder campus, Room TBA
Field sessions: Minnick Open Space, Boulder, Co., CO/N 40°00.065 W 105°31.065 Boulder, CO.

Description: We will learn about the bumblebee life cycle and the importance of a diversity of mid-altitude flowers (about 8500 ft. elevation), and also examine them closely, and released after study. We will learn to identify bumblebees.

Physical difficulty: Moderate

What students should bring to class: hand lens, sun screen, hat, water, lunch or pack of pockets or a pack (fanny pack works well)

Instructors: Carol Kearns and Diana Oliveras have been working together, studying in pollination ecology and Diana has a Ph.D. in plant reproductive biology. Both have published papers on Front Range pollinators and have hosted many talks. Bumblebees are the "charismatic megafauna" of the insect pollinators.

Venue: CU Campus, Minnick Open Space Boulder, and Private Pasture, Sargantloaf Rd, Boulder

Starts: Wed Jul 13 2016, 9:00am MDT
Ends: Thu Jul 14 2016, 1:00pm MDT

Register Now

Double-click on the event of interest. (for example, the Colorado Bumblebee Field Seminar on July 13-14). That will open up a description of the event and a blue "Register Now" button is at the end of the description. When you click the button, you will be taken to the registration screen.

Questions about the webpage? Email Mo Ewing (bayardewing@gmail.com) or Charlie Turner (conpscturner@gmail.com) for help.

Rudi's Retirement Saddens Botanical Bibliophiles

by Jan Loechell Turner

I'm a Rudi Schmid fan and I'm sad that Dr. Rudolf ("Rudi") Schmid is retiring after serving as the editor of the RevNot (Reviews and Notices of Publications) column of the prestigious journal, *Taxon: Journal of the International Society for Plant Taxonomy* from 1986 to 2015. I am certain that I am but one in a large group of Rudi Schmid fans. Schmid's book reviews are literate and literary, humorous, creative, and, quite charmingly, often have references to the writings of Lewis Carroll (author of *Alice in Wonderland*, *Alice in the Looking Glass*, and many delightful poems such as "Jabberwocky"). Schmid has been extremely productive during his 30 years as RevNot editor. In the 130 issues of *Taxon* in which Rudi served as RevNot editor, his column contained 1,006 reviews and commentaries, thousands of notices of publications, and filled 2,645 pages!

Schmid is professor emeritus of Integrative Biology, UC Berkeley, a botanist, and a scholar of the history of women botanists. His knowledge is encyclopedic. He produced most of the RevNot columns while teaching at UC Berkeley, a truly amazing achievement. He kept up his productivity after being diagnosed with Parkinson's Disease in 2005. He has an interest in the history of science and has created a webpage on early women botanists including Agnes Arber, Emily Gregory, Beatrix Potter (yes, THE Beatrix Potter of Peter Rabbit fame!), Ethel Sargent, and Edith Saunders. (<http://www.rudischmid.com/arber/#gregory>). He has written articles on women botanists with his daughter, Mena Schmid, who is a software engineer.

His column has provided an excellent way to keep up with the great variety of books on botanical topics and other publications that publishers have sent to him and that he has found in the well-stocked UC Berkeley Biosciences Library. Schmid's knowledge of the botanical literature allowed him to provide an astute analysis of the books he reviewed and to compare them to other books on the subject. Unfortunately, he is suf-



Rudi and his dog, Fleur. Photo © Mena Schmid.

fering from vision problems that make it untenable for him to continue as RevNot editor.

According to Schmid: "On 7 September 2015 (Labor Day in the U.S.) I sent to Vicki Funk, President of IAPT, and to several other Council members an e-mail stating that because of vision problems related to my DBS (deep brain stimulation) operations and Parkinson's Disease, 2015 must be my last (30th) year as RevNot editor... Several persons over the years have suggested that the 130 columns be made available via a database on a CD-ROM and/or on the IAPT website."

Rudi's witty and informative interviews of himself have appeared in *Taxon* to commemorate special anniversaries. In the
(continued on next page)

Rudi's Greatest Hits:

Here are some of Rudi's greatest hits (that is, titles of his favorite book reviews) to give you the flavor of his humor and writing style (from *Taxon* 60(1), February 2011, p. 300, "100 Issues, 25 Years":

- Comparative morphology done in a taxonomic vacuum. (May 1990)
- 1) Bibliographic info solely on dust jackets, being ephemera, will end up in the dust bin of history; (2) Schmid's crotchety sermon #2 (actually probably #227 or so); (3) Lost in the ozone, lost in space, or deep in the heart of cyberspace. (Aug. 1994)
- Evolutionary trends in basic botany textbooks since 1995. (May 1995)
- Marianne North: Hagiography (?) of a botanical artist versus deconstructionism run amuck
- Botanical art transcends botanical pornography (Feb. 1988)
- A bibliographically Kafkaesque situation (August 1988)
- Bamboozled by botany, Beatrix bypasses bigoted biology, begins babying bountiful bunnies: OR Beatrix Potter (1866-1943) as a mycologist: The period before Peter Rabbit and friends (May 1999)
- Durham to Gudde (and Alice to Humpty Dumpty): "Must a name mean something?"

February 1996 interview, he asked himself about the history of the column (p. 188): "...The column was called "New taxonomic literature" in vol. 1 (1951). Frans Stafleau spent 36 years editing *Taxon* and the RevNot column and with it was variously assisted by J. Lanjouw, K.U. Kramer, R.S. Cowan, and myself. In the early 1980s I was sending notices and occasional reviews to Dick Cowan. When Dick retired to Western Australia, the editorship changed from Cowan & Stafleau to Schmid & Stafleau."

In the interview, Rudi was asked about his dust jacket fetish: "I've always like book dust jackets but have become particularly fond of them ever since the CD gained ascendancy with the concomitant loss of all that LP artwork. Moreover, dust jackets

often contain valuable information...The UCB Biosciences Library gives me all of their dust jackets, which have myriad uses. I quote from many in my columns. I keep a few dust jackets in the closet. Jackets with animals on them go to a five-year-old (that's not a good age for botany). I use dull dust jackets to line the bottom of my kitchen garbage basket. Nothing is wasted."

These samples from his column give you the flavor of his writing. All good things come to an end or, as the king said to the White Rabbit in Lewis Carroll's *Alice's Adventures in Wonderland* "Begin at the beginning and go on till you come to the end; then stop." We are sorry to see you stop, Rudi. Your reviews will be missed. Thank you for the many years of good reading and entertainment that you provided. You made book reviews fun.

Floristic Inventory at the Shambhala Mountain Center by Renee Galeano-Popp

From July 2013 through the end of May 2014, a floristic inventory was conducted at Shambhala Mountain Center (SMC) in Red Feather Lakes, CO. Some follow-up surveys occurred in 2015. SMC is a 600 acre Buddhist retreat center characterized by wet meadows, streams, ponds, and forests surrounded by rocky peaks. It was founded in 1971 by Chogyam Trungpa Rinpoche and the Great Stupa of Dharmakaya was consecrated in 2001.

The floristic work was initially coordinated with Colorado State University (CSU) Herbarium and fieldwork was conducted by Renee Galeano-Popp with part-time assistance from Lori Brummer. Numerous others helped with the collections, namely Richard Swaback and Jared LaVeille of SMC. All specimens were verified by either Jennifer Ackerfield (CSU) or B. E. Nelson (University of Wyoming). While this was not a complete inventory of the site and more species are sure to be found there, a total of 326 taxa have been identified to date and well over 700 specimens have been deposited with the Rocky Mountain Herbarium in Laramie. The full list can be found on SEINet under CONPS inventories.



Approximately half of SMC is forested and ponderosa pine (*Pinus ponderosa*) is the dominant tree. Aspens (*Populus tremuloides*), Douglas-firs (*Pseudotsuga menziesii*) and spruces (*Picea* spp.) can also be found. The streams are dominated by thin-leaf alder (*Alnus incana* ssp. *tenuifolia*), chokecherries (*Prunus virginiana* var. *melanocarpa*), willows (*Salix* spp.) and water birch (*Betula occidentalis*). Blue-joint reed grass (*Calamagrostis canadensis*) is the most common and abundant wetland grass along with reed canary grass (*Phalaris arundinacea*). In the meadows Kentucky bluegrass (*Poa pratensis*) and smooth brome (*Bromus inermis*) dominate.

Although none of the species found there are especially rare or endangered, there have been some uncommon finds. Sweet coltsfoot (*Petasites frigidus* var. *sagittatus*) and tall blue lettuce (*Lactuca biennis*) were found in the wetlands and each have fewer than 6 other recorded sites in Larimer County. The collection of Pumpelly's brome (*Bromus pumpellianus*) is one of only 3 records for the county. Both pinegrass (*Calamagrostis rubescens*) and licorice-flavored sweet cicely (*Osmorhiza occidentalis*) appear to be first records for Larimer County.

A few culturally significant plants have been found at SMC. These culturally modified trees are documented as having been used by indigenous peoples for glues, nourishment, medicine and, in some cases, geographic markers.

Perhaps the most mysterious find is *Lycium barbarum* also known as matrimony vine and Tibetan goji berry. These bushes are planted adjacent to a residence of a former ranch on the site. Some speculate that the early Buddhists planted them however SMC did not acquire that area until 2006 and the bushes were reportedly already well established there (R. Swaback, pers. comm.). Early settlers may have planted them, which may be the more likely scenario.

Photos of the plants surveyed can be found on the Intermountain Region Herbarium Network at <http://intermountainbiota.org/portal/checklists/checklist.php?cl=3632&emode=0>

Renee Galeano-Popp is the former Regional Botanist for the Southwestern Region of the US Forest Service. She is a longtime volunteer at the CSU Herbarium and is always seeking other botany related opportunities. Renee is chair of CoNPS' Northern Chapter's Noxious Weed Committee.

Photos in this article by Renee Galeano-Popp

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Conservation Corner: Stream Restoration after the 2013 Floods

by Mo Ewing

On September 16, 2015 the Denver Post carried an article entitled, "Big Thompson restoration to start soon" (Johnson 2015). It has been two years since the historic floods of 2013. Roads and infrastructure projects are almost complete and now work is beginning to "bring the river back". The Big Thompson River Restoration Coalition is beginning to raise \$69 to \$225 million to fund restoration projects on the Big and Little Thompson Rivers. The initial project will create places for the river to overflow its banks, widen the river in spots to handle bigger flows, create pools and eddies, add rocks and trees to portions of the river for fish habitat, restore native plants and native habitats along the river.

Major floods along the Front Range have occurred quite regularly in the past, the latest major ones being the Plum Creek Flood of 1965 and the Big Thompson Flood of 1976. With the forecast of more extreme weather events due to global climate change, the question is, how should we manage our watersheds in the future? Should we conduct massive, costly restoration projects? Or, should we leave the rivers alone to determine their natural course?

Even without 100 year flood events, rivers are dynamic systems, constantly changing due to different stream flows created by rain events and snow-melt. A good case could be made for leaving the rivers alone and letting natural events determine what plants grow there.

To understand the complexity of the problem, I found a really interesting article written by Jonathan Friedman (Friedman et al. 1996) which studied how the Plum Creek changed over a period of 35 years after its 1965 flood. Most of that creek was left alone after the flood to revegetate itself, and Friedman's findings shed some light on the issues that county officials face when deciding how (or whether to) revegetate the riparian areas of their rivers.

In February 2014, I visited some of the creeks to see what happened. I climbed up the Enchanted Mesa Trail in Boulder which follows a tiny ephemeral creek that isn't even big enough to have a name. Up until the flood, it would run through thick vegetation for a month or two in the spring and then it would dry up in the summer. But that small amount of water had created a thick band of vegetation along its banks. When I visited in February 2014, it looked like a bulldozer had run down the middle of the creek and scoured out all of the vegetation. So much water had run down hundreds of gullies like this one, and so much rubble, rocks, soil and plants were scoured out of the foothills, that when the mass of water hit the major creeks below (South Boulder, Goose, St. Vrain, 2-Mile Canyon, James and Gregory Creeks) it acted like a giant bulldozer. The waters pushed the rocks and rubble into the stream beds of the lower creeks, filling them, making the water overflow the banks, and then pushing the rubble up into the riparian areas on either side.



Enchanted Mesa Trail



South Boulder Creek Scouring

Even though quite a lot of work was done before I got there in February, there were plenty of examples of what had happened to the shape of the creeks and riparian vegetation along their sides. Many of the creeks I saw, like James Creek, had simply changed course. Their old stream beds were filled by rubble and the creek jumped into new lower areas. This occurred in some places, like Boulder Creek, because of the mining that had been done in the past. When the creek had been mined, the creek bed was moved to gain better access to the gravel, and pits were dug in the old watercourse, and the creek was never returned to its original location. The floods simply returned the creek to these old watercourses.

In other places huge new gravel bars were created along the stream beds and also into much higher ground into old floodplain areas (like neighborhoods) that hadn't been flooded in decades. And most stream beds had been filled so that they were as much

as 48" shallower than they had been before the floods. That was one of the reasons that Boulder County staff were so worried about new flooding during the spring-melts in 2014 and 2015. Would the shallower creeks over-flood their banks? Would the streams change their course again?

The field research that Friedman did on Plum Creek in 1991 illustrates the difficulty of the revegetation process in a dynamic system. Everything depends on future weather patterns, heavy rains, thunderstorms, snow-pack, snow-melt, and temperature changes.

Plum Creek is different than most of the gravel-based creeks in the Boulder Flood because it is a sand-bed stream. It runs north 14 km along the edge of the Front Range into the South Platte River. Friedman studied the river along 7km from Sedalia to Louvers. Normally the highest river-flows occur during snow-melt in the spring with occasional flash floods occurring during the summer (Friedman et al. 1996). On June 16, 1965, 14.17 inches of rain (81% of the total annual average) fell in four hours, and the valley floor was inundated for 2½ hours (Matthai 1969).

Before the flood, Plum Creek was a relatively sinuous, single-channel stream with steep wooded banks. The flood filled many of the bends in the former channel with sediment and the creek was changed into a straighter, wider, shallower but steeper braided channel. About 50% of the trees were removed and the overall decrease in vegetation resulted in destabilized banks and even with relatively minor high flows, caused further widening of the channels (Ostercamp and Costa, 1987).

The river, since the flood of 1965, has created five different plant communities along its floodplain. These communities occur on five relatively flat surfaces separated by increases in elevation (somewhat like a set of stairs). The five surfaces, starting from the creek bed and moving out into the higher levels of the floodplain, consist of:

1. The channel bed at the time the creek was being studied in 1991
2. Stable bars formed during a period of low creek-bed levels from 1987-1990
3. Stable bars formed by channel narrowing during relatively high creek-bed levels from 1973-1986
4. Terraces of coarse sand deposited by the 1965 flood
5. Terraces of fine sand formed before the 1965 flood

The plant community in the channel bed had low litter and vegetative cover because it was usually inundated in the spring. Only six species occurred in more than 10% of the plots: cottonwood species seedlings (which occurred in 63% of the plots), willow species seedlings (34%); two annual graminoids: *Cyperus aristatus* (Flatsedge) (30%) and *Eragrostis pectinacea* (Tufted Lovegrass) (23%); an annual herb: *Polygonum persicaria* (Lady's Thumb) (20%); and a perennial herb: *Veronica anagallis-aquatica* (Water Speedwell) (52%). Of the six species, only the cottonwood, willow and sedge species were native.

The plant community on stable bars formed from 1987-1990 were only 13 cm higher than the channel bed and consisted of
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Four Mile Creek Trailhead

channel sediment covered by a few centimeters of silt or clay. It had low litter cover and the highest species richness of all the groups. Fifty four species occurred in greater than 10% of the plots; 26 species were exotic. *Populus deltoides* ssp. *monilifera* (Cottonwoods) occurred in 40% of the plots, and cottonwood seedlings in 69%. *Salix lutea* (Strap-leaf Willow) occurred in 42% of the plots, *S. x rubens* and *S. alba* var. *vitellina* (an exotic) in 20%, *S. exigua* in 35% and *Salix* seedlings in 48%. The most common native species were *Juncus bufonius* (Toad Rush) (58%) and *J. dudleyi* (58%), *Lycopus americanus* (Water Horehound) (49%), *Agalinis tenuifolia* (Foxglove) (48%), *Eleocharis macrostachya* (Spikerush) (42%) and *Cyperus aristatus* (Flatsedge) (40%).

The plant community on stable bars formed from 1973-1986 averaged 31 cm higher than the 1987-1990 stable bars and had higher litter cover, lower vegetative cover, a higher proportion of perennials, and a lower number of species. Only 23 species occurred in more than 10% of the plots, 13 of which were native species. *Populus deltoides* occurred in 11% of the plots, but *Salix exigua* occurred in 73% of the plots. The most common native species were *Carex emoryi* and *C. lanuginosa* (Sedges) (64%), *Aster hesperius* (White Aster) (45%), *Juncus balticus* var. *montanus* (Mountain Rush) (42%), *Equisetum arvense* (Horsetail) (31%) and *Poa compressa* (Canada Bluegrass) (22%).

The plant community on terraces deposited by the 1965 flood had low litter and vegetative cover and a low number of species. They were formed when the flood cut off the bends in the channel and filled them with coarse sand. There were no cottonwoods or willows present. The most common species were mostly native taprooted or caespitose species, including *Sporobolus cryptandrus* (Sand Dropseed Grass) (79%), *Chrysopsis villosa* (Golden Aster) (54%), *Artemisia campestris* ssp. *caudata* (Sagewort) (43%), *Ambrosia psilostachya* (Ragweed) (39%), *Onosmodium molle* var. *occidentale* (Marbleseed) and *Gilia pinatifida* (both 14%).

The plant community on terraces formed before the 1965 flood consisted primarily of medium sand and finer sediments, with lots of organic matter near the surface. Their elevation was similar to 1965 terraces, but they had more trees, litter and vegetation and more exotic and rhizomatous species. 12 species occurred in more than 10% of the plots and eight of these were exotic. *Populus deltoides* occurred in 2% of the plots and *Salix exigua* occurred in 4%. The most common native plants were

Symphoricarpos occidentalis (Western Snowberry) (21%) and *Prunus virginiana* (Chokecherry) (14%).

Some of the variation in plant communities are due to channel narrowing plant succession. The edges of the stream bed, are scoured by spring floods, followed by the establishment of willow and cottonwood seedlings with a few fast-growing herbs. If this area is not scoured immediately again new species become established including tap rooted, caespitose and rhizomatous perennials. The shoots and exposed roots of these plants trap sediments more efficiently, raising the elevation of the surface and decreasing the amount of disturbance. Litter and shade increase and water decreases as plants compete more intensively for light and water. This favors rhizomatous perennials. This is the point in succession where the greatest species richness occurs.

However some of the differences in plant communities cannot be explained by creek-bed plant succession. Both *Populus* and *Salix* are the first plants to colonize areas scoured by spring or summer floods and indeed they show a high percentage of occurrences on the surfaces that developed from 1987-1990 when the creek bed levels were low. A high discharge of snow-melt in 1973 created the 1973-1986 stable bars but photographs taken in 1976 showed large areas of the bars were still unvegetated and establishment of woody vegetation did not start until 1979 when the creek bed levels were high. Because the bars were high in relation to the stream bed, the vegetation succession differed from the 1987-1990 surfaces because there was less moisture available during the initial colonization. On the highest of the 1973-1986 surfaces cottonwoods are common, but *Salix* is scarce, probably because willows are more sensitive to lack of moisture.

From their creation, the gravel terraces deposited by the 1965 flood were high above the stream bed and although they were scoured, no cottonwoods or willows were able to colonize the terraces and none of those species occur there now. Plant communities which grow in riparian areas will vary depending on their elevation from the stream bed and the resulting availability of moisture.

But elevation does not tell the whole story either. The pre-1965 and 1965 flood terraces are the same elevation (2.45 to 2.40 respectively), however, their plant communities are very different. It is clear that other environmental conditions must be influencing this difference. The mean litter cover in pre-1965 terraces is 69%, and 37% in 1965 terraces. Mean vegetative cover is 57% in pre-1965 and 33% in the 1965 terraces. Occurrence of sand and gravel is 74% in pre-1965, 93% in 1965. Mean percentage of native species is 22% in pre-1965 and 71% in 1965.

In a presentation made last spring at a CoNPS Boulder Chapter monthly meeting, Susan Sharrod and Laura Backus described the first vegetation to appear after the floods in the summer of 2014. They described the new vegetation as a mish-mash of native and exotic plants. Where the water table was high, native cottonwoods and willows grew in thick lawns on sandy banks but not on the cobble banks. Probably because the flood happened in September after plant seeds were released, the seeds

of green ash, Russian olive, tamarisk, Siberian elm and locust, were probably washed away, and there was no regeneration of these plants. Some "weird" plants showed up - *Nuttallia nuda* (Blazingstar), *Elatine triandra* (critically imperiled in Colorado), *Hibiscus trionum* (an exotic) and *Malus* (apple) species. The noxious weeds that one would have expected such as Scotch thistle, purple loosestrife and teasel hadn't shown up yet, but there were lots of thriving non-natives: alfalfa, mullen, kochia, reed canary grass, bindweed and smooth brome. Native species seemed to be doing better in the now damp side streams.

With such an uneven start it is understandable that revegetation plans are in full swing. But depending on river flows and weather events, the rivers will probably do what Plum Creek did, create completely different plant communities on different terraces along their banks, perhaps with a totally different suite of plants from the surrounding area. It will be interesting to see what happens over the next 35 years.

References

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- Matthai, H. F. 1969. Floods of June 1965 in South Platte River basin, Colorado. United States Geological Survey Water-Supply Paper 1850-B.

Mo Ewing wears many hats at CoNPS. He is the Treasurer, Chair of the Conservation Committee, and Webmaster. Mo has a master's in conservation biology and prior to retiring he was the Land Stewardship Director of Colorado Open Lands, a land trust in Lake-wood, that has conservation easements all over Colorado.

Photos in this article by Mo Ewing.

See Conservation Committee volunteer opportunities on page 25.

Randy Mandel will be teaching a summer field seminar (\$45 members, \$55 non-members), Identification Course for the Riparian Flora for Colorado's Front Range, including Riparian Ecology, Geomorphology, and other River Restoration Criteria, on July 2. The location is to be determined but it may be held at Golden Gate Canyon State Park.

He will also be teaching a free field seminar on the Western Slope with Travis Morris, Identification Course for the Wetland Flora of Colorado's Western Slope, on August 2. Location to be determined.

Sign up for conservation projects and/or Randy Mandel's field seminars on the CoNPS Calendar of Events (<https://conps.org>).

Garden Natives

by Jim Borland

Scarlet Globemallow

Sphaeralcea coccinea

Unknown to this writer is the reason that so many flowers are known as 'scarlet,' 'crimson' or 'cardinal' when to all but the blind the flower color is really orange. Such is the case with scarlet globemallow, also known as red falsemallow, scarlet mallow and red star mallow. Copper mallow, yet another common name, is, perhaps more descriptive and cowboy's delight more fanciful and imaginative.

Regardless of its name, this mallow may be the toughest of all mallows, growing in the wheel ruts of dry, shortgrass prairie roads with its strong, deep taproot (to 8 to 13 feet deep) and its running rhizomes. Aside from roadbeds and roadsides, scarlet globemallow is found naturally in disturbed sites, on dry hills, in grasslands, on mesas and on prairie hardlands from southern British Columbia to Manitoba south to Oregon, Utah, Texas, Iowa and Arizona. Occupied soils range from light sandy or rocky to dense clays with a pH of 5 to 8.



Sphaeralcea coccinea Photo © Charlie Turner



Sphaeralcea coccinea Photo © Charlie Turner

Emerging in April to May, this 4 to 8 inch tall perennial in Colorado spreads to form extensive colonies of green to gray pubescent, deltate to suborbicular divided leaves peppered with dense clusters of salmon to orange colored flowers.

Throughout its range, the amount of natural precipitation necessary to keep it in peak form varies, depending upon locale, but many consider it to be one of the most drought resistant perennials of the Great Plains.

The greatest roadblocks to propagation are first the unavailability of seed (500,000/lb.), especially viable seed, since it is often infested by weevils. Look for a tiny, tiny hole in the seed. The second roadblock is germination that can be overcome with scarification. But, no easy or convenient means is available to accomplish this latter task on a large scale, unless you consider drilling a very small hole in the seed coat as more than one source suggests. A few growers have succeeded with rhizome cuttings in spring, but large number increases by this means are improbable. Even very young cuttings may be used for rooting, but results vary with each grower or batch of cuttings.

In the container, seedlings or larger plants present no special problems if extra attention is paid to higher levels of soil aeration than is commonly done.

Cold hardy to zone 3b (-30 to -35oF) at least, scarlet globemallow is not a plant for confined areas. It has the ability to travel under 4 feet of concrete sidewalk, so give it plenty of room and allow it to ramble at will throughout the planting area.

Jim Borland is a well-known horticulturist and co-hosts the radio show, "Ask the Garden Pros with Jim and Keith", AM 1430 KEZW from 7-9 a.m. on Saturdays. Jim is a former President of CoNPS and has an in-depth knowledge of botany, being one of the plant identification superstars on the Colorado Native Plant Society Facebook Public Page (<https://www.facebook.com/groups/338614328016/>) where people post photos of plants and Jim and others (such as Jennifer Ackerfield) identify them.

BOOK & MEDIA REVIEWS

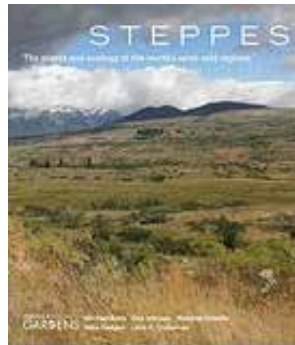
Steppes: The Plants and Ecology of the World's Semi-arid Regions

Review by Arle Kruckeberg

This review was originally printed on the North American Rock Garden Society (NARGS) website, <https://www.nargs.org/book-of-the-month/jan-2016>, and is reprinted with permission from Arle Kruckeberg and NARGS.

Steppes: The Plants and Ecology of the World's Semi-arid Regions by Michael Bone, Dan Johnson, Panayoti Kelaidis, Mike Kintgen, & Larry Vickerman, Timber Press, 2015. \$28 at the CoNPS online Bookstore (<https://conps.org/conps-store-native-plant-books/#!form/StorePlantBooks>)

This ambitious book surveys the steppe habitats of the world, with a primary emphasis on botany and horticulture, but also giving serious attention to the geography, geology, and climate of these regions, as well as their impact on humans (and vice versa, how they are being impacted by human activity).



The authors are eminently suited to the challenge, all being on the staff of the Denver Botanic Gardens: "The mission of Denver Botanic Gardens is to connect people with plants, especially plants from the Rocky Mountain region and similar regions around the world, providing delight and enlightenment to everyone;" the Gardens' core values are "transformation, relevance, diversity and sustainability." The authors make clear that understanding the world's steppes, and cultivating plants from them, are consistent with these values, for example in providing opportunities for landscaping in water-conscious regions.

The book is divided into six chapters; the first is an introduction and overview to steppes – what constitutes "steppe," and where they occur around the world. Then each steppe region is explored in detail: the Central Asian, Central and Intermountain North American, Patagonian, and South African steppes. Each author tackles one of these regions, and brings his own voice and knowledge to the topic. However, the whole is harmonized by the consistent erudition of all the authors. Also, each chapter, after the general discussion of floristics and geography, has two sections which provide a useful common theme throughout the book: "Plant-People Connection" and "Plant Primer."

The Plant-People Connections are fascinating reading in their own right, highlighting the peoples that have inhabited steppes through prehistory and history. The information on the cultures inhabiting the Central Asian Steppe was particularly new and interesting to me.

The Plant Primers are exceptionally thorough, cataloging the major plant families of each steppe, both in regards to the

roles of their comprising genera to steppe ecology, and in their applications (actual or wished for) in horticulture. I will turn to these often to get ideas for new plants for my garden. The primer on the South African steppe was especially rewarding to read, bringing a number of interesting genera to my attention.

Who is the audience of a book like this? It is rich in detail, and can be consulted by serious horticulturists, both professional and amateur, who are involved in landscaping with or cultivating steppe material. And it is beautifully illustrated, not only with plenty of lovely photographs but also with excellent and useful maps so any plant and garden enthusiast will take pleasure in browsing through the book. Because of its comprehensive scope, it will also be useful to botanists, geographers, and even policy-makers, and it is a must-read before visiting any of the steppe regions, for the tourist of horticultural bent, or anyone who likes to be well-informed about their destination.

My own steppe experience has been largely confined to exploring North America's intermountain steppe, so I appreciated the many parallels the authors drew between one steppe region and the others; commonalities of climate and geography, as well as flora. I also appreciated their clear discussion of the challenges of delineating steppe – its hazy borders with adjacent biomes, and even its definition.

The botanical treatment is of course mostly focused on vascular plants, but there is one mention of the cryptogamic crust, soil-surface communities composed of fungi, lichens, cyanobacteria, bryophytes, and algae. These are very important to the ecology of the steppe, in stabilizing soil, fixing nitrogen, retaining moisture, and providing niches for seed germination. As the author points out, these are fragile elements of the ecosystem, whose destruction can have effects on the whole.

The overall quality of the book is very high, both in the layout and production, and in the editing. However, I was surprised to find that English and metric units are both used, seemingly at random – in some cases in adjacent paragraphs. A useful conversion table at the back is provided, for centimeters to inches and meters to feet (and formulae for Celsius to Fahrenheit); for the international reader, then, it would have made sense to stick to the metric system. There were only a few other slips I noticed, such as describing the flowers of tree cholla as yellow, where in the picture above (and in the Wikipedia article on *Cylindropuntia imbricata*), they are decidedly in the rosy-red end of the spectrum.

Of course there was not enough space to provide photos of all the plants and habitats discussed; I kept my tablet close and Googled those plants I needed to see a photo of. Sufficient for now; maybe someday, with this book as inspiration and guide, I'll be able to see them in their steppe habitat!

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On Care For Our Common Home, An Encyclical Letter Review by Jack Carter

Pope Francis, *Laudato Si: On Care For Our Common Home*, An Encyclical Letter. 184 pp. Vatican Press. Our Sunday Visitor, Inc. Huntington, IN 46750. 2015. http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html

The recently published Encyclical Letter, written by Pope Francis and titled *Laudato Si': On Care for Our Common Home*, challenged me to listen carefully to the words of a religious leader. Pope Francis has the knowledge and values that I believe could lift a nation that identifies itself as Christian to a level that I never thought possible. This publication speaks not only to the one billion plus Catholics over planet earth, but to all people of all religions, to agnostics and even to atheists like myself.

As I read this little book which includes basic, and important modern-day information concerning the future of all life on earth, all of a sudden it came to me that I had read such important suggestions for living life, written 2,000 years ago, in the teachings of Paul, the apostle of Jesus Christ. While in college I completed several Bible courses, one of which was titled something like "The Travels and Letters of Paul the Apostle." The letters we studied were written to such people as the Romans, Corinthians and Galatians, and they all made important suggestions for living life in that time. It occurred to me that what Pope Francis has produced is a new modern-day book that could be added to the Holy Bible for Catholics; and it would also be appropriate for Protestants, Jews, Hindus, Muslims, and Humanists.

In this new epistle of six short chapters, we are led down a path of goodness and wisdom concerning the earth, the only home we will ever have. We are reminded that we are not only our brother's keeper, but we are responsible for protecting all living things and caring for the least of these. As we must care for the earth, we must care for the plants of the field that provide the oxygen we breathe; and that turn the carbon dioxide into carbohydrates that nurture all other living systems.

This important work gives special meaning to the study, care, and protection of the world's flora and fauna because "the Bible tells us so." The point is made in the second chapter that God directed us to protect the earth and all its creatures just as we should protect humankind. *Laudato Si*, is a powerful lesson in ecology, that makes clear that we should protect air, water, and soil and make their use available to the poor as well as to the rich. Consider the following:

"In some places there is a growing tendency, despite its scarcity, to privatize water, turning it into a commodity subject to the laws of the market. Yet access to safe, drinkable water is a basic and universal human right, since it is essential to human survival and, as such, is a condition for the survival of other human rights." (p 25)

Where does this idea stand when we consider the price of water in our cities today, where millions of gallons of water are sprayed into the air for our lawns, while on many parts of

the planet children die of thirst? Among natural resources, the protection of water must be placed near the top of our list, not only for people, but for all life and living systems, and must include the safeguarding of agriculture, forestry and aquatic systems.

What this religious leader understands, and the apostle Paul need not address, is modern science and technology. Pope Francis challenges us to bring science and religion into a meaningful relationship as he encourages us to critically examine every new technology. There are both good and bad technologies, and at this point Pope Francis is joining with Mahatma Gandhi, in pleading with us to carefully study each new technology and its impact on a world of limits. Does it actually improve the lives of millions of people, improving their economic conditions by protecting their jobs, health, diet and level of living? Or does it serve only to produce limitless wealth for a few? Certainly as we examine capitalism and the place of new technologies in the lives of all living things, and the condition of planet earth, we can see that we may be losing this never-ending battle to human greed.

Chapter three addressing biodiversity reads like a textbook in conservation ecology. The following four quotes provide an introduction to the chapter.

"The loss of forests and woodlands entails the loss of species which may constitute extremely important resources in the future, not only for food but also for curing disease and other resources."

"Each year sees the disappearance of thousands of plant and animal species which we will never know, which our children will never see, because they have been lost forever."

"The good functioning of ecosystems also requires fungi, algae, worms, insects, reptiles and an innumerable variety of microorganisms."

"A sober look at our world shows that the degree of human intervention, often in the service of business interests and consumerism, is actually making our earth less rich and beautiful, ever more limited and grey, even as technological advances and consumer goods continue to abound limitlessly."

These statements could not be made more forthright by ecologists and earth scientists.

I was reminded of the early 1950s when Sir Charles Snow (Lord Snow) described the Two Cultures and the scientific revolution. He spoke of literary intellectuals and scientists as poles apart. He stated that the "gulf of mutual incomprehension" must be crossed if humankind were to survive, and that it was still up to education to cause this to occur. We have yet to cross this great divide by improving education for literally billions of people. However, Pope Francis comes closer to describing how it might happen than anything I have read or studied with one exception, E. F. Schumacher's, *Small is Beautiful: Economics as if People Mattered*. This important publication (published in 1973) was on the reading list in my botany courses for 40 years, and it is obvious to me that Schumacher, Gandhi, and the current Pope have all encouraged us to hear another drummer.

Please read *Laudato Si: On Care for Our Common Home*, and think on these things.

Colorado Native Plant Society Membership Form

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4057 Cottonwood
Loveland, CO 80538

Check box to receive information on volunteer opportunities

News & Announcements (Cont. from page 26)

Native Plant Conservation Campaign News: April 14, 2016 from Emily Roberson. New review published of problems with staffing, funding and legal mechanisms for plant conservation.

NPCC has published a preliminary update to its pioneering 2002 Report – Barriers to Native Plant Conservation in the United States: Funding, Staffing, Law.

The new publication reviews several recent analyses of the state of plant conservation in the U.S. It also reviews some of the studies showing the role of plant diversity in the function and resilience of ecosystems.

Read the 2016 Article from the California Native Plant Society *Calypso Newsletter*. <http://plantsocieties.cnps.org/images/Barriers-to-Effective-ConservationCalypso.pdf>

The review of recent governmental, non-governmental and academic studies found that the dire situation in plant conservation detailed in the 2002 report has not been remedied. Instead, in many ways it has worsened.

This is particularly troubling because scientific studies increasingly find that conservation of plant diversity is crucial to maintaining ecosystem function and to the stable supply of essential ecosystem services such as water purification, pollination, and soil fertility.

In addition, evidence is mounting that conservation of plant diversity is key to supporting local and regional resilience against climate change.

Findings include:

- In 1988, 72% of the top 50 US universities offered advanced degree programs in botany. By 2009, more than one-half of these botany programs had been eliminated.
- Under the Federal Endangered Species Act, listed plants receive the least federal funding per species of any taxonomic group
- Despite the fact that more than 50% of federally listed species are plants, plants are much less likely than other species to be considered in federal Section 7 consultations regarding potential impacts to listed species from projects such as logging or construction.

Native Plant Conservation Campaign: <http://plantsocieties.cnps.org/>

Key to Calendar on Next Page

Eastern Slope events are in black.

Western Slope events are in red.

KEY	
B	Boulder Chapter
GR	Gore Range Chapter
MD	Metro-Denver Chapter
N	Northern Chapter
P	Plateau Chapter
SE	Southeast Chapter
SW	Southwest Chapter
SFS	Summer Field Seminar

CoNPS 2016 CALENDAR

APRIL 2016

April 23 (Sat.) Pattridge Open Space, Arvada, Field Trip (MD)
 April 23 (Sat.) Herbarium Tour & Plant Family ID Workshop, Fort Lewis College, Durango (SW)
 April 24 (Sun.) Colorado Conifer's Workshop, Grand Junction
 April 27 (Wed) Rocky Mountain Arsenal National Wildlife Refuge (MD)
 April 29 (Fri.) Hayden/Green Mountain Field Trip (MD)
 April 30 (Sat) Rare Plant Seed Scouting Training
 April 30 (Sat) Colorado Orchids Workshop (W)

MAY 2016

May 5 (Thurs.) Northern Chapter Program, HPEC, 7-9 p.m. (N)
 May 7 (Sat.) Lower McElmo Canyon Field Trip (SW)
 May 7-8 (Sat. -Sun.) Colorado Penstemons Workshop, Denver
 May 12 (Thurs.) Roxborough State Park Field Trip (MD)
 May 12 (Thu) Rabbit Mountain Field Trip (B)
 May 14 (Sat.) High Plains Environmental Center Plant Sale
 May 15 (Sun) Pawnee Grassland Canyons Field Trip (N)
 May 21 (Sat.) Withers Canyon – Comanche National Grassland Field Trip (SE)
 May 24 (Tues) Bobcat Ridge Field Trip (N)

JUNE 2016

June 1-3 (Wed.-Fri.) Browns Canyon Nat. Mon. Bioblitz (SE)
 June 4 (Sat.) Miramonte State Nat. Area Field Trip (SW)
 June 5 (Sun.) North Table Mountain Field Trip (MD)
 June 6 (Mon.) Reynolds Ranch Open Space Field Trip (MD)
 June 9 (Thurs) Backyard Phenology at DBG
 June 10 (Fri.) CoNPS 40th Anniversary Garden Celebration
 June 11 (Sat.) CoNPS Native Plant Gardens Tour
 June 11 (Sat.) Golden Gate Canyon State Park Field Trip (MD)
 June 11-12 (Sat./Sun.) Eastern Prairie Ranchlands Field Trip (N)
 June 12 (Sun.) Beneficial Arthropods, Colorado Springs (SFS)
 June 17 (Fri.) Bringing Colorado Native Plants... (SFS)
 June 17 (Fri.) Botany in a Day, Larimer County (SFS)
 June 18 (Sat.) Identification & Classification of Ute Indian Prayer Trees in Colorado, Colorado Springs (SFS)
 June 18 (Sat.) Elk Park - Pikes Peak Field Trip (SE)
 June 21 (Tues.) Hayden/Green Mountain Field Trip, 8 a.m. (MD)
 June 22 (Wed) Lory State Park Field Trip (N)
 June 22-28 NARGS Ann. Meeting, Denver-Steamboat Springs
 June 23 (Thurs.) Ecological Diversity in Sagebrush Steppe within the Gunnison Basin (SFS)
 June 24 (Fri.) Field Plant Ecology Skills (SFS)
 June 24-27 Amer. Penstemon Society Annual Meeting, MT
 June 25 (Sat.) CO Penstemons Workshop Field Session
 June 25 (Sat.) Cottonwood Pass-Sawatch Range Field Trip (SE)
 June 29 (Wed.) Staunton State Park Field Trip (MD)

JULY 2016

July 2 (Sat.) Identification Course for the Riparian Flora for Colorado's Front Range, including Riparian Ecology... (SFS)
 July 9 (Sat.) Subalpine flowers in Cunningham Gulch F.T.(SW)
 July 9 (Sat.) Thistles of the Gunnison Basin (SFS)
 July 9 (Sat.) The Crags- Birds and Botany in Pike Nat. Forest (SE)
 July 9 (Sat) Elkhorn Creek Weed Mitigation #1 (N)

July 9 (Sat) Rare Plant Seed Scouting Training
 July 9-10 (Sat. - Sun.) Photographing Wildflowers of Steamboat Springs with John Fielder (SFS)
 July 9-10 (Sat. -Sun.) Introduction to Dendrochronology(SFS)
 July 10 (Sun.) High Creek Fen Field Trip (MD)
 July 11-23 Crested Butte Wildflower Festival
 July 13-14 (Wed. - Thurs.) Colorado Bumblebees (SFS)
 July 15 (Fri.) Front Range Thistle Identification (SFS)
 July 16 (Sat) Peak 7 Area Field Trip (GR)
 July 16 (Sat.) Medicine on the Wild Side: What Insects Can Teach Us About Chemicals - Gothic near Crested Butte (SFS)
 July 17 (Sun.) The Natural History of Rocky Mountain Pollination - Gothic near Crested Butte (SFS)
 July 17 (Sun) Ten-Mile Range Field Trip (N)
 July 17 (Sun.) Buffalo Creek – Pike National Forest Field Trip (SE)
 July 21 (Thurs.) Hoosier Pass, West Side (MD, GR)
 July 22 (Fri.) The Ecology and Botany of Iron Fens in the San Juan Mountains (SFS)
 July 22-23 (Fri.-Sat.) Grasses of the Grand Mesa (SFS)
 July 23 (Sat.) Silver Dollar Lake Field Trip (MD)
 July 23 (Sat.) Missouri Gulch Field Trip (SE)
 July 24 (Sun.) Butterfly Natural History, Golden (SFS)
 July 30 (Sat.) Shelf Lake Field Trip (MD)
 July 30 (Sat.) CO Penstemons Workshop Field Session
 July 30 (Sat.) Introduction to the Grass Family, Golden (SFS)
 July 30 (Sat.) Designing with Native Plants for Pollinators (SFS)
 July 30 (Sat) CO Native American Ethnobotany (SFS)
 July 31 (Sun.) Wetland and Riparian Plants, Golden Gate (SFS)

AUGUST 2016

August 3 (Wed) Middle Bald Mountain Field Trip (N)
 Aug. 6 (Sat.) Lizard Head Field Trip (SW)
 Aug. 6 (Tues.) Identification Course for the Wetland Flora of Colorado's Western Slope, Grand Mesa (SFS - free)
 Aug. 6-7 Independence Pass and Turquoise Lake Field Trip (SE)
 Aug. 11 Shrine Ridge Field Trip (MD)
 Aug.13 (Sat.) Elkhorn Creek Weed Mitigation #2 (N)
 Aug. 14 (Sun.) Willow ID, Golden Gate Canyon SP (SFS)
 Aug. 20 (Sat.) Itinerant Field Plant Ecology Boulder (SFS)
 Aug. 21 (Sun.) ID of Common Lichens in W. San Juans (SW)
 Aug. 23-25 (Tu. -Th.) Browns Canyon Nat. Mon. Bioblitz (SE)
 Aug. 27 (Sat.) Green Mountain Grasses Field Trip (MD)
 Aug. 27 (Sat) Shambhala Mountain Center Field Trip (N)

SEPTEMBER 2016

Sept 11 (Sun) Elkhorn Creek Weed Mitigation #3 (N)
 September 16 - 19, Eriogonum Society Annual Meeting Desert Studies Center (Baker), CA
 Sept. 23-25 CoNPS Annual Conference - Boulder
 Sept. 23 Colorado Annual Rare Plant Symposium
 Sept. 24 Colorado Native Plant Society Annual Conference
 Sept. 25 CoNPS Annual Conference Field Trips

SAVE THE DATE: SEPT. 24, 2016
CoNPS 2016 Annual Conference
40th Anniversary Celebration
CU Boulder



Colorado Native Plant Society

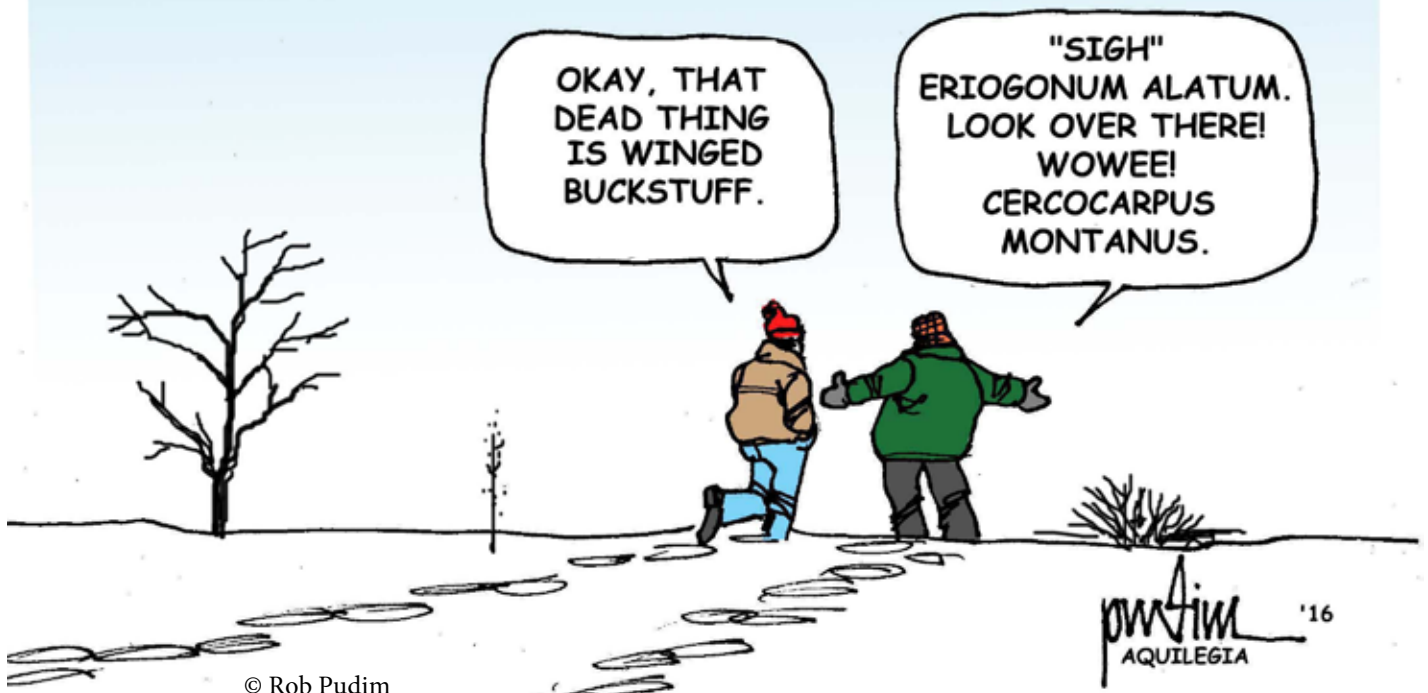
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Botanicum absurdum by Rob Pudim

A NATIVE PLANT SOCIETY
WINTER WALK...



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