

Aquilegia

Newsletter of the Colorado Native Plant Society

Velma Richards



IN THIS ISSUE

Western Slope Festival: June 3-4 in Gunnison

FIELD TRIPS

Native Plant Selections from Plant Select®

Velma Richards 1917-2017

2016 State of the Society Report

Conservation Corner: The Botany Bill

Cinquefoils at the Elkhorn Study Area

Revegetation Projects Introduce Two New Penstemon Species



Volume 41 No.2 Spring 2017

Aquilegia: Newsletter of the Colorado Native Plant Society

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

AQUILEGIA: Newsletter of the Colorado Native Plant Society

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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. At times, issues may be combined. 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 Summer 2017 issue is June 15 and for the Fall issue is Sept. 30. Announcements, news, articles, book reviews, poems, botanical illustrations, photographs, and other contributions should be sent to the editor.

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Inside this issue

Columns

News & Announcements	5
Workshops	10
Field Trips	11
Conservation Corner: The Botany Bill	24
Book Reviews	28
Membership Form	30
Calendar	31
<i>Botanicum absurdum</i>	Back Cover

Articles

Western Slope Festival	3
2016 CoNPS Annual Report	8
Velma Richards, 1917-2017	18
Award-Winning Native Plant Selections from Plant Select®	20
Cinquefoils at the Elkhorn Study Area	25
Revegetation Projects Introduce Two New Penstemon Species	26

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Front Cover Photo:

Penstemon linarioides var. *coloradoensis*
Photo by David Winger courtesy of Plant Select®. Inset photos: Velma Richards by Janet Wingate; Carol English and Denise Wilson at the March for Science 2017, photo courtesy Carol English.

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Public Comment Period for National Monuments Review Ends July 10th

An Executive Order has called for a review of 27 national monuments designated under the Antiquities Act. Canyons of the Ancients in Colorado is one of the national monuments under review.

Press Release from Dept. of Interior: Washington, May 5, 2017 – The Department of the Interior today announced the first ever formal public comment period for members of the public to officially weigh in on monument designations under the Antiquities Act of 1906, and the Department released a list of monuments under review under the President's Executive Order 13792, issued April 26, 2017. Comments may be submitted online at <http://www.regulations.gov> by entering "DOI-2017-0002" in the Search bar and clicking "Search," or by mail to Monument Review, MS-1530, U.S. Department of the Interior, 1849 C Street NW, Washington, DC 20240. <https://www.doi.gov/pressreleases/interior-department-releases-list-monuments-under-review-announces-first-ever-formal>

It is important to submit your comments and specifically name the monuments that you would like to be protected. Monuments in many Western states and some Eastern states are under review. A list can be found at the DOI website listed above. Unfortunately, the comment period for Bears Ear in Utah ended May 26 but you still have time to voice your opinion regarding the other national monuments under review. **See page 6 for a letter to Sec. of Interior Zinke from County Commissioners in Colorado.** They make a number of important points in their letter.

CoNPS Western Slope Festival!

**Western State Colorado University Campus in Gunnison
June 3-4, 2017**

Conserving Native Plant Community Biodiversity: Colorado's Western Slope



Photo by Barb Frase

Join CoNPS in Gunnison on the first weekend of June to enjoy the peak of wildflower season. Learn about Western Slope native plant conservation issues and see them in person during guided hikes. CoNPS is featuring a remarkable list of speakers.

Talks will be 9am-2pm on Saturday, June 3rd

Keynote: Rare Plants and the US Forest Service by Tyler Johnson, USFS Botanist

Sagebrush Response to Climate Change by Tom Grant, Western CO State University

Sudden Aspen Decline Impacts on Biodiversity by Jim Worrall, US Forest Service

Using Citizen Science to Protect Native Pollinators by Shay Hlavaty, RMBL

Rare Plants in the Gunnison Area by Peggy Lyon, CNHP

Western Slope Locales & Garden Plants by Panayoti Kelaidis, Denver Botanic Gardens

Media Lunas, One Rock Dams, and Zuni Bowls: Improving Wetland Habitat and Diversity One Rock at a Time by Renee Rondeau, Colorado Natural Heritage Program

What Can You Learn about the Climate by Counting Flowers? By David Inouye, RMBL

Hikes (listed on page 4) will begin at 2:30 pm and will focus on the plant communities in the Gunnison area.

Register at: <https://conps.org/mfm-event-calendar/#!event/2017/6/3/2017-western-slope-festival>
\$50 CoNPS Members; \$60 non-members, \$40 students.

Scholarship Application form on CoNPS website.

CoNPS Western Slope Festival Field Trips June 3-4, 2017

Field Trips – Saturday afternoon, 2:30 - 5:30 pm

(To register for field trips, after registering for the Festival, please return to the Events Calendar and choose the next 'event' for June 3-4 Field Trips)

Skiff Milkvetch Survey by Robin Bingham, PhD, Botany Professor at WSCU, with Dara Taylor, USFWS Botanist. Visit skiff milkvetch survey locations at the Hartman Rocks area.

Plant Diversity Monitoring by Alex McCarty, Western State Colorado University student and BLM intern. Visit Assessment, Inventory, and Monitoring (AIM) areas with researcher, Alex, who collects data on plant diversity, foliar cover, sage grouse habitats, gap intercept, and soils in the Gunnison Basin. Alex will also feature spring wildflowers that are in bloom at those locations.

Sagebrush Plant Community by Thomas Grant from Western State Colorado University. Hike around the sagebrush plant community and learn about the surprising diversity that is just steps outside of the Western State Colorado University Campus in Gunnison.

Hartman Rocks Spring Wildflower Diversity by Barb Frase, PhD, Western State Colorado University. Hartman Rocks is a 20 min drive from Gunnison on a paved road. We will walk to three of my research sites, each of which include aspen stands along the drainage, and diverse sage and aspen understory communities. One site has a small perennial wetland. Many forbs and shrubs will be in bloom. We'll examine diversity within and between communities and think about differences among communities in close proximity. Short easy walks mostly on trails. Bring water, sunscreen, a hat, closed-toe shoes. There may be ticks with such a wet spring, so long pants and long-sleeved shirt recommended.

Alpengardener by Beth Schumacher Garden center display and field tour.

Noxious Weed Tour by Jon Mugglestone, Gunnison County Weed Coordinator, walking noxious weed tour in Gunnison.

Roundup Basin Wildflowers by Gay Austin Common sagebrush and montane wildflowers. Short hikes.

(To register for field trips, after registering for the Festival, please return to the Events Calendar and choose the next 'event' for June 3-4 Field Trips)

Field Trips – Sunday morning, 9:00am - 12:00 noon

Sagebrush Plant Community (repeat) by Thomas Grant from Western State Colorado University. Hike around the sagebrush plant community and learn about the surprising diversity that is just steps outside of the Western State Colorado University Campus in Gunnison.

Almont Triangle Aspen Exclosures by Barb Frase, PhD, Western State Colorado University. The Almont Triangle is a protected big game winter range a 20 min drive north of Gunnison. We'll walk through rolling sage covered hills on a dirt road. It's an easy uphill grade and we'll stop often because there is so much to look at. We will pass "The Toughest Tree in the County". Our destination is a set of exclosures designed to prevent elk and mule deer from foraging overwinter, and to think about the subtle as well as obvious, differences inside and outside the fences. If time and energy allow, we can continue to another set of exclosures focused on forb and grass community diversity. Bring water, sunscreen, a hat, closed-toe shoes. There may be ticks with such a wet spring, so long pants and long-sleeved shirt recommended.

Riparian Restoration by Renee Rondeau, Botanist with the Colorado Natural Heritage Program, and Gay Austin, BLM Natural Resource Specialist. Join Renee and Gay in Wolf Creek or Chance Gulch to observe changes in riparian vegetation and plant diversity in response to manually-placed Zeedyk rock structures.

Bird Diversity by Pat McGee, Wildlife Biologist Professor, at Western State Colorado University.

Walking Tour of the Lower Loop Trail by Hedda Peterson, Crested Butte Land Trust. Join Hedda for a walking tour of the Lower Loop trail, just on the edge of town, to take in the early season blooms and learn about the area's conservation history.

Lodging and Camping Options are listed on the CoNPS calendar on the registration page.



Gunnison area field seminar Photo by Jan Turner



Barb Frase leading field seminar Photo by Jan Turner

NEWS & ANNOUNCEMENTS



Velma Richards 1917-2017

Velma A. Richards, age 99, passed away on April 12, 2017. She was born in Ord, Nebraska on November 6, 1917. Read about Velma's remarkable life on page 18.

2017 Marr and Steinkamp Research Grants Award Recipients

Marr Awards

Austin Lynn, Ph.D. Candidate at University of Missouri working with Dr. Candace Galen. "Investigating Evolutionary Relationships Among Native and Exotic *Taraxacum* in the Colorado Rocky Mountains" \$900

Mike Kintgen, Curator of Alpine Collections at Denver Botanic Gardens and a Master's student at Regis University working with Dr. Catherine Kleier, "Does Aridity Drive Species Richness in Colorado's Alpine Tundra?" \$900

Erin Bissell. Dr. Bissell has a Ph.D. and is a lecturer at Metro State and will be supervising 2 undergraduates for a project titled "Bird Diversity in Chatfield State Park Riparian Cottonwood Communities" \$500

Steinkamp Awards

Richie Hum, recent graduate with a Master's Degree from Appalachian State with advisor Michael Madritch, "Genetic Analysis of *Aliciella penstemonoides* Using Microsatellite Markers" \$1000

Thanks to the generous contributions of many members and supporters, a total of over \$3,000 is available, although individual awards don't typically exceed \$1,000.

Recipients of the awards must agree to summarize their studies for publication in *Aquilegia* and on the Society web site and are encouraged to present the results of their research at the CoNPS Annual Conference and/or a chapter meeting.

If you are interested in contributing to the research grant funds, please contact CoNPS treasurer Mo Ewing at bayardewing@gmail.com.

Wildflowers of the Breckenridge Area Slide Program, June 30, 5-6:30 p.m.

South Branch Library, 103 S. Harris St., Breckenridge, 970-453-3544. www.summitcountylibraries.org

Local wildflower expert and CoNPS member, Jane Hendrix, will introduce you to some of the exceptional wildflowers that grow in the area. Attendees will have the option of signing up for a free wildflower hike in July. Optional: Bring \$5 cash if you would like to purchase a wildflower guide.

Resolution Designates Interstate 76 as Colorado's First "Pollinator Highway"

Colorado became friendlier to pollinators by passing the "Colorado Pollinator Highway" Resolution HJR 1029. The designation will allow better vegetation management, education and outreach to support pollinator habitat along the roadway.

"Restoring and managing roadsides is vital if we hope to bring back pollinators..." said Jennifer Hopwood of the Xerces Society.

Using existing tools and programs, the resolution directs the Colorado Department of Transportation to designate Interstate 76 as the Pollinator Highway. This measure will also direct CDOT to coordinate with local governments, willing landowners and other groups to utilize Integrated Vegetative Management strategies to develop pollinator habitat where appropriate. These efforts have been found to save state transportation agencies money as the maintenance needs of pollinator habitat are very low.

"The designation will advance Colorado efforts to expand and improve habitat on the I-76 transportation corridor emphasizing coordination and outreach. We hope I-76 will become a model for others to follow in our quest to help pollinators and better manage the indigenous plants along our corridors. We admire the decision by our state government to see the need to promote integrated vegetation management by passing this resolution. It will be a privilege to work with CDOT Maintenance and Operations and the community to implement the intent of the resolution" said Michael Banowich of CDOT.

Colorado is home to over 950 native bee species, butterflies and other insect pollinators, all of which are vital to our state's economy, food security, and environmental health. Nationwide, honeybee pollination alone adds more than \$15 billion in value to our agricultural crops each year, and provides the backbone to ensuring our diets are plentiful and varied.

"Unfortunately, pollinator populations have been declining rapidly due to multiple stressors. Among these stressors is habitat loss and fragmentation and a lack of availability of forage. A diverse and thriving pollinator population supports agriculture and a diverse ecosystem and there are simple tools we can engage to expand pollinator habitat in Colorado," said Beth Conrey of People and Pollinators Action Network and past president of the Colorado State Beekeepers Association.

From People & Pollinators Action Network Website <http://peopleandpollinators.org>

For more information contact Joyce Kennedy
joyce@peopleandpollinators.org

County Commissioners Send Letter to DOI Urging Protection of National Monuments

Dear Secretary Zinke:

We, the undersigned county commissioners, write to formally state our opposition to the presidential administration's review of the protections afforded our national monuments. These monuments are our heritage, our future and our template for preservation. The review is both illegal and in opposition to the wishes of those we represent as commissioners – the arm of government closest to the people of Colorado and the American West.

Colorado is blessed with spectacular public lands that span the state. Among the most cherished are national monuments, including Colorado National Monument, Browns Canyon, Canyons of the Ancients, Chimney Rock, Florissant Fossil Beds, Dinosaur, Hovenweep and Yucca House. These treasures must be protected and preserved for future generations to enjoy. Public lands, and national monuments in particular, are major drivers behind our robust outdoor recreation economy.

Outdoor recreation generates \$887 billion in direct consumer spending each year across the nation and supports more than 7.5 million American jobs. Including indirect impact, the industry has a \$2.1 trillion overall economic impact, supports 14.1 million jobs and generates \$80 billion in national, state and local tax revenue each year. That revenue funds schools, health care, public safety and transportation infrastructure – priorities of the current administration.

In Colorado, leaders and citizens have done the hard work of long-range planning, community outreach and development of partnerships necessary to protect our unique lands through national monument designation. To suggest that this work – in which states and local communities invested years – can be reviewed thoroughly and changed in 45 days is an insult to those who live where these national treasures exist. The willingness to compromise the Antiquities Act, which has served the nation well since 1906, leads us to question if any public land is safe from the threat of destruction under the present administration. We believe that Congress, through the legislative process, is the only proper venue to consider changing boundaries or management of national monuments.

National monuments are one of the great American ideas, created in the spirit of conservation and cultural preservation. They are the property of the American people, and a strong majority of western citizens – our constituents – support their creation and preservation. To rescind or alter them will cultivate an environment of mistrust and threaten any positive working relationship between the federal government and local communities. We urge you to consider the consequences of these actions and the precedent this review sets for the future of our nation and generations to come.

Sincerely,
Eva Henry, Commissioner, Adams County
Steve O'Dorisio, Commissioner, Adams County
Nancy Jackson, Commissioner, Arapahoe County

Federal Judge Protects Wolf Creek Pass on Endangered Species Day

by Chris Talbot-Heindl

http://www.planetexperts.com/wolf_creek_pass/

The controversy of a sweeping land exchange at Wolf Creek pass has been an ongoing saga for decades. The Court ruled on May 19 that the Forest Service had the authority to protect the National Forest and to limit the Leavell-McCombs Joint Venture development – a large-scale residential and commercial “village”



to accommodate 8,000-10,000 people – but opted not to use it. The Court also recognized that political influence and pressure played a key role in the exchange since its inception.

More importantly to the conservation organizations, the Court recognized the environmental values of the exchanged land in its decision. Judge Matsch invalidated the Forest Service land exchange decision, which gave Texas billionaire, Red McCombs, land that is critical for the survival of the Canada lynx and that serves as a wildlife corridor linking two major Wilderness areas, without a proper environmental analysis.

For more details go to <http://rockymountainwild.org/press-release-federal-judge-sets-aside-forest-service-wolf-creek-land-exchange>

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Deb Gardner, Commissioner, Boulder County
Elise Jones, Commissioner, Boulder County
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Tim Mauck, Commissioner, Clear Creek County
Randy Wheelock, Commissioner, Clear Creek County
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Joan May, Commissioner, San Miguel County
Thomas Davidson, Commissioner, Summit County
Dan Gibbs, Commissioner, Summit County
Karn Stiegelmeier, Commissioner, Summit County

CC: Sen. Michel Bennet, Sen. Cory Gardner, Rep. Diana DeGette, Rep. Jared Polis, Rep. Scott Tipton, Rep. Ken Buck, Rep. Doug Lamborn, Rep. Mike Coffman

Earth Day 2017

The Wild Animal Sanctuary invited CoNPS to participate in the Sanctuary's terrific Earth Day celebration on April 22nd in Keenesburg. Kate Goes In Center and David Julie had great fun at the CoNPS booth talking with adults and many wonderful children about wildflowers and pollinators. Thank you to the Wild Animal Sanctuary!



Above: Two charming, knowledgeable second grade white tigers stopped by the CoNPS booth to discuss flowers, bees, butterflies, and other pollinators.

Below: David Julie and Kate Goes In Center volunteering at the CoNPS exhibit.



March for Science

CoNPS members and botanists, Carol English and Denise Wilson, were among the thousands of people participating in the March for Science on Earth Day, April 22nd, in downtown Denver.

Both Carol and Denise were wearing red coats. Carol is on the left and Denise is on the right holding the Botany Bill sign.



WANTED: CoNPS Members to serve as instructors for future CoNPS Workshops!

Are you well-versed with the plants of a particular botanical group (family or genus) ... or a particular ecosystem (Alpine Tundra, Spruce-Fir Forests, Aspen Forests, Ponderosa Pine Forest, Lodgepole Pine Forest, Pinyon-Juniper Forest, Shortgrass Prairie, Sagebrush, Riparian, or Wetland)?

If so then please consider sharing your knowledge with other CoNPS members as an instructor of a future CoNPS Workshop!

Basic information regarding CoNPS Workshops:

Can be scheduled at venues throughout the state

Can be scheduled for a Saturday, Sunday, or both Saturday and Sunday, October through April

Usually begin at 9 am and conclude by 3 pm

Instructor receives a stipend of \$200 per workshop session

Workshops can be team-taught (\$200 stipend divided equally among the instructors)

If you would like to instruct a workshop for CoNPS, please contact Ronda Koski, CoNPS Workshop Coordinator, at ronda.koski@colostate.edu or 970 217-5286.

If you know of other individuals outside of CoNPS who you would like to instruct a workshop of CoNPS please send name and contact information to Ronda Koski.

New Book by Don Hazlett

Hazlett, D.L. 2017. *Historia del Jardín Botánico de Lancetilla, Honduras: Noventa años de historia, cuentos y tributos. The History of Lancetilla Botanical Garden, Honduras: Ninety Years of History, Stories, and Tributes. Sida, Bot. Misc. 47.* Botanical Research Institute of Texas, Fort Worth, Texas, U.S.A. [available ca. mid-June, 2017]



Two of the original ingredients in Coca Cola: 1) *Cola nitida* seeds ("nuts") from Africa and 2) *Erythroxylum coca* from South America.

This bilingual book, with many color photographs, has three components:

1) Tributes to Honduran botanists and key personnel at the

Lancetilla Botanical Garden; 2) Stories about exotic Garden and native Honduran plants and animals; and 3) Timeline of United Fruit Company and Honduran events at the Lancetilla Garden (1926-present). The author was director of this garden from 1978-1980, the first years after it was transferred to the Honduran government.

Dr. Catherine Kleier's Great Course

Did you know that a video botany course is available?

Cath Kleier, PhD, Chair of the Biology Department at Regis University (and former Chair of the CoNPS Research Grants Committee) is the instructor of Plant Science: An Introduction to Botany, available through the Great Courses series. It consists of 24 lectures that are 31 minutes each. More information about each of the 24 lectures is available on The Great Courses website, <http://www.thegreatcourses.com/courses/plant-science-an-introduction-to-botany.html>

2016 CoNPS Annual Report

In 2016, CoNPS celebrated its 40th anniversary. In response to CoNPS' request, Gov. John Hickenlooper proclaimed June 10-16 Colorado Native Plants Appreciation Week. CoNPS is grateful to Cecily Mui, Jen Boussetot, and other members of CoNPS for making this happen and bringing visibility to the importance of Colorado's native plants and the need for their protection. The first day of Colorado Native Plant Appreciation Week, June 10, was selected because CoNPS was incorporated on June 10, 1976. CoNPS held a 40th anniversary celebration at the Audubon Society of Denver's Amphitheater at Chatfield State Park. This event was organized by Jen Boussetot and featured talks by Jack Carter and William Weber and music by Mikl and Eve Brawner.



Cecily Mui Photo by Audrey Boag



Bill Bowman
Photo by Loraine Yeatts

On September 24, 2016 another celebration of CoNPS 40th anniversary took place at the CoNPS Annual Conference and Colorado Rare Plant Symposium held at the Sustainability, Energy and Environment Complex (SEEC) at University of Colorado, Boulder. Hosted by the Director of the Mountain Research Station, Professor

Bill Bowman, the Annual Conference theme was Forty Years of Change, 1976-2016: Plants, People, Places. A number of CoNPS founders and early members attended the conference and some of them participated in a panel discussion about the early days of CoNPS. A review of the 2016 Annual Conference will be published in the Summer 2017 issue of *Aquilegia*.



CoNPS founders and early members discussed the beginnings of CoNPS at the 2016 CoNPS Annual Conference. From left, Dieter Wilken (standing), Sue Martin, Beth Painter, David Buckner, Panayoti Kelaidis, Karen Hollweg, J. Scott Peterson, CoNPS Co-President Charlie Turner (standing). Inset: First elected president of CoNPS, Bill Weber, spoke at the CoNPS 2016 Annual Conference. Photos by Audrey Boag.

A new committee, the Scholarship Committee, chaired by Cecily Mui, was formed to enable more students and others with financial need to attend the Annual Conference, workshops, and other events. CoNPS members participated in a number

of activities in addition to the 40th anniversary celebrations including chapter programs, chapter field trips, the CoNPS Annual Conference, CoNPS workshops, summer field seminars, online plant sales, yard tours in the Boulder area and the Denver area, and the publication of the first two booklets in a series of native plant gardening guides.

2016 was also a year of a reexamination of the operation of the Colorado Native Plant Society. CoNPS experienced growing pains as it began the transition to a larger, more professional non-profit organization. There are three staff members, some of the website and membership functions have been automated, and membership reached a high of around one thousand members, but CoNPS is still a volunteer-run organization with limited staff hours. After the many activities and challenges, the Board examined its practices, procedures, and goals at the end of the year. Charlie and Jan Turner finished their three-year stint as co-presidents and the Board examined ways to distribute the president's duties to more volunteers, forming an Operating Committee chaired by Mo Ewing. They also addressed house-keeping issues such as expanding insurance coverage, developing policies such as conflict of interest, employment practices, and other issues that needed to be examined because of the growth of CoNPS.

Chapter Activities

Erica Cooper continued as the president of the Boulder Chapter. The chapter offered programs, hikes, participated in seed collection projects, and providing opinions to govt. agencies.

The Gore Range Chapter offered several hikes. At the end of the year, Nanette Kuich resigned as chapter president and the Chapter was dissolved. Chapter members were transferred to the Plateau Chapter.

Samantha Clark resigned as Metro-Denver Chapter president because of her busy work schedule. Leo Bruederle planned to assume the presidency but circumstances changed and Lenore Mitchell became president for 2017. Jannette Wesley continued to schedule the large selection of chapter field trips. In 2017, CoNPS became a Society member of the Denver Botanic Gardens (DBG) and chapter meetings and a native plant sale for 2017 were scheduled at the DBG.

Ronda Koski, who is the CoNPS Workshop Coordinator, stepped down as Northern Chapter President and Renee Galeano-Popp volunteered for the position. Renee and her group arranged a number of programs and weed projects. Hugh Mackay is the field trip coordinator for the chapter and scheduled a great selection of field trips.

The Plateau Chapter participated in a bioblitz on May 20, monitoring the threatened De Beque Phacelia (*P. submutica*). A number of field trips were offered by the chapter. Stephen Stern continued to serve as Plateau Chapter President.

Southeast Chapter Co-President Doris Drisgill coordinated with Sierra Club to host a very successful (standing room only) John Fielder presentation in Colorado Springs. Doris Drisgill and

Richard Bunn also arranged a number of field trips and led some of the trips themselves. Richard resigned as chapter president because of time constraints and was followed by Jeff Jones and finally Rich Rhoades.

John Bregar assumed the role of president of the new Southwest Chapter in late 2015. Bob Powell is the representative to the Board, Peggy Lyon is the treasurer, and Priscilla Sherman is in charge of scheduling the field trips. It is a large, dynamic chapter with many field trips.

Fundraising

CoNPS participated as a charity in Colorado Gives. CoNPS also raised funds through the Annual Conference (including the booksale and silent auction), workshops, online CoNPS Bookstore, summer field seminars, online plant sales, garden tours, and Amazon Smile (smile.amazon.com).

Committee Activities

Annual Conference Committee – The 2016 Annual Conference was a success with over 200 people from around the state in attendance. Chaired by Jan Turner and Lenore Mitchell, the committee planned the Annual Conference at the University of Colorado in Boulder. Many CoNPS members volunteered at the event. In addition to Lenore and Jan, Committee members included Charlie Turner, Tom Schweich, Irene Shonle, Jen Boussetot, Steve Olson, Linda Smith, Pat Murphy, and Jannette Wesley.



Conservation Committee – Mo Ewing chaired this large committee. They have collaborated with other organizations in conservation projects. CoNPS joined with many other native plant societies and botanical gardens as an affiliate of the California-based Native Plant Conservation Campaign.

Education & Outreach – Sara Copp Franz chaired this active committee that represented CoNPS at a number of events. Sara stepped down because of her busy work schedule and committee member, David Julie, took over as chair. David and his partner, Kate Goes In Center, gave many presentations at schools, libraries, and nature centers and collaborated with Audubon of the Rockies to train people to present their Wildscaping Program.

Thanks very much to all the CoNPS volunteers who shared their love of native plants with the public in 2016 by leading wildflower hikes, pulling invasive weeds, offering educational programs, and staffing CoNPS booths! And to Jack Carter for offering scores of free copies of his *Trees and Shrubs of Colorado* to teachers and students throughout the state. Finally, much gratitude to Sara Copp Franz for her energetic, constructive leadership of the Education and Outreach Committee for two years! *David Julie, Chair, E & O Committee*

Field Studies – Steve Popovich served as chair of the committee and assisted Steve Olson with the bioblitzes at Browns Canyon National Monument.

Finance – Mo Ewing is the chair of the finance committee and serves as the CoNPS treasurer. Mo distributes annual financial reports to the Board. Linda Smith supplies Mo with the financial information.

Horticulture & Restoration – Jim Tolstrup, chair of the committee, worked with Jen Boussetot, CoNPS Membership and Marketing Coordinator, to run two online plant sales. Irene Shonle chaired the Native Plant Gardening Guides Committee that worked on the production of booklets for five regions of the state. By the end of the year, *Low-Water Native Plants for Colorado Gardens: Front Range & Foothills* and *Low-Water Native Plants for Colorado Gardens: Mountains 7,500' and Above* were in final form and posted on the website. The booklets for three additional regions were completed by March 2017 in time for the 2017 Landscaping with Colorado Native Plants Conference and are posted on the CoNPS website. In addition to Irene Shonle, Nick Daniel, Deryn Davidson, Susan Crick Smith, Jim Tolstrup, Jan Turner, and Amy Yarger served on the Native Plant Gardening Guides Committee.



Booklet cover photo by Jane Hendrix

Media Committee - Jan Loechell Turner chaired the Media Committee, which includes the newsletter, *Aquilegia: Newsletter of the Colorado Native Plant Society*, the CoNPS Enews, social media, and the website.

Aquilegia is edited by Jan Turner and is a collaborative project that involves many talented writers, the artwork of cartoonist Rob Pudim, and columns by a variety of writers including Jim Borland and members of the Conservation Committee. Photography by CoNPS members is featured on the cover and within the publication. Articles by a number of CoNPS authors and other native plant experts cover a wide range of topics. Each issue is proofread by Linda Smith, Nan Daniels, and Sophia Warsh. In 2016, there were 4 issues of *Aquilegia*, including a combined Spring-Summer issue. *Aquilegia* has been indexed in AGRIS and has been added to the Biodiversity Heritage Library.

The CoNPS Enews was edited by Jen Boussetot and was sent by email to members approximately every 10 days. The Enews contains current information about CoNPS events. The calendar of events in the Enews also contains events of our partner organizations. Jen also coordinated CoNPS social media and led MeetUp hikes as did Nichole Marcisz, Samantha Clark, Tom Schweich, and others. Carol English is editor of the main CoNPS Facebook group, that has over 2,000 members with support from Jen Boussetot, who created a CoNPS Facebook page for official business that has over 1,000 "likes". Sally White runs the CoNPS Twitter account. Sara Copp set up a LinkedIn page for CoNPS and Jen created other accounts including Instagram.

The attractive and functional CoNPS website, set up and designed by Mo Ewing, CoNPS Webmaster, continues to serve as the sign-up point for most CoNPS activities and a source of current information for CoNPS members. Many beautiful photos

by Mo and other CoNPS members are featured on the website.

Membership – Charlie Turner, chair of the committee, developed expertise and trouble-shooting skills with the new membership plug-in for the website. The plug-in seemed to run fairly smoothly and allowed for automated sign-ups for new memberships, renewals, and CoNPS events. Because of the new software, CoNPS now has an accurate running total of the number of members and renewal times.

Research Grants – Catherine Kleier chaired the Research Grants Committee in 2016. The 2016 Marr Grant recipients were Jennifer Ackerfield (\$1,000), Alyssa Albertson (\$1,000), and Margaret Mitter McCormick (\$750). The Steinkamp Grant recipient was Zachery Cabin (\$1,000). Stephen Stern will be chair of the committee in 2017.

Sales – Administrative Coordinator, Linda Smith, administers sales, including the online bookstore. During the fiscal year 2016, the bookstore sold \$16,652 worth of books, etc., of which almost \$6,000 was sold at the Annual Conference. The rest was sold through mail order, workshop sales and Boulder chapter meetings. Patrick Murphy is in charge of the book sales at the workshops, Boulder chapter meetings, and the Annual Conference. Beth Anne Bane did a great job organizing the Silent Auction at the Annual Conference, which was very impressive.

Scholarships – Cecily Mui is chair of the new scholarships committee, that awarded three scholarships for the Annual Conference.

Workshops – Ronda Koski scheduled at least 14 workshops on a variety of topics during 2016 including a two-day workshop on penstemons taught by Carol English that included two optional field trips.

Summer Field Seminars – Jan Turner scheduled summer field seminars as an experiment to find out if they would be popular and would be self-funding with registration fees covering the costs of the instructors (experts in their fields were recruited), permits, and classrooms. Eleven seminars were scheduled for the Western Slope and fifteen were scheduled for the Eastern Slope. One seminar on the Western Slope was canceled because of difficulty getting permits and one for insufficient enrollment. Three seminars on the Eastern Slope were canceled because of insufficient enrollment and one was canceled because the instructor had to evacuate her house because of a wildfire. A survey of participants indicated that participants greatly enjoyed the seminars. The greatest challenges with the field seminars were getting a high enough enrollment to cover the expenses, obtaining commercial permits from the sites in order to hold the seminars, and the amount of time it took to make the arrangements for the seminars (find a location, find and schedule instructors, create the seminar catalog, etc.).

Staff

Linda Smith's title, Administrative Assistant, was changed to Administrative Coordinator, to more accurately reflect her job duties. Linda is the face of CoNPS, being the contact person for members and the person who answers inquiries. She is also in charge of bookkeeping and sales, including the online bookstore, Annual Conference, and other events. She works at the

Annual Conference, is heavily involved with editing and updating the website, and serves as a major proofreader of *Aquilegia*. As a skilled writer, artist, and photographer, she used her skills to help with various projects including a handout on native plants and pollinators and other CoNPS products. In 2017, she took over as editor of the CoNPS ENews and as the editor of the CoNPS Calendar and Chapter Activities columns of *Aquilegia*. During 2016, Linda worked approximately 40 hours per month and her job is funded by a portion of the membership fees. Her hours have been expanded in 2016 to cover her additional duties.

Jen Boussetot, Membership and Marketing Coordinator, was involved in many aspects of CoNPS activities. She served as editor of the CoNPS Enews (electronic newsletter) that was emailed to members approximately every 10 days. Jen worked with Cecily Mui and a number of other CoNPS members to write the verbiage for the proclamation for Colorado Native Plant Appreciation Week. Cecily Mui submitted the proclamation that was approved and signed by Colorado Governor John Hickenlooper. Jen coordinated the CoNPS 40th Anniversary celebration that was held at the Audubon Society of Denver's amphitheater at Chatfield. She worked with Jim Tolstrup on the online native plant sale, ran two native plant yard tours, was on the planning committee of the Landscaping with Colorado Native Plants Conference, helped with the CoNPS Annual Conference, and represented CoNPS at numerous events. She also coordinated social media. At the end of the year, her job was changed by the CoNPS Operating Committee to Events & Marketing Coordinator and the position will pay for itself from profits from events.

Ronda Koski, Workshop Coordinator scheduled over 14 workshops for 2016 on a variety of topics of interest to CoNPS members. Ronda attends all of the workshops, bringing drinks and snacks and making sure that the instructor and students have everything they need for a successful workshop. Ronda's position is funded by 50% of workshop net profits.

Awards

Jill Handwerk received a Special Merit Award and a painting by Marjorie Joy for her many years of service to CoNPS and the native plant community. Tass Kelso also received a posthumous Special Merit Award for her numerous contributions to the study of Colorado native plants. Her award was presented to Tass's husband, George Maentz. Some of CoNPS' founders and early members received Certificates of Appreciation recognizing their contributions to CoNPS: Dieter Wilkens, William Weber, J. Scott Peterson, Karen Hollweg, Sue Martin, Beth Painter, and Panayoti Kelaides. There were many other members who contributed to the founding and development of CoNPS and they will be featured in future issues of *Aquilegia*.



Jill Handwerk and painting.
Photo by Pam Smith.

Report by Jan and Charlie Turner, Co-Presidents of CoNPS, 2016

Chapter Field Trips

To register for field trips go to the CoNPS Event Calendar at <https://consp.org/mfm-event-calendar/#!calendar>. Chapter meetings and other events are also listed on the calendar.

Boulder Chapter

Two Creeks Open Space, Lafayette, CO
June 7, 2017; 5:30 pm - 8:00 pm
Leaders: John Vickery and Lynn Riedel

The City of Lafayette is co-sponsoring this event and the event is open to the general public. Come join us on a visit to a special place—the confluence of Rock Creek and Coal Creek. As on most such field trips, we will be looking for what's in bloom. Beyond that, we'll try to ID other plants that catch participants' interest and cover related topics of plant and animal ecology. This site offers three general plant community types: riparian, native prairie (small remnant area), and the distinctive subset of prairie plants associated with prairie dog colonies in our area.

Entry to the area is via an official trail, but we will wander off trail to identify plant communities. Note that off-trail hiking is normally prohibited at this site.

Come early or come late and then join us at your convenience. Start at the cul-du-sac described below and then head east. It shouldn't take long before you sight the group.

All experience levels are welcome. About a week in advance, participants will receive via email a list of the species in bloom. In cooperation with City of Lafayette, we are creating a plant species inventory list for this location. A preliminary version of this list will also be provided in advance via email.

Meet: City of Lafayette's Two Creeks Open Space (south end)—located at the intersection of North 120th St. with Rock Creek and Coal Creek (both creeks have a public trail route) in the extreme southeast portion of the City of Lafayette. From the south, access is from the intersection of Hwy 287 and Dillon Road (S of the Northwest Parkway). From the north, access is from Baseline Road (at N 119th St.) or the east end of South Boulder Road. Turn east on Commerce Ct. (between the two creek crossings on 120th) Just before reaching Rock Creek, turn north on Majestic Dr. In about a quarter mile this dead ends at where the Coal Creek Trail diverges from the creek and becomes an access trail to the Two Creeks Open Space Trail. Park here and start botanizing without delay!

John Vickery and Lynn Riedel are plant ecologists and members of CoNPS. Lynn serves on the Lafayette Open Space Advisory Committee.

Anne U. White Sneak Peek Hike
July 8, 2017, 9 am - noon

Join Boulder County Plant Ecologist/Volunteer Coordinator, Carrie Cimo, for a sneak peek at the beloved Anne U White Trail

on July 8th, 2017!

This trail was significantly impacted by the flood of 2013 and following repair efforts from the Boulder County trail crew, is very close to re-opening. There has been coordination with multiple large scale recovery efforts in the area, including the Flood Buyout Program, Fourmile Canyon Creek Coalition plans, and road repair plans. Come on out to see the trail repairs, current plant life along the trail corridor, and to learn about the other projects happening in the area!

Meet at the Lee Hill Trailhead off Lee Hill Road to carpool to the Anne U. White Trailhead. Please RSVP as parking is limited and carpooling will be required.

Click here to learn more about this unique open space: <http://www.bouldercounty.org/os/parks/pages/anneuwhite.aspx>

Rocky Mountain Alpine Plants—Ute Trail
August 5, 2017; 8:15 am - early afternoon
Leader: Megan Bowes

Join Megan Bowes on a botany and ecology hike along the scenic Ute Trail off Trail Ridge Road in Rocky Mountain National Park. If you like botanizing in the alpine and want to learn about the different alpine plant communities, plant strategies for living in the alpine, and the threats to biodiversity in this ecosystem, please join us for this mellow morning hike. The Ute Trail is a moderately easy 4.2 miles.

Time: 8:15 to early afternoon (time will depend partly on timing of afternoon thunderstorms)

Meet: Outside the Alpine Visitor Center, be prepared to pay/share the park entrance fee

More trail info: <http://www.rockymountainhikingtrails.com/ute-trail.htm>

Megan Bowes is a CoNPS member and Plant Ecologist with the City of Boulder's Open Space and Mountain Parks Department.

Boulder Open Space Mountain Parks, Boulder Creek Restoration and Reconstruction
Thursday, September 14, 2017; 3:00pm - 5:30pm
Leader: Marianne Giolitto

OSMP Plant Ecologist Marianne Giolitto [and Colorado Department of Transportation biologists] will take us on a trip to an ongoing wetland and riparian habitat restoration at the confluence of Boulder and South Boulder Creeks. Part of the site was targeted to mitigate wetland loss caused by the recent US36 construction project while others are being restored to generally improve degraded habitat. We will learn about why this type of management is being completed and the importance healthy riparian areas for our water ways.

Meet: 57th St on-street parking next to KOA Lake (immediately south of Valmont Rd); please carpool to the site.

Marianne Giolitto is the Wetland and Riparian Ecologist with the City of Boulder's Open Space and Mountain Parks Department.

Metro-Denver Chapter

June 10th, Saturday, 8:30 am – 12:30 pm

North Table Mountain

Tom Schweich, Leader

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. We won't do any hard-core keying, but some familiarity with local plants will be helpful. There will be a plant list with scientific and common names. A rattlesnake sighting is always possible on North Table Mountain. Western Poison Ivy is found 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 with loose rock and a rock scramble requiring 2 to 3 foot steps up. Meet at 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 on to 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.

June 12th, Monday, 8:30 am – 12:30 pm

North Table Mountain

Tom Schweich, Leader

See above description.

June 20th, Tuesday, 8 am to 12:30 pm

Hayden / Green Mountain

Judy King, Leader

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.

July 8, Saturday, 9 am – 1 pm

Ransom Edwards Jefferson Co. Open Space

Tom Schweich

Ransom/Edwards Homestead Open Space is unit of Coal Creek Canyon Park in northernmost Jefferson County, just west of Rocky Flats. Vegetation types include mixed prairie and montane forest. We will consolidate cars at the meeting point and make several stops with short forays into the grasslands and ponderosa pine woodland. 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 at Ransom/Edwards. Western Poison Ivy has been found here and we may find plants with stinging hairs.

Distances will generally be short, but we may be hiking off-trail and up and down moderate slopes. There are no facilities of

any kind at this park. Be sure to bring supplies, such as water, snacks, sunscreen, etc., to be self-reliant for the morning. Meeting point: Dirt parking area on Plainview Road just north of Colorado Highway 72, "Coal Creek Canyon Road."

From Boulder, take Colorado Highway 93 south 11.2 miles south, turn right (west) on Colorado Highway 72 "Coal Creek Canyon Road," go west 1.8 miles, turn right on Plainview Road, and look for our group in the dirt parking area on the left.

July 9th, Sunday, 8 am – 5 pm

Mt. Silverheels

Steve Yarborough, Leader

July 12th, Wednesday, 9 am – noon

Staunton State Park

Lenore Mitchell, Leader

French Creek and French Pass

Friday, July 14, 2017; 7:00am - dusk

Leader: Kelly Ambler

The trail passes through several different habitats (upper montane, subalpine, riparian, meadows, alpine), so a wide variety of wildflowers should be present. We do not need to go all the way to the pass to see plenty, but can do so if time and interest permits. All botany experience levels welcome.

French Pass Trailhead is north of Jefferson, across the Continental Divide from Breckenridge. The trail starts at ~10,500 ft elevation. Most of the trail has only moderate elevation gain as it follows French Creek, although the pass is above 12,000 ft. Distance to the pass is 3.5-4 miles, so 6-8 miles total for the hike. Possible hazards that may be encountered: Mosquitoes, water crossing, uneven terrain, altitude, possible steep grade. Physical difficulty is rated at 3.5, moderate (1 being the easiest).

We will meet at 7 am on Colorado Highway 8 just north of US Highway 285 (next to The Fort Restaurant parking area). We will carpool to the trailhead. Final track is a good dirt road. Please contact Kelly Ambler for questions (303-968-0978) or akelly-4now@yahoo.com.

July 18th, Tuesday, 8 am – 5 pm

Treasures of the Tenmile Range

Jane Hendrix, Leader

The hike begins at Mountain View Experimental Gardens (Hendrix residence) at 10,000 feet and trails through at least 9 ecosystems on a circular route: open meadow, aspen grove, lodgepole pine forest, sunny wetland, shaded riparian, dry hillside, spruce-fir forest, clear-cut regeneration and sunny, disturbed areas. Our focus will be the species of the Upper Montane and Subalpine Zones. English common names plus respective botanical Latin names will be used. All levels, from beginner to expert, will enjoy this outing. Moderate hike of 4 to 6 miles, 600 feet plus 200 feet elevation loss. Mosquitoes around the wetland may be a nuisance. Bring insect repellent. Bring extra clothing and rain gear in case of sudden weather change at high altitude. Bring lunch and water. Wear sturdy hiking boots. Expect to find over 100 species. Optional guide book specific to this area is available for \$5.

Meet at Mountain View Experimental Gardens, 133 Lone Hand Way, Breckenridge, CO. From the north, exit I-70 at Exit 203. Go south on CO Hwy. 9 about 8 miles to Coyne Valley Road. Turn

right. Drive to stop sign. Turn left. Drive 1/4 mile to Barton Road (CR3). Turn right.

From the south, go to City Market at north end of Breckenridge. Get on Airport Road on north side of grocery store parking lot. Go north on Airport Road to Barton Road (CR3). Turn left. Drive 1/2 mile to Blue Ridge Road. (Slow down or you'll miss this road.) Bear left. Drive up Blue Ridge Road to CR906. Turn right. Drive to last road (Lone Hand Way). Turn right. Drive around curve to "round" house.

Safety Rules: The group must function as a unit. We will travel at the pace that is comfortable for the slowest person. No splitting of the group will be allowed. If one person wants to go back, the whole group must return. This is primarily for safety because the trails in this area do not appear on any map and have many unmarked intersections that can cause confusion for a person unfamiliar with this area.

Hoosier Ridge – West
July 21, 8:30 am – 5 pm
Jane Hendrix, Leader

The hike begins at the parking area in a subalpine forest of spruce and fir. A short descent brings us to a quiet, old road on the south side of the Continental Divide with spectacular views of rugged mountains and many subalpine and alpine species to enjoy and photograph.

Lunch will be on top of the Continental Divide on North Star Mountain, 12,300'. This will be the highest point of the hike. From there, we will descend 1/2-mile along a steep, rocky jeep trail to 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 leader is "bilingual" - English common names plus respective botanical Latin names will be used. Optional guide book specific to this area is available for \$3. All levels, from beginner to expert, will enjoy this outing. The hike is 4 mile long circular loop with a 900' plus elevation gain. Mosquitoes around wet areas may be a nuisance. Bring insect repellent. Bring extra, warm clothing, a windbreaker, a hat, warm gloves and rain gear in case of a sudden weather change at very high altitude. Wear sturdy hiking boots. Some rock scrambling is required to ascend to the lunch location. Also, loose gravel and rocks on the steep jeep trail after lunch can be slippery. Note: Safety Rules: The group must function as a unit. We will travel at the pace that is comfortable for the slowest person.

Meet at the Hoosier Pass Parking Area (elev. 11,539') at 8:30 am. Take I-70 East to Exit 203 (Breckenridge/Frisco). Go south on Colo. Hwy. 9, through Breckenridge, to Hoosier Pass. Alternatively, take U.S. 285 to Colo. Hwy. 9 at Fairplay. Go north on Hwy. 9 to Hoosier Pass. Park in the large parking area on the west (right) side of the road.

Note: There is no restroom facility at Hoosier Pass. There is a public restroom at City Market at the north end of Breckenridge (from Colo. Hwy. 9, turn right onto North Park Avenue at the roundabout).

Lower McCullough Gulch
July 25th, Tuesday, 8:30 am to 5 pm
Jane Hendrix, Leader

The adventure begins a few miles south of Breckenridge at an

elevation of 10,300'. The route is an old mining road that trails through a small meadow replete with flowering species. It then enters a spruce-fir forest, revealing the shade-lovers in the understory. Continuing up a gentle grade, we will stop for lunch in a vast meadow of sunflowers, delphiniums and mariposa lilies. The highest elevation on the hike is 11,050' for an elevation gain of 600 to 750'. We will most likely find at least 100 species. The leader is "bilingual" - English common names plus respective botanical Latin names will be used. All levels, from beginner to expert, will enjoy this outing of 3-4 miles. Optional guide book specific to this area is available for \$4. Mosquitoes around wet areas may be a nuisance. Bring insect repellent. Bring warm clothing, a windbreaker, a hat, warm gloves and rain gear in case of a sudden weather change at high altitude.

Friday, August 4, 2017
Pass Lakes

September 15th, Wednesday, 9 am to 11 am
Rocky Mountain Arsenal
Dennis Mead, Leader

Explore prairie plants, native plant garden, native prairie grasses and asters, riparian habitat, and short walks on good trails. 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 opportunities are possible. 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.

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.

Northern Chapter

Saturday, June 3, 2017; 7:00am – 3:30pm
Soapstone Prairie Natural Area
Stephen Hauptli, Leader

This is a beautiful, minimally disturbed prairie near the border of CO and WY. Soapstone is extraordinary with over 28 square miles of wide open vistas, nearly pristine grasslands, miles of trails and world-renowned cultural resources. It is truly a place to treasure! Visit Soapstone Prairie to meet the past, enjoy the present and preserve the future. We will hike about 4-5 miles, relatively flat. Emphasis on plant ID, but would like to make some ground to see parts of the area. Rattlesnakes, lightning, heat, and rain are all possible. Bring water, a lunch/snacks, sunscreen, a hat, and rain gear just in case. We will carpool from King Soopers 1842 N College Ave, Fort Collins, CO 80524 at 7:00 am. Meet at the northwest corner of the parking lot (nearest to the bank and the Starbucks).

Sunday, June 11, 2017, 7:30 am – 4:00 pm

Wetlands of the Pawnee Grasslands

Trevor Roberts, Leader

This is one of our most popular hikes to a riparian area in the Pawnee Grasslands that you probably would not find on your own. The Pawnee National Grasslands hold a surprising diversity of plant life. Groundwater dependent eco-systems showcase the contrast between the short-grass prairie and wetland habitats. Sites along Willow Creek offer an excellent opportunity to observe a unique assembly of species. We can expect to see some unique grasses, sedges, rushes, and many forbs in and around the water. If the time is right, there can be an amazing number of wildflowers in bloom on the prairie. We will walk a mile or less in a riparian area far from any paved roads. Possible high temperature. Emphasis will be on ecology and a little plant ID if we find unexpected flora. This is also a great place for birds and other wildlife. We will carpool at 7:30 AM from the Fort Collins Transfer Station at the northwest corner off I-25 at exit 265, which is Harmony Road/CO 68. We will meet at the north side of the parking lot.

Thursday, June 15, 2017; 8:00am – 2:00 pm

Dunraven Trail: Wildflowers Through the Camera Lens

Laurie Paulik, Leader

We will be traveling on the North Fork Trail along the north fork of the Big Thompson River. The beginning of this trail was scoured by the 2013 flood and the trail has just been re-opened. Its 5 bridges were destroyed and the trail re-routed to use fewer replacement bridges. The part of the trail along the river once crisscrossed a lush riparian area. It will be interesting to see how this part of the landscape has recovered. Elevation is 7800'. This walk can be as short or as long as we wish. The first ¼ mile descends steeply to the river. After that, there is little elevation gain for the first mile as we stay along the river. Should we go further, the trail ascends gradually and is in good condition. This is not a strenuous hike, but the beginning (and thus, the end) is fairly steep. Physical difficulty probably would rate as a "2," with the initial and ending ascent/descent more difficult. We will be photographing montane and some stream-side wildflowers. On this trip we will be helping each other and learning from each other. Most of us have some experience photographing wildflowers, but on this trip we could try a few more advanced techniques or tools such as reflectors, diffusers, off-camera flash and focus stacking. You need to know how to use your camera (you may want to bring your manual), especially how to change flash settings if you want to try using a hand-held flash. The host uses Nikon equipment. Please bring a tripod and any other applicable equipment e.g., remotes, flashes, something to kneel on etc. There may be mosquitoes so insect repellent is advised. Weather could be chilly, especially in the early morning, as we will be in a canyon. Some people may want sun protection, especially sunscreen. We will be crossing the river on bridges. Bring rain gear, lunch, water, and snacks.

We will start our walk at the Dunraven Trailhead at 9:00 AM. For carpooling purposes, we will meet at the SW corner of the Loveland K-Mart parking lot at 8:00. K-Mart is at the NW corner of Wilson and Hwy 34 in Loveland. We will travel up the Big Thompson Canyon (Hwy 34) about 17 mi. to Drake, CO. At Drake, we will turn right on to County Rd. 43 for 6.1 mi. to Dunraven Glade Rd. in Glen Haven. Dunraven Glade Rd.

is a well-maintained gravel road. The road dead-ends at the trailhead parking lot after 2.2 mi. *Because of the equipment involved, wet weather may cause cancellation (or change of date for this trip).

**Sunday, June 25, 2017; 7:00am – 2:00 pm from Ted's Place
Lower Dadd Gulch Wildflower Hike**

Debra Roberts, Leader

This is a leisurely wildflower hike, mostly viewing and photography opportunities. The hike itself is 7 miles and 1,400 feet of elevation gain, starting at 7100 feet altitude. It is an out and back hike with a lot of easy stream crossings. Dadd Gulch Trailhead is about an hour west of Ted's Place on Rt. 14(Poudre Canyon Highway). (For more details: <http://www.pwv.org/trails/lower-poudre-canyon/15-lower-dadd-gulch-trail>).

This is a moderate trail with a steady incline. There are a lot of stream crossings and trekking poles are recommended. Casual hike with a lot of opportunities to see Colorado native wildflowers. (hopefully!) Bring water, sunscreen, lunch/snacks, hat and rain gear. Meet at 7:00 AM at Ted's Place. We will carpool from the Shell station (known as "Ted's Place") at the mouth of the Poudre Canyon at the intersection of Rt. 287 and The Poudre Canyon Highway (about 10 miles north of Ft. Collins).

Monday, July 10, 2017; 9am from trailhead – 3pm

Carter Lake Wildflower Hike - Sundance Trailhead

Maddie Maher, Leader

This will be a botany-paced (slow) hike focused on plant identification. Your guide is a master's student in Botany at CSU. The hike is six miles (out and back) along the west side of Carter Lake, on the Sundance Trail. From downtown Fort Collins, the drive takes about 50 minutes. If you have a Larimer County Parks pass, there is no fee for parking. Otherwise, it is a \$7/day fee per car, so carpooling will be a good idea. Permits can be purchased at the Carter Lake Marina or the ranger station at the junction of South County Road 31 and W, County Road 18E. Bring plenty of water, snacks and/or lunch, sunscreen, a hat, mosquito repellent, rain gear, a hand lens, and your *Flora of Colorado* if you would like to key out plants.

There are some steep and rocky portions of the trail, but it is mostly flat, with elevations between 6000 and 6300 feet. Large parts of the trail are cool and shady. For those with limited mobility, the rocky portions could be challenging, especially if we have wet weather. The focus for this hike will be on plant identification. The trip will be suitable for beginners in plant ID as well as the more experienced. Keying out plants is optional but encouraged. Rattlesnakes are known to be in the area. Long pants, boots and a walking stick are advisable. The trail is well used.

Meet at 9:00 am at the Sundance Trailhead, North Pines parking lot, Carter Lake, Loveland CO. (north side of the Carter Lake) Access is from South County Road 31, and the turn into North Pines campground is between the Windjammer bar and the lake, on the west side of the road. After turning, go all the way to the end of the road, past the boat inspection station. The trailhead is at the end of the parking lot. For car-pooling, meet at 8:00 am at the west side of Loveland in the parking lot of the Kmart at 2665 W Eisenhower Blvd, Loveland, CO. This is on the NW corner of Wilson Avenue and Eisenhower Blvd.

Sunday, July 16, 2017; 7am – 4pm
Sulphur Cinquefoil Study and Surveys
Renee Galeano-Popp, Leader

We will collect plant density data within 5 study plots around Elkhorn Creek, a beautiful riparian area near Red Feather Lakes. We will dig weeds for less than an hour within one treatment plot. In the afternoon, we will botanize in a wet meadow between the plots and along trails. This trip is part of an ongoing study our chapter is doing for the US Forest Service. Emphasis will be on plant study/data collection, some plant ID. Hazards may be bending, stooping and minor digging with garden hand tools. Moist ground possible. Bring water, hat, sunscreen, lunch/snack and rain gear in case of a shower. Bring garden variety weed digging hand tools (not shovels or anything big), perhaps a kneeling pad.

We will carpool at 7:00 am from the Shell station (known as "Ted's Place") at the mouth of the Poudre Canyon at the intersection of Rt. 287 and The Poudre Canyon Highway (about 10 miles north of Ft. Collins).

Saturday, July 22, 2017; 7am – 5:30 pm
Snowy Range Alpine Trip
Stephen Hauptli, Leader

This will be a trip to the Snowy Range west of Laramie, WY. It is a beautiful place that has some different flora. The trip will take 1 hour 45 minutes from Ted's Place. We will hike about 2-3 miles. Emphasis on Plant ID, but would like to make some ground to see parts of the area. High altitude, lightning, black flies? Bring water, lunch and snacks, warm clothing, rain gear, a hat, sunscreen and perhaps some insect repellent.

We will carpool at 7:00 am from the Shell station (known as "Ted's Place") at the mouth of the Poudre Canyon at the intersection of Rt. 287 and The Poudre Canyon Highway (about 10 miles north of Ft. Collins). If anyone wishes to camp up there and gather in WY, call Steve at 303-443-0443.

August 5, 2017; 9am
Thistles of Northern Colorado
Casey Cisneros, Leader

Join us for a hike to look at native and non-native thistles in the Laramie Foothills of Northern Colorado. The Larimer County Department of Natural Resources 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. Red Mountain Open Space is truly a unique and diverse landscape with nearly pristine native plant communities in a rare foothill ecosystem. Be prepared for a moderate hike of 3 miles. Meet at Larimer County Natural Resources, 9:00am, 2649 East Mulberry, Fort Collins, to carpool to the Open Space. If you have any questions, please contact Casey Cisneros at 970-498-5769.

Saturday, August 19, 2017, 7am – 4pm
Sulphur Cinquefoil Study and Surveys #2
Renee Galeano-Popp, Leader

This day will focus on re-visiting isolated Sulphur cinquefoil (*Potentilla recta*) sites found in 2016, looking for the rare plant *Potentilla ambigens* and if time allows more surveys for *P. recta*.

Difficulty level for most sites is #2, but one site is a #3 due to a steep hill. Emphasis will be on plant surveys, some plant ID. Hazards may involve moist ground, steep hill. Bring water, lunch/snacks, sun screen, hat and rain gear just in case. We will carpool at 7:00 am from the Shell station (known as "Ted's Place") at the mouth of the Poudre Canyon at the intersection of Rt. 287 and The Poudre Canyon Highway (about 10 miles north of Ft. Collins).

Sunday, August 27, 2017; 7:30am – 4:00pm
Zimmerman Lake Gentian Hike
Hugh Mackay, Leader

Zimmerman Lake is very near the summit of Cameron Pass and is accessed by an old logging road from a large parking lot on the left as you travel west. August is gentian time in the area and we will identify different species (using Ackerfield's Flora) as we hike to and around the lake. Difficulty level is #4 (#1 being easy). The old logging road is fairly steep and the altitude at the Lake is 11,000 feet. We will hike about 4 miles round trip. We will be right at tree-line and the weather can be changeable even in August. The area on the far side of the lake can be boggy, with one or two small inlet stream crossings. Bring water, lunch/snacks, rain coat, warm jacket or sweater, hat, insect repellent and sunscreen.

Meet at 7:30 am at Ted's Place. We will carpool from the Shell station (known as "Ted's Place") at the mouth of the Poudre Canyon at the intersection of Rt. 287 and The Poudre Canyon Highway (about 10 miles north of Ft. Collins).

Sunday, September 17, 2017; 7:30 am – 4-5:00pm
Ecological History of Riparian Willow Communities in Rocky Mountain National Park
Ed Gage (CSU), Leader

Ed Gage (CSU Post-Doc) will discuss specific willow taxa found in montane RMNP areas; ecological relationships of willows with beaver, large ungulates and pathogenic fungi; and importance of willow structure to management. Visits include several sites in Moraine Park and Horseshoe Park. We will hike less than 2 miles at an altitude range up to 8500 feet. Emphasis will be on Plant-Animal Relationships, Ecology. Easy hiking, some potential for soggy ground, but no need for anything like waders. Bring water, sunscreen, lunch/snacks, hat, jacket and rain gear.

We will depart at 7:30 am from the west side of Loveland at the parking lot of the Kmart at 2665 W Eisenhower Blvd, Loveland, CO. This is on the NW corner of Wilson Avenue and Eisenhower Blvd. If you wish to meet us at the park, the tour will begin at Beaver Meadows Visitor's Center at 9am. Let Renee know ahead of time if you want to meet at the Visitor Center instead of carpooling from Loveland.

Southeast Chapter

To register for these trips, reply to Doris Drisgill at mtnflora@gmail.com

Shortgrass Prairie at Lake Pueblo State Park
Presenter: Rich Rhoades, 719-250-5993, richrhoades72@gmail.com

Saturday June 10, 2017; 9:00 am til noonish
Meet at North side Entrance Station

Directions: From I-25 take the Hwy 50 West exit toward Canon City. At approx. 7 miles west of Pueblo take the McCulloch exit for Pueblo West (south). Travel approx. 3.8 miles south on McCulloch to Nichols (prior to the turn at Nichols there is a State Park sign)

Travel 0.8 miles on Nichols, turn right at a dirt road. The road is before you reach the Entrance Station, parking is free. We will carpool with folks who have a State Parks Pass. Those that don't will need to purchase a day pass for \$7.

Our site will be close by; we'll choose the site based on best available plant viewing. We will be looking at shortgrass prairie and shale barrens (Limestone Breaks).

We will be on a paved trail with a limited amount of hiking on rocky grasslands. (Easy)

Bring hat, sunscreen, light snacks/lunch/water and your favorite plant ID reference.

More information/maps about the Park is available on the internet.

June 17, 2017 Elk Park Knoll on Pikes Peak

Meet at 8 am at the Toll Gate. We'll carpool up to almost 12,000 ft. to see the unique alpine tundra in this unusual habitat, including dwarf alpine columbines, endemic alpine bluebells, endemic alpine parsley, and dozens of other high altitude blooms. Our hike will be less than one mile, but can be strenuous due to the altitude and weather. Come prepared for cold winds, hot sun and maybe rain on a rocky trail. Bring jacket, raingear, sunblock, water and snacks/lunch. We will try to be back down by 2 pm. The toll will be \$7 per person; please bring cash.

June 25, 2017 Cottonwood Pass Alpine Flowers

Meet at the summit of Cottonwood Pass (Chaffee County 306) at 9 am. Paving is scheduled for the other side, so the pass will likely be closed beyond the summit. We'll do a short hike thru the tundra to see alpiners not found on Pikes Peak, including lavender wallflower and *Smellowskia*. The elevation is just under 12,000 ft; be prepared for short climbs and descents, cold winds, hot sun and maybe rain. Bring sturdy footwear, jacket, sunblock, raingear, water and snacks. We will try to finish by 1.

July 15, 2017 Buffalo Canyon - Woodlilies

Starsmore is at the mouth of N. Cheyenne Canyon; from S. Nevada (Hwy 115) take either Cheyenne Rd. or Cheyenne Blvd. west. Meet at Starsmore Discovery Center (east lot) at 8 am to carpool up the canyon to the trailhead. We'll follow the creek below St. Mary's falls to look for rare woodlilies and many other lower elevation (7000 ft.) riparian flowers. Please come prepared for warm weather, but bring raingear, water and snacks/lunch. We'll hike 4-5 mi. and be back before 2 pm.

August 5, 2017 Independence Pass

Meet at 8:30 am at the public parking lot in the village of Twin Lakes. We'll carpool up to well over 12,000 ft. on Independence Pass to investigate the high altitude tundra at the summit, along relatively level ground and ponds. The walk can be easy, but be prepared for cold winds and possible storms at this very high altitude. Bring warm jacket, sunblock, raingear, water and snacks/lunch. There is also a more strenuous hike we can do if anyone chooses, dropping down off-trail from the summit through alpine meadows and thick willowbrush to the lower switchback. We should be back to Twin Lakes by 3 pm.

Southwest Chapter

Saturday, May 27, 2017; 7am – 11:30 am (or until a thunderstorm threatens!)

Barnroof Point Rambles

John Bregar Leader

We will walk the trail that flanks the north side of Barnroof Point west of Durango (access via Lightner Cr Road). Expect lush Gambel Oak-Ponderosa Pine woodlands with open meadows and great views of the La Plata's. This trail is moderate difficulty (3). If we go all the way to Deep Creek at the end of the trail, round-trip distance will be 3.5 miles and elevation gain about 750 feet (cross a pass twice, 450 feet going and 300 feet returning). A special treat will be *Physaria pruinosa* – the Pagosa Springs Bladderpod – the only known location for this local endemic in La Plata County. We'll also stop to admire a very large Gambel's oak specimen. Checklist will be provided, and we'll log in every plant species that we find. All skill levels welcome.

Trail could be muddy, and a thunderstorm could pop up. Bring rain gear, adequate footwear, sunscreen and hat, snacks and water. Also, advise bring hand lens and a copy of checklist, which will be emailed ahead of time. Meet at 7:00 am at Santa Rita Park in Durango – 2nd parking area on the left. If you have questions, please contact John Bregar at johnbregar09@gmail.com, or 970-403-2798.

Saturday, June 17, 2017; 10am – 1pm

Pagosa Springs Skyrocket

Sandy Friedley and Al Pfister, Leaders

The Colorado Natural Area program is expecting to designate the Pagosa Skyrocket Natural Area in Archuleta County in 2017. This property was recently acquired by Colorado Parks and Wildlife to protect the federally endangered Pagosa skyrocket plant. The Pagosa Skyrocket Natural Area is located just one mile south of Pagosa Springs at 7,100 feet elevation. The upland hillsides of the property are open shale with several Archuleta County endemic plant species and gorgeous views. Pagosa skyrocket (*Ipomopsis polyantha*) is a globally rare species listed as endangered by the U. S. Fish and Wildlife Service in 2011. Pagosa Skyrocket Natural Area was acquired by Colorado Parks and Wildlife in 2016 and over half of the world's known population is found on the 88-acre property. Gray's Townsend daisy (*Townsendia glabella*) is also found on the site. Common native species occurring in the area include Indian ricegrass (*Achnatherum hymenoides*), prairie flax (*Linum lewisii* var. *lewisii*), white sagebrush (*Artemisia ludoviciana*), trailing fleabane (*Erigeron flagellaris*), spearleaf buckwheat (*Eriogonum lonchophyllum*), elkweed (*Frasera speciosa*), hairy false goldenaster (*Heterotheca villosa*), and creeping barberry (*Mahonia repens*).

Easy to moderate - there is little elevation gain at the site; however, there is a wetland drainage to be crossed. Gnats may be present, so bug protection is recommended. The site is very open with little shade. Could be warm and or breezy. Always bring bug repellent. Meet at 10:00am at Hometown Grocery store (old City Market at 755 San Juan Street [U.S. Highway

160] just southeast of the stoplight at South 8th street and 160 east end of Pagosa Springs.

Sunday, June 25th. 9 am – 4 pm
Willows, Durango Area
Gwen Kittel, Leader

Come join Gwen Kittel for a field trip on public lands to discover up to 11 species of willows. Meet in Durango, at Memorial Park on E. 2nd St between 32nd and 30th streets. There is free parking and is an easy place to figure carpooling. Bring hat, lunch, water, sunscreen, rain gear, notebook, plant keys and camera. We will meet at 9 am, and carpool as much as possible to stops along the way off of State HWY 550. We should be done and back by 4 pm. Trip leader: Gwen Kittel, 303-506-6480 cell, tg_kittel@fastmail.fm

Wednesday, July 19, 2017; 9am trailhead (8:15 carpool) – 2:00-3:00pm
Pass Creek Trail
Travis Ward, Leader (to register, rsvp to tlward@frontier.net or call 970-247-1310)

We will slowly hike up the Pass Creek Trail from the top of Coal Bank Pass (elevation 11,600ft). Total trip distance will be about 3 miles. Lunch will be by a pond in the woods. For flower abundance and variety, this is as good as it gets! We could see as many as 100 plant species in flower, and we will take the time to point out and enjoy each one! Bring a magnifier if you have one, and a flower book or two, along with lunch, rain gear including boots that can get wet, and a warm top. The emphasis will be on common plant names. Physical difficulty is #3-#4 (#1 being easiest, out of five). Hazards could be thunderstorms, slippery trails if wet, and mosquitoes. Meet at 9am at Coal Bank Pass highway side paved parking, OR, 8:15am at Durango Rec Center parking (first right after you enter the Rec Center from the 27th St. stoplight.) Contact Travis Ward for more information and to register.

Saturday, July 22, 2017; 6:30am – 4:00pm or earlier
Stony Pass
John Bregar, Leader

Walk alpine tundra along Continental Divide south of Stony Pass (12,600 feet). Follow trail 1.5 miles to a rare-plant site. Expect stunning scenery and stunning flowers (the very rare *Physaria scrotiformis* along with *Aliciella pinnatifida*, *Xanthisma coloradoensis*, *Phacelia bakeri*, *Oxytropis podocarpa*, *Boechea lemmonii*, *Artemisia campestris* along with a multitude of more common plants). Checklist will be provided, and we'll log in every plant species that we find. All skill levels welcome. Easy (2). 3-mile round trip on good trail with some easy off-trail walking across rolling tundra at high elevation. Total elevation gains add up to about 400 feet. Be prepared for varying conditions -- potentially all on the same day -- from intense sunshine to cold rain and wind. Bring rain gear, warm clothing, sturdy footwear, sunblock and sun hats, lunch, and water. Bring hand lens and plant checklist that will be emailed ahead of time. Meet at 6:30am at the Durango Rec Center south parking lot between the ball fields and Main Ave. Take first right after turning off of Main.

Ohio Peak Ridge and US Basin
Saturday, August 5, 2017; 8am – 5pm

Robert L. Powell, Leader; Jim Shadell, Asst. Leader

To register, contact Robert Powell robertlpowell@durango.net – We will arrange carpooling at Animas City Park, leave soon after 8:00 am, and drive US 550 to a rest stop at Coal Bank Pass. From there we will continue to Brown's Gulch in upper Mineral Canyon and drive up steep FR 825 to Ohio Ridge. At the curve leading south, we stop to view some alpine lichen. After that brief stop we continue south on a nearly level road to a small rivulet. At that site we will study alpine tundra, riparian, and fellfield flowers and discuss the changing ecology of the nearby treeline. After that short visit, the group will divide in two. One group, led by Jim, will climb up to the ridge and descend through upper US Basin to the midway elk path. The other group, led by Bob, will drive down a very steep road to the elk path and view nearby plants. Large fields of Elephant's Heads and Arrowleaf Senecio are in mid-elevation US Basin. The two groups will meet for lunch at the elk's path. After lunch the two groups will continue down through fens to the lower end of US Basin. The cars left up on Ohio Ridge will be brought down and we will visit a patch of Bog Orchids closer to US 550. If dangerous weather threatens, the upper basin hike will be skipped, the lower visits will be shortened, and we will go to a well-flowed site in lower Mineral Creek Valley.

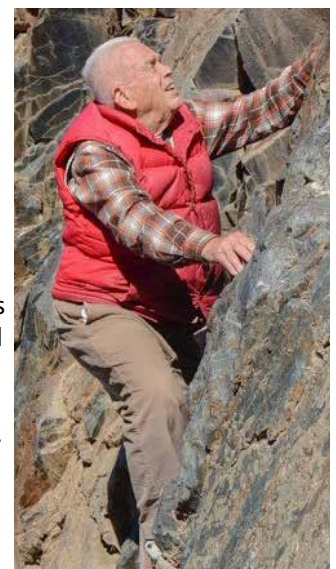
A plant check list and detailed plant descriptions will be provided and a few hand lenses can be supplied. The ridge climb and descent down US Basin has occasional patches of rocky talus slopes and is rated as 2 in difficulty. It involves a 1/4 mile hike up a 300 ft. elevation gain on tundra and then a 1/2 mile descent, mainly on tundra. Those using the shuttle will have only short walks; the difficulty is only 1. Many of the areas in lower US Basin have a few inches of surface water. Bring rain jacket and pants, lunch, snacks, water, hand lens and a camera or smart phone. For those taking the longer hike, sturdy boots are necessary. For those using the shuttle, water-proof shoes are sufficient. 4WDHC cars are necessary, especially for the second half of the trip. Limit to 12 people.

September 10, 8am – 5pm
Identification of Common Subalpine Lichens in Western San Juan Mountains

Robert L. Powell, Leader

To Register: Contact Bob at robertlpowell@durango.net

We will arrange carpooling, leave Santa Rita Park soon after 8:00 am, and drive US 550 to a multi-lichened site at Coal Bank Pass. There will be an introductory discussion of items and photos in the handout brochure that will be provided. The structure and types of lichens will be described and specimens will be examined. We will then study lichen sites nearby. At first, we will identify crustose, foliose, and gelatinous lichen on nearby rocks. Next, we will view fruticose tree lichens. The last type viewed will be



Bob Powell, Oct. 2016, age 88

(Cont. on p. 31)

Velma Richards: 1917-2017

by Rick Brune

Velma Richards, beloved friend, educator, and longtime member and contributor to the Colorado Native Plant Society, passed away on April 12, 2017. She will forever be remembered for her great botanical knowledge, her love of the natural world, and her willingness and patience to share her knowledge with others. She will be greatly missed by all who had the privilege of knowing and spending time with her.

Velma was often recognized for her contributions to the Colorado flora. She was given the “Everyday Hero” award by Channel 7 for her long volunteer service at the Kathryn Kalmbach Herbarium at the Denver Botanic Gardens (DBG). On at least one day a week, you could find her volunteering in the herbarium, where she volunteered for nearly 40 years. According to SEINet, Velma collected or was co-collector of 1585 specimens. There are surely many more that haven’t made it into the database. She also guided tours in the tropical conservatory and loved learning and teaching people about the diversity of plant life and its use by people. She also made extensive collections of conservatory plants for the herbarium. On other days she was working on plant identification or in the field working on projects.

She worked on botany projects in Rocky Mountain National Park, Walter S. Reed Botanical Garden, Florissant National Monument, and elsewhere. She edited the DBG’s publication, *Green Thumb*, for many years and wrote several articles for it.

The Colorado Native Plant Society awarded her an Honorary Life Membership on October 15, 1994, for her contributions to the Society and to Colorado botany. In 1984, she was a charter member of the Denver-Metro chapter. The Society’s extremely popular program of book sales began with Velma. She managed the purchasing, pricing, storing, and sales of large numbers of new and used books. Her kitchen table more often looked like a business venture than a place where you might sit for a meal. At Denver chapter meetings, Velma’s three or four tables of botany and related books were avidly sought out. Everyone looked forward to Velma’s monthly book store. The book sales she started were highlights at annual meetings and workshops and remain so today.

Velma regularly participated in field trips throughout the state. On field trips she was invincible. Because of her severe scoliosis, field trip leaders were often asked by people unfamiliar with Velma if she would be able to fully participate. They usually received a reply that the leader was more worried about their fitness than Velma’s. Velma never met a physical challenge she couldn’t complete. She climbed mountains, backpacked, hiked many prairies, and forded more than one river on CONPS field trips. Unknown to most, Velma was also an ardent rockhound and amateur geologist. When asked, she could teach about rocks and minerals along with botany and ecology. She also made important contributions to the publication of both editions of *Rare Plants of Colorado* by the Colorado Native Plant Society.

Velma was born on November 6, 1917, in a sod house near Ord, Nebraska. At a young age, her family moved to another farm near Sterling, Colorado, where she grew up. She was the second oldest of seven siblings. Her family was part of a community of farmers who worked, worshiped, and sang together. Her love of singing continued throughout her life. Her father was a minister and a farmer. Throughout her life, her great love of learning had a profound influence on her. With the gracious help of Velma’s family, we want to tell you more about the life of this exceptional woman. The following is adapted from information provided by her family:



Velma Richards and Rick Brune at Pawnee Buttes Photo by Janet Wingate



Velma receiving CONPS Honorary Lifetime Membership Award from Tom Ranker. Photo by Loraine Yeatts.

Velma was a good student. Soon after finishing high school, she went to Colorado Teachers' College. Her interest in botany and adventurous spirit were already evident. After gaining her teacher's certificate, she began her first career teaching in schools in northeastern and southeastern Colorado, enduring the dust storms of that era. Velma was the only teacher in some of those schools. Throughout her life, her love of teaching would emerge over and over again.

After teaching in Colorado, Velma went back to school at North Central College in Naperville, IL. At North Central, she was a first soprano in the Girls Glee Club of the college choir. She graduated in 1944 with a degree in chemistry and botany. She returned to Colorado to begin a career in chemistry that lasted about five years: First with the U.S. Bureau of Mines in Golden, then as a chemistry teaching assistant at the University of Colorado. It was in Golden that she met Harlan, the love of her life. After marrying Harlan in 1947, she worked to put him through school while he studied mechanical engineering and business administration. (Harlan was an accomplished mechanic. On CONPS field trips, he often stayed behind at the campsite to perform minor repairs on members' vehicles!) Velma's next career began at this time with the birth of the first two of her five children, Jim and Cindi. They were followed later by Lars, David, and Tim. For a time, they lived in Boulder and Golden while Harlan worked for a year in Dallas. Velma was busy as a 4-H leader; singing in the church choir; having boys in boy scouts; and preparing for family camping and vacation outings. These trips were learning times for Velma and times she used to teach her family about plants and rocks and the rest of the natural world.

Because of her upbringing on farms and living through the Depression, Velma was quite resourceful. She made many of her own clothes along with clothes, costumes, and other assorted items for her kids. Velma was also an excellent cook— which Harlan commented on regularly— and made everything from scratch. At Christmas, she made many kinds of cookies. These recipes are handed down and treasured by her children, grandchildren, and friends. Her chocolate chip cookies are famous.

As her children grew up and left home, Velma continued her love of learning. She returned to the University of Colorado to renew her teaching certificate and pursue her love of botany. She graduated in 1977 with a Master's degree in elementary education and ecology. She taught elementary school for several years while earning her degree.

A big part of Velma's life was sharing her knowledge of plants and rocks through volunteer work. She never stopped learning and volunteering.



Velma on alluvial fan. *Mimulus gemminiparus* habitat. RMNP. Aug. 1987 Photo by Loraine Yeatts.

At age 70, realizing she was probably not going to get another job, she focused more on volunteering. She continued to be active at the Denver Botanical Gardens, the Littleton Gem and Mineral Club, swimming three days a week at the Englewood Recreation Center, and singing with her church choir. She would often take walks, noticing each plant, flower, and rock and thus not getting very far very fast. She loved to read to her grandchildren and help them learn.

At age 75, she went backpacking in Rocky Mountain National Park as part of a grant for the Denver Botanical Gardens to study the flora of the Park. She loved the flora and landscape of the high mountains.

In the late 1980s, Velma went on her first international trip to Costa Rica with her Native Plant Society and Botanical Garden friends. She brought back ethno-botanical specimens and information on tropical flora to enhance her guiding in the tropical conservatory at the Botanic Gardens.

Velma's husband Harlan passed away at age 91 in 2000, when Velma was 82 years old. She decided to do more traveling. At age 86, she went to Scotland to visit her son David. In Scotland, she and David walked through many botanic gardens and hiked on the Isle of Skye. One day, when it was very windy and rainy, she walked 6 miles before getting home. The next year, at age 87, she traveled alone to California on the Amtrak California Zephyr to see

her son Jim and grandson Ben. Velma, Jim, Lisa, and Ben went hiking on the coast at Point Reyes National Seashore, scrambling



Harlan Richards changing tire on CoNPS field trip while Sue Martin and Myrna Steinkamp watch. Photo by Loraine Yeatts.



Velma presents a birthday cake to Bill Weber as Carolyn Crawford looks on. Nov. 16, 1995. Photo by Loraine Yeatts.

(Continued on page 23)

Award-Winning Native Plant Selections from Plant Select®

by Pat Hayward

Plant Select® is a nonprofit collaboration of Colorado State University, Denver Botanic Gardens and professional horticulturists from 250 organizations in Colorado and around the U.S. Its mission is to seek out and distribute adaptable and resilient plants for regional landscapes and gardens, particularly in Colorado, Utah, Idaho, Wyoming, southern Montana, and northern New Mexico. Every year a new slate of 5-7 plants is promoted – some are new to the trade (introductions) while others are underutilized plants that deserve more attention (recommendations). New plants come from a variety of sources – often from local growers – and are trialed in sites around the region. Woody plant trials are conducted by Colorado State University graduate-level students at four sites in Colorado for at least three winters – often longer. Herbaceous plants are trialed at Denver Botanic Gardens, CSU and at selected public gardens in five western states. Taxa that are new to horticulture are trialed for at least two winters and are evaluated for both performance and invasiveness with protocols developed by Denver Botanic Gardens. Many plants put through these trials never make it into the program because of poor performance (usually lack of winter hardiness), unattractive characteristics, or because of excessive seeding or rhizomatous growth.

Since the program's launch twenty years ago, 148 plants have been promoted, and of those almost half (71) have North American "roots." Some are native species recommended for their usefulness in regional gardens and landscapes, others are unusual or superior forms found in the wild, and others are hybrids, either occurring naturally or developed by breeders. I choose the term North American roots because a few are either from, or contain genetics from Mexican species. As a birder, I prefer to consider bird migration patterns when looking at garden plants because these genetics offer resources that are often undervalued. Surprisingly, there are species in the program hailing from eastern areas, as well, because both in trials and in application, they've proven to be extremely durable in our western climate.

In celebration of the program's 20th anniversary, here are 20 of the best-performing and unusual native selections from Plant Select®. More information about these, and all the plants in the program, can be found at www.plantselect.org.

GROUNDCOVERS

***Callirhoe involucrata* 'Prairie Cherry' Winecups**



Not yet available, this is a seedling selection developed by Brian Core from Little Valley Wholesale Nursery (Brighton). The species is native to central & SW US and is a tough, extremely drought tolerant ground-covering perennial growing less than 12" tall and spreading up to 60" across. This new form has cherry red flowers, and offer all the other attributes of the species.

***Eriogonum umbellatum* var. *aureum* 'Psdowns',
KANNAH CREEK Buckwheat**



This selection from the Western Slope of Colorado was chosen for its robust growth and larger yellow flower clusters. Foliage is evergreen, often maintaining a dark burgundy red color through fall and early winter.

PERENNIALS

Clematis hirsutissima v. *scottii*, Scott's Sugarbowls



Laporte Avenue Nursery (Fort Collins) grew and sold this form of clump-forming clematis for years. Part of the Plant Select® Petites program, this native from southern Colorado grows to only a foot tall, spreading slowly over the years. It grows with no additional irrigation once established, and in the spring produces gentian-blue nodding bell-like flowers for about a month.

Heterotheca jonesii x *villosa* 'Goldhill' Goldhill Golden-aster



Ray Daugherty, horticulture instructor at Front Range Community College, found this naturally occurring hybrid of *H. villosa* & *H. jonesii* near Gold Hill outside of Boulder. It was the top winner in trials at CSU 2 years in a row, and was introduced through the Plant Select® Petites program. It forms tight mounds just 1-2" tall and 5-10" wide, producing small yellow flowers from spring to mid-summer. The grey, fuzzy foliage is nearly evergreen.

Zinnia grandiflora 'Gold on Blue' Golden Flowered Prairie Zinnia



Another selection from David Salman, this vigorous, blue-foliaged form was found in a population of Prairie Zinnia growing near I-25 south near Trinidad, Colorado. A late-season bloomer, it spreads rapidly in well-drained soils and is an excellent choice for hot, dry slopes and other "neglected" areas

Engelmannia peristenia, Engelmann's daisy



This is a common wildflower of the southwest, but the Plant Select® strain was chosen by Dianne Wilson of Applewood Seed Company (Golden), from a compact, heavy-flowering form in southern Colorado.

Penstemon x 'Coral Baby'



Coral Baby penstemon was discovered as a chance seedling by Kelly Grummons, Arvada, most likely a cross with *P. barbatus* (Western US species) and other species growing in his nursery. In trials, Coral Baby bloomed nearly all summer long with full, 18-18" compact spikes of coral-pink tubular flowers. It blooms heavily in container plantings, as well.

Penstemon linarioides v. *coloradoensis*, SILVERTON Bluemat Penstemon



This Bluemat Penstemon was found in southwestern Colorado, and selected for its extremely silvery-blue, linear foliage and powdery blue flowers in early summer. To perform its best, plants should be grown in hot, sunny and dry sites with fast-draining soils similar to its native habitat.

PERENNIALS (Cont.)

The following selections were not derived from Colorado native specimens but trials have demonstrated that they are hardy in Colorado. They were derived from plants in the region.

***Heuchera pulchella*, Sandia Coralbells** is not a selection, but rather a plant proven to be extremely hardy and beautiful in smaller gardens. Though listed on the New Mexico rare plant list, plants available from Laporte Avenue Nursery (the official Plant Select® grower) are grown from a private seed source, not collected in the wild. The species is native to the Sandia and Manzano Mountains east of Albuquerque. In springtime, delicate-looking spikes of light pink flowers cover the plant for about a month, but the tight, low-spreading habit and nearly evergreen foliage make this little plant extra garden-worthy.

***Salvia darcyi* 'Pscarl', VERMILION BLUFFS Mexican Sage.** Most forms of this northeastern Mexico species are not hardy this far north, but when Shalene Hiller, Heritage Golf Course (Westminster) horticulturist noticed some plants coming back for her year after year she notified Plant Select® and this named form was introduced.

***Salvia reptans* 'P016S', AUTUMN SAPPHIRE Texas Grass Sage.** Late-blooming perennials that offer food resources for hummingbirds and beneficial insects aren't common, so it was suggested Plant Select® look into developing a good garden form of *Salvia reptans*, a species from the higher elevations of west Texas. Seedlings of *S. reptans* were lined out in trial beds and at the end of the second year, four distinct forms were selected to be re-evaluated. Those four selections were lined out into new trials and after another two years, this superior, compact form was selected to be introduced. It offers an 18-24" mound of glossy green foliage all summer, with sapphire blue flowers appearing end of September and lasting to the first hard frost.

***Zauschneria garrettii* (*Epilobium canum* ssp. *garrettii*) 'PWWG01S', ORANGE CARPET Hummingbird Trumpet.** This is a selection from David Salman from plants growing in south-central Idaho offering a low-spreading, drought-tolerant form of California fuchsia. When in full bloom in early to mid-summer, it becomes a virtual hummingbird magnet.

Ornamental grasses

***Bouteloua gracilis* 'Blonde Ambition', Blonde Ambition Blue Grama Grass.** This grass was developed by David Salman from a naturally-occurring form found in Santa Fe, New Mexico. It appears to be a natural hybrid of *B. gracilis* as it grows much more vigorously than the species. Plants grow to 24-36" tall and produce large (2" long) chartreuse-to-straw-colored seed head held horizontally in mid-late summer. Blonde Ambition is becoming a mainstay ornamental grass in commercial and municipal plantings along the Front Range.



***Muhlenbergia reverchonii* 'PUND01S', UNDAUNTED Ruby Muhly.** This showy, mid-to-smaller-sized grass was selected from a population in central Texas by Lauren and Scott Ogden for cold hardiness and exquisite fall display of ruby-pink seed heads. Known commonly as "seep muhly" in the wild, this form has proven to be more drought-tolerant than its native habitat would suggest.



***Schizachyrium scoparium* 'Standing Ovation', Standing Ovation Little Bluestem.** Though not of western origin, this clonal selection was brought to Plant Select® by North Creek Nurseries in eastern Pennsylvania and has proven to thrive in our Colorado conditions in trials. Chosen for its consistent upright habit in bloom, this form can be used in commercial and residential applications where uniformity is desired, but it's just as ornamental as a specimen. The summer foliage is bluish-green and mounding. Not illustrated.

WOODIES

***Arctostaphylos x coloradensis*- Mock Bearberry, Panchito, & Chieftain Manzanitas.** Plant Select® has introduced three forms of manzanita from western Colorado over the years. These are extremely ornamental broadleaved groundcovering evergreens found as natural hybrids. Mock Bearberry is the smallest form, growing to about 12" tall; Panchito grows to about 24" tall and Chieftain has the largest leaves and habit, growing to about 2' tall or more, and up to 6' wide.



WOODIES(cont.)

***Chrysothamnus (Ericameria) nauseosus* var. *nauseosus*, Baby Blue Rabbitbrush**

Chrysothamnus (Ericameria) nauseosus var. *nauseosus*, baby blue rabbitbrush is a seedling grown form from selected populations in Colorado. The compact habit (less than 2' tall) and silvery-blue foliage and stems make baby blue rabbitbrush an excellent landscape shrub for smaller areas.



***Pinus edulis* Trinidad, Farmy, Tiny Pout (and others) and *Pinus monophylla* 'Blue Jazz'**

Pinus edulis Trinidad, Farmy, Tiny Pout (and others), and *P. monophylla* 'Blue Jazz' are dwarf forms of pinyon pine developed by Jerry Morris and produced by Laporte Avenue Nursery. Growing about an inch a year, they're adapted to the same conditions as their larger parents, yet won't overgrow even a small area for many years.



***Prunus besseyi* 'P011S', PAWNEE BUTTES Sand Cherry**

Prunus besseyi 'P011S', PAWNEE BUTTES Sand Cherry. Most *P. besseyi* in the wild are upright shrub forms, but when Jim Borland and Panayoti Kelaidis discovered a prostrate form on the plains of northeastern Colorado more than 20 years ago, they immediately knew they'd found a plant that was much needed for western landscapes. PAWNEE BUTTES grows 15-18" tall and spreads to 6' wide. Plants are covered with fragrant white blossoms in early spring, and in the fall the greyish-green leaves change to glowing coppery-red. It has also found to be especially useful in colder climates across the country.



Pat Hayward was Executive Director of Plant Select® for 9 years. She has more than 35 years' professional experience in the horticultural industry, and holds a B.S. in Forest Botany from SUNY College of Environmental Science and Forestry from a very long time ago. Visit <https://phytologic.wixsite.com/phservices> for information on tours and workshops at her home gardens in the foothills west of Fort Collins. Photos in this article courtesy Plant Select®.

Velma Richards (cont. from page 19)

over the rocks while looking at all of the plants. They also hiked in the White Mountains of California and what were they looking at? Plants of course, one of her greatest passions, if you haven't guessed!

Velma's life was full and blessed. She saw and was curious about all of the incredible changes in our world during her lifetime. From 1917 to 2017. May we all be as productive, energetic, and blessed in the years ahead. We miss you, Velma!

Rick Brune is a horticulturist, botanist, and photographer who is originally from Illinois. Rick is well-known for his work on the prairie garden at the Denver Botanical Garden and has a beautiful prairie garden in his back yard. His garden is often featured in native plant yard tours. Rick is an amazingly knowledgeable natural historian who loves the prairies.



Velma in lady fern patch, *Athyrium filix-femina*., RMNP. Photo by Loraine Yeatts. Aug. 1987

Conservation Corner:

The Botany Bill, H.R 1054, Still Needs Co-Sponsors

by Denise Wilson

Status of the Bill

On March 23, 2017, The Botany Bill was referred to the Subcommittee on Readiness. This Bill was officially introduced, but still needs co-sponsorship by each state's Congressmen and Senators.

What you can do:

Make this a grassroots movement! Call or write your Congressmen and Senators and urge them to co-sponsor this bill. It will go to a vote when it has received enough co-sponsorship to ensure passing!

History of Bill – excerpted from Press Release

"On February 14, 2017, U.S. Representative Mike Quigley (IL-05), Vice Chair of the Sustainable Energy & Environment Coalition, introduced the Botanical Sciences and Native Plant Materials Research, Restoration and Promotion Act to support the botanical science capacity of the federal government.

"Botanical knowledge impacts our lives in more ways than most Americans realize. From combating climate change and enhancing food security to restoring uniquely American native habitats and protecting our endangered species, botany plays a central role in addressing some of our country's biggest challenges," said Rep. Quigley. "One of our nation's greatest assets is its biodiversity, which is why we must support the health of these ecosystems, as well as the dedicated scientists that have made our earth's preservation their life's work. I am pleased that this bill will support their mission to sustain native and locally adapted plants so that America remains a vibrant, inspiring, and sustainable place to call home."

The Botanical Sciences and Native Plant Materials Research, Restoration and Promotion Act aims to increase the botanical science capacity of the federal government. It allows federal agencies to act with the expertise required to preserve unique American landscapes and emphasizes the importance of protecting native plants and plant ecosystems.

Additionally, the bill:

- Creates a new program of botanical science research within the Department of the Interior to help increase federal botanic expertise and allows DOI to hire new, additional personnel
- Creates a student loan repayment program for botanical scientists to encourage more students to make the decision to enter the field and to support them once they've graduated
- Declares a federal policy that the Departments of Interior, Agriculture, and Defense preference the use of locally-adapted native plant materials in their land management activities
- Requires states to utilize native plant species where possible and practical
- Establishes a new program to support collaborative grants to prevent rare plant species from becoming endangered and to remediate already endangered populations"

Local Action

Recently, Denise Wilson, the CoNPS secretary, attended the March for Science held April 22nd at Civic Park in Denver. One million people joined the March for Science worldwide in over 600 marches. In Denver, two of the most common signs read, "Science, not Silence", and "I'm with Her", showing a picture of mother earth. The event drew the largest crowds in downtown Denver since the Women's March on January 21st. There are currently 18 co-sponsors listed for this Bill - NONE of them from Colorado. The Bill has been referred to 5 House Committees and sub-committees.



Denise Wilson with sign

Supporting the Botany Bill

Please participate in whatever way is meaningful to you – call, email, or give your energy toward your favorite volunteer project. Show your support for science and for our native plants.

The Botanical Science & Native Plant Materials Research, Restoration and Promotion Act, H.R. 1054 Summary: <http://www.plantconservationalliance.org/files/pca/Botanical%20Sciences%20Bill%20Summary%202.17.pdf>

Call your senator & congressmen & ask them to sponsor The Botany Bill!

Colorado Senator & congressmen:

<https://progressnowcolorado.org/resources/contact-colorado-senators-representative/>

Michael Bennet, Senator; 303-455-7600:

<https://www.bennet.senate.gov/?p=contact>

Cory Gardner, Senator; 303-391-5777, 970-245-9553, 970-259-1231, 202-224-5941:

<https://www.gardner.senate.gov/contact-cory/email-cory>

Ed Perlmutter, Jefferson County; 303-274-7944:

<http://perlmutter.house.gov/>

Jared Polis, Boulder; 303-484-9596, 970-226-1239, or 202-225-2161: <http://polis.house.gov/contact/>

Diana DeGette, Denver; 303-844-4988:

<https://degette.house.gov/contact>

Mike Coffman, Aurora; 720-748-7514, 202-225-7882:

<https://coffman.house.gov/contact/offices>

Doug Lamborn, Colorado Springs; 719-520-0055:

<http://lamborn.house.gov/contact/>

Scott Tipton, Cortez; 202-225-4761:

<https://tipton.house.gov/contact-me>

Ken Buck, Greeley; 202-225-4676 <https://buck.house.gov/>

Cinquefoils at the Elkhorn Study Area: Rare and Noxious Together

by Renee Galeano-Popp

There are over 25 native cinquefoils (*Potentilla* spp.) in Colorado. Three (*P. ambigens*, *P. rupicola* and *P. subviscosa*) are tracked by Colorado Natural Heritage Program due to global and/or state rarity. Only one (*P. recta*) is listed as an official noxious weed by the State of Colorado Agriculture Department. All of them are beautiful, quintessential ambassadors from the Rose family.

Unlike prickly thistles, *P. recta* or sulphur cinquefoil, is an innocuous looking wildflower known to occur in several counties; however, occurrences are reportedly few in all but Boulder and San Miguel. In Larimer County, it's known in about 4 places including the Elkhorn area. Elkhorn is a beautiful montane forest and meadow complex that typifies the Canyon Lakes Ranger District of the Arapaho-Roosevelt National Forest about 40 miles west of Fort Collins. Elkhorn Creek and its tributaries make for floristically rich wetlands, fens and montane meadows that must be seen to be appreciated.

Concerned members of the northern chapter formed a noxious weed committee in 2015 for the primary purpose of educating members about the threats posed by noxious weeds to native plant communities. Not only do invasives like sulphur cinquefoil displace native plants, sometimes management of noxious weeds can present an even greater threat when broadcast herbicides are used to control them.

Colorado ranks noxious weeds according to threat and priority for management. List A species include purple loosestrife (*Lythrum salicaria*), myrtle spurge (*Euphorbia myrsinites*) and yellow starthistle (*Centaurea solstitialis*). These 25 species are the highest priority for eradication in the state.

List B species are the next priority and management is aimed at limiting their spread. There are 36 List B species including teasel (*Dipsacus laciniatus*), musk thistle (*Carduus nutans*) and yellow toadflax (*Linaria vulgaris*). There are 16 species on List C which is the lowest priority for management on a regional or county scale. They are included in case landowners wish to manage them locally. List C species include the ubiquitous cheatgrass (*Bromus tectorum*) and mullein (*Verbascum thapsus*).



Hohes Fingerkraut, *Potentilla recta*.
By Johann Georg Sturm (Painter: Jacob Sturm) - Fig. from book *Deutschlands Flora in Abbildungen* at <http://www.biolib.de>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=750788>



Larimer County Weed Crew member spraying Sulphur Cinquefoil along Elkhorn Creek

The CSU Extension et al. (2013) estimates there are over 1 million acres infested with noxious weeds. That is 2/3 of the Arapaho-Roosevelt National Forest or four Rocky Mountain National Parks. Everyone who enjoys native plants should realize they don't live without the health of the ecosystem that supports them. Many of our areas are under siege from these invasives. While most of them follow humans and are dominant in developed areas, there are many undeveloped areas under threat as well. Geographic locations of these species can be found online.

The Canyon Lakes Ranger District has been spraying herbicide on *P. recta* at Elkhorn for about two years. The committee proposed a project in which chapter members would compare the effectiveness of manual pulling (actually digging) and the chemical treatments by establishing study plots. In 2016, volunteers from CoNPS and the neighboring Shambhala Mountain Center came out to initiate work. Two permanent plots (one treatment and one control) were established in a manual treatment area and two in the chemical area for a total of 4 plots.

Each density plot is 50 ft x 50 ft square and volunteers counted all plants inside a carefully marked grid. When counting was done, everyone dug out the sulfur cinquefoil plants in the one manual treatment plot. For fun, a contest was held to see who could dig up the deepest, widest, craziest and smallest roots and the winners each got a bottle of root beer. Later in the summer, the USFS contracted the County to come spray the areas to be chemically treated.

As the summer proceeded, the committee started learning more and more about the ecology of sulphur cinquefoil. Surveys were conducted that expanded knowledge of the local population area some 20 times. Ultimately,



Winners of the root digging contest

(Continued on page 27, column 1)

Revegetation Projects Introduce Two New Penstemon Species to Colorado Highways

by Scott Smith

As a Colorado botanist with an interest in penstemons, I found the summer of 2016 to be quite interesting. Two new species of penstemon, both from Oregon, have been introduced to Colorado in highway revegetation projects. The introduced penstemons appear to be naturalizing very nicely in very harsh road-side habitats.

Highway road construction is always present in Colorado to help keep the ever increasing flow of cars and trucks running smoothly in and out of our mountains to the cities on the plains along the Front Range. After road expansion projects are completed, the highway departments try to revegetate the disturbed areas with some seed mixture. There must be some sort of guidelines and I would imagine they are required or encouraged to use a seed mixture with plants similar to those that occupied the area before the construction occurred.

During July 2016, while driving along US Highway 285 on a penstemon photography trip, I was looking for previously reseeded populations of *Penstemon palmeri*, a species of penstemon not from the area but used in highway revegetation projects. While looking for this wildflower, I happened to spot a penstemon that I did not recognize. After turning around and going back, I pulled off the highway onto a side road and discovered not only one penstemon that I didn't recognize but two different species of penstemon growing along the US Highway 285 in the Conifer/Aspen Park area. These were two species of penstemon not previously known to grow natively in Colorado. They are *Penstemon richardsonii* var. *dentatus* and *Penstemon venustus*. These penstemon are both native to north central Oregon south of the Columbia River. It is not surprising that these plants are doing so very well in Colorado, where they are receiving almost twice the moisture here than they received in their native habitat in north central Oregon.

I knew these two penstemon were distinctive from Colorado species. They are both sub-shrubs with woody stems and have serrated or dentate (toothed), leaves. Of all of the Colorado native penstemon, none truly have serrated leaves. Two species *Penstemon gracilis* and *Penstemon palmeri* have minutely serrated leaves, unlike the two species from Oregon. These two new Penstemon have large dark green, shiny, thick leaves that are highly serrated. The *Penstemon richardsonii* var. *dentatus* is a sub-shrub penstemon growing about three feet (3') in diameter, as well as almost three feet tall. The *Penstemon venustus*, a sub-shrub, is only about two-thirds the size of *P. richardsonii*. In Colorado we don't really have any true sub-shrub penstemon with woody stems and caudexes. The back swept, horseshoe shaped woolly anthers are another give away that it is different from our Colorado species.

Several weeks later in August 2016, while driving along US Highway 9, north of Silverthorne Colorado, I noted the same two Oregon species, *Penstemon richardsonii* var. *dentatus* and



Penstemon venustus



P. richardsonii var. *dentatus* (below)



Penstemon venustus, growing on another highway project that had been completed several years ago. This area in particular was a road widening project that also added parking alongside the road between the road and the river. Parking was probably added for fishing access to the river. The plants are

(Continued on page 27, column 2)

Cinquefoils at Elkhorn (Cont. from p. 24)



Counting plants in the study plots

surveys uncovered “satellite” (e.g. isolated) occurrences outside of the main infestation which led to questions about dispersal mechanisms. Unlike so many other noxious weeds, *P. recta* does not appear to be disturbance related or dispersed along roads. The current theory is that seeds are carried in the hoofs of animals during wet periods.

During the summer of 2016, members of the committee located *P. ambigens* or Southern Rocky Mountain cinquefoil about 2 miles away. A specimen was verified at CSU in December. Given the confirmation of this species in the area coupled with some unverified sightings within the Elkhorn study area, there is reason to believe *P. recta* and *P. ambigens* co-occur at the project site. This gives even more importance to weed management in the study area.

This project is slated to occur at Elkhorn for two more years. In 2017, volunteers will re-count plants in the density plots and dig out any that remain in the manual treatment plot. After that, the focus will shift to surveying for more satellite occurrences which will be mapped and removed. This shift will mean that CoNPS will play a key role in mitigating dispersal where USFS and County crews are unlikely to get to. In addition, the committee is hoping to spend a day surveying for *P. ambigens* to confirm its presence.

Weed mitigation relies on prevention, detection and treatment. Early detection and rapid response are critical for success. The northern chapter weed mitigation and study is doing just that. Limiting the spread of *P. recta* in the area surrounding the main infestation at Elkhorn is as meaningful an effort as they come. Confirming the occurrence of a rare plant in the weed mitigation area should raise the level of priority for management. Having a rare cinquefoil side by side with an invasive cinquefoil demonstrates that looks can be oh so deceiving.

The committee welcomes participants from far and wide to join in this important, interesting and fun project in 2017. Register on the chapter field trips web page and enjoy a day in the cool, mountains and lush wet meadows of northern Colorado.

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In the future, weed mitigation will become part of the Restoration Committee, of which Renee Galeano-Popp is the new Chair. If you'd like to help out with this project, please notify Renee at mtnpoppies@aol.com. Mitigation and surveys will take place July 16 and August 19. Sign up on the CoNPS Event Calendar on the website, <https://conps.org/mfm-event-calendar/#!calendar> Photos in article by Renee Galeano-Popp

Revegetation Projects & Penstemons (Cont. from p. 25)

well established and naturalizing quite freely. Both penstemon species set an abundant amount of seed in the fall as well. Again this location is giving these two north central Oregon species more water than they normally get from the high drier Steppe regions of Oregon. Perhaps, this is why they are growing so luxuriously.

This turned out to be two remotely disjunct population of the same two penstemon species from other states. Two different highway projects that used the same seed mixture for the revegetation portion of these projects.

During an unrelated adventure I noted several red flowered penstemon growing on a road cut along US Highway 40 between the Winter Park ski resort area and just east of the town of Winter Park Colorado. After turning around to investigate these penstemon, I discovered that they were two different red-flowered Southwestern Colorado species of penstemon, *Penstemon eatonii* and *Penstemon rostriflorus*. Both of these species are native to Southwest Colorado. This road cut along the highway in Winter Park Colorado was also a highway widening project that had been revegetated with a seed mixes.

Thus, my simple penstemon photographic trip turned into something completely special and different. The photographic journey along the US Highway 285 corridor, from Denver to Kenosha Pass allowed me to photograph the following Penstemon species: *Penstemon angustifolius*, *P. caespitosus*, *P. eatonii*, *P. glabor*, *P. gracilis*, *P. palmeri*, *P. procerus*, *P. richardsonii*, *P. rydbergii*, *P. secundiflorus*, *P. strictus*, and *P. venustus*, *P. virgatus*, *P. virens*, and *P. whipplianus*. Fifteen different species of Penstemon in 60 miles! Pretty impressive! It takes several days to do this, but it's worth it!

Scott F Smith is the author of Those Elusive Native Orchids of Colorado. He is a popular CoNPS workshop instructor who has taught classes on a variety of topics including cacti, orchids, and ferns. During the summer, Scott works as a field botanist in Colorado and in the Colorado winter, he works in Antarctica. Winter in Colorado is summer in Antarctica so Scott has found the door into summer. He can be reached at Plumberdude71@gmail.com.

Book Reviews

The Invention of Nature Review by Jack Carter

The Invention of Nature: Alexander von Humboldt by Andrea Wulf, Alfred A. Knoph Pub., New York, 2015.

Some years ago while I was fumbling my way through the several requirements to complete my Ph.D. at the University of Iowa, I had decided I was ready to take the examination for Ph.D. German. I happened to mention this to Robert Thorne my major professor, and he turned to his bookshelf and brought out a tattered book that had obviously been well read, and said that if I could read and comprehend this author I was ready for the German test. I read only the introduction and several of the first few chapters, and found it extremely thought provoking. Since I had completed three semesters of German as an undergraduate, I proceeded to take the exam and did very well.

But Bob Thorne would not let me rest, and every now and then, he would ask me a question concerning this book he considered so important for graduate students of plant taxonomy, plant geography and ecology. Since the book was in German my rate of reading was slow, and as a graduate student I always felt I was too busy to study anything that was not vital to my survival in my graduate program. This book titled *Views of Nature*, written by Alexander von Humboldt in about 1800, was complicated reading because it contained considerable science, and at the same time it was loaded with a great deal of lyricism. I just wasn't able to put together the science and the poetry with my level of understanding in ecology. Some years later I recognized I probably could have better put down everything else I was studying in my courses, and attended to comprehending the deeper meanings described in this publication. I have long since come to understand this is exactly what the very best professors do for their students, when they challenge them to go beyond the assignment, and reach the basic meanings of the nature of knowledge.

I later discovered von Humboldt was, in the early 1800s, the most knowledgeable scholar of nature on planet Earth, and what he was describing were his findings as he traveled throughout much of South America, North America, the Andes, then into Russia. It was some years later that I read Humboldt's description of his travels on the Orinoco River, and how he learned so much, and described so accurately his findings that allowed him to put together an extremely large and well designed story of the earth. He was not interested in just plants, or animals, rocks or climate, but his interests centered on bringing the collective relationships together into that subject we now call ecology.

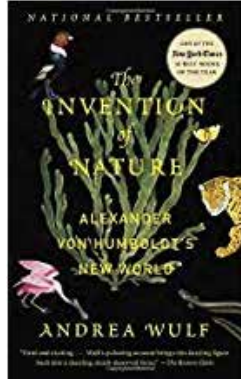
Also, I later discovered he was in contact with practically every scholar I had ever studied in three college courses in German

literature. He wrote long letters to the likes of Goethe, Schiller, and Friedrich Wilhelm III, describing his thoughts on science as well as his poetry. He always had a traveling partner, for many years Aime' Bonpland, a distinguished botanist, who would have a better understanding of the flora. It was this continuous exchange of information and knowledge, plus the interaction with the local people that strengthened von Humboldt's volumes of notes, that allowed him to bring this information together into a much more complete picture of planet Earth. Under the title: *Voyage to the Equinoctial Regions of the Continent* he was able to produce a thirty-four-volume set of books describing his multitude of measurements, 2,000 new plant species, hundreds of animal species, and large collections of minerals, leading to his belief that the earth was one large living organism.

Andrea Wulf has produced a most extensive work describing Alexander von Humboldt, who though almost lost from the history of science, impacted practically every major concept of the natural sciences as we know them today. He was a Prussian naturalist and prophet, who in spite of almost being lost from history by two World Wars in the West, was never forgotten. His written records, describing so many large natural areas of the earth, has made it possible for the scientists of the past 200 years to expand their panoramic view into the concept of ecology, and the world view we have today. Wulf has, in 473 pages, not only produced the written words of von Humboldt describing his travels, his drawings, and his many letters, but she has also included the exchange of letters among he and his many friends, who were the scientists and scholars of his day. And she has gone one important step further. She has included chapters describing the importance of von Humboldt's work on those who followed. People like Charles Darwin, Charles Lyell, Thomas Jefferson, Jules Verne, Emerson, Poe, Aldous Huxley, Ezra Pound, and more recently James Lovelock and Rachel Carson, all of whom were at some point in their lives students of Humboldt. You cannot study the works of John Muir and Henry David Thoreau without recognizing the influence Alexander von Humboldt had on their lives and belief systems.

One chapter in this book, which I have reread several times, brought to light a time line of the early history of conservation in America. This chapter centers on the life of George Perkins Marsh and the impact of Humboldt on his life. In just fourteen pages I came to know Marsh, a name I hardly recognized, as a leader in the education of so many people in the battle to conserve some small part of the United States in the 1800s. Marsh was one of the best-educated and most knowledgeable scholars of this period. Born in 1801, and fifty-eight years old when von Humboldt died, Marsh actually came to know von Humboldt through his publications. It is reported that Marsh had a personal library of more than 5,000 books, with one entire section devoted to the published works of von Humboldt, and that he could read and speak in 20 languages.

Through political assignments and personal contacts, Marsh and his wife Caroline traveled throughout Europe and the Mid-



dle East. It was with this experience he became familiar with the destruction of the soils and the waterways of each country he visited. Although not trained as a naturalist or in the sciences, he could not keep himself from learning the flora and fauna, and recognizing variation and speciation. A perpetual collector of information, by 1860 Marsh had notebooks loaded with information and he started writing his *Man and Nature* in which he began to develop his story describing “the destruction and avarice, of extinction and exploitation, as well as of depleted soil and extreme floods.” Finally in 1864 the book Marsh had wanted to call “*Man the Disturber of Nature’s Harmonies*” was published. Under the influence of von Humboldt, Marsh had become a powerful force for conservation, and through the title *Man and Nature* sent the message to future generations that “All nature is linked together by invisible bonds.” Also, in this book we were first warned that “climatic excess” might lead to the extinction of the human species.

As Charles Darwin read the works of von Humboldt he was so drawn to his descriptions of his travels that he came to realize he must voyage over the natural world, and he volunteered to join the H.M.S. Beagle as the naturalist. Among the several books he took with him on his trip were his Bible, several of Milton’s works, the first volume of Lyell’s *Principles of Geology*, and von Humboldt’s three-volume set titled *Personal Narrative*. It was von Humboldt’s discussion of the “gradual transformation of species” that attracted Darwin’s attention, and allowed him to conceptualize change over time within species. And when Darwin completed his first major publication, *Voyage of the Beagle* in May of 1839, he sent one of the first copies to Humboldt in Berlin and it was extremely well received. Reading this book makes it clear that it was Humboldt’s recognition and explanation of how plants and animals limit each other’s numbers, that challenged Darwin to continue his travels and studies, and that resulted in the publication of *On the Origin of Species by Means of Natural Selection*.

Jack Carter is Professor Emeritus, Colorado College and the author of Trees & Shrubs of Colorado.

Lab Girl
Review by Erin McCaffrey

Lab Girl by Hope Jahren. New York: Alfred A. Knopf, 2016

Lab Girl is part memoir, part rumination on plants. I was immediately drawn in by Jahren’s beautiful writing, which evoked such imagery as I read this book. The book is divided into three sections: Roots and Leaves, Wood and Knots, and Flowers and Fruit. Roots and Leaves explores Jahren’s childhood in rural Minnesota. She grew up spending time in the lab with her father who taught introductory physics and earth science and the local community college. It was clear from a young age that the lab is where Jahren feels most at home. She writes of discerning at the age of five that she was not a boy and “I saw that my brothers...could do all of our laboratory play in the outside



world.” Jahren writes of the cold and darkness of her childhood, both literal and emotional, and leaves high school a year early to accept a scholarship at the University of Minnesota. Once at the University of California Berkeley to begin work on her Ph.D., she meets Bill. Bill becomes her lab partner and best friend, roles he continues to this day.

It is apparent throughout the book that being a female scientist yields its own struggles. “Knowing that I’d have to be twice as proactive and strategic as my male counterparts, I had started applying for professor jobs during my third year and had successfully secured an offer at a quickly growing state university: Georgia Tech.” *Wood and Knots* chronicles the establishment of Jahren’s first lab, at Georgia Tech, and the lushness of plants in the southern United States. Jahren’s descriptions of several field work experiences are both humorous and tender, illustrating how these shared experiences further shape and cement her relationship with Bill. A chapter here wonderfully compares the life of a deciduous tree to the life of an academic scientist. Jahren writes of the struggles of her early years as a professor, the stress of constantly worrying about funding, and the daunting work to establish herself professionally. The reader also learns of her struggle with manic depression.

In *Flowers and Fruit*, Jahren has relocated to Johns Hopkins University where she rebuilds her lab. While in Baltimore she meets her husband. She puts herself on medical leave while pregnant with her son, her pregnancy is full of personal and professional frustrations. After the birth of her son, Jahren finds some struggles become a little easier. She receives both larger grant and private funding and is awarded the Young Scientist Award of the Geological Society of America. These accomplishments give her confidence to take greater risks, and she and her family move to Norway for a year so that she can conduct research on tree memory. Eventually she moves to the University of Hawaii, both her family and Bill in tow. Throughout the book, plants are described with almost human qualities, making them instantly relatable. Chapters depicting the life cycles of plants and trees parallel Jahren’s own development as a scientist. *Lab Girl* ends with Jahren’s request that you plant a tree. - measure it, watch it grow, photograph its development over time. Her honest emotion and passion for her work draws the reader in from the beginning and holds you there until the end.

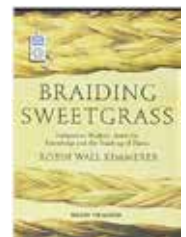
Erin McCaffrey is Digital Initiatives Librarian, Regis University.

**Braiding Sweetgrass:
A Tusk-like Perspective**
Review by Donald Hazlett

Kimmerer, R. W. 2013. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and Teachings of Plants*, Milkweed Editions, Minneapolis, MN.

It is seldom I see a book review about a book I have just read. This happened when I read the recent review of this book by Suez Jacob-

(Continued on page 30)



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Braiding Sweetgrass Review (cont. from page 29)

son (*Aquilegia* 2017; 41 (1): 31-32.) I very much agree with this review, but as I read it I remembered the Indian story of the 5 blind men who touch an elephant from different angles. They conclude: 1) it is like a fan (ear); 2) it is like a wall (side); 3) it is like a rope (tail); 4) it is like a snake (trunk), and 5) it is like a spear (tusk). As an ethnobotanist, my take-home thoughts from Kimmerer's book are analogous to the blind man that touched the spear—a more pointed message.

Robin Kimmerer is a Native American, a member of the Citizen Potawatomi Nation. In this book she tells how her indigenous upbringing did not always mesh with academia. Nonetheless, she prevailed and became a SUNY Distinguished Professor and the founding director of the Center for Native Peoples and the Environment.

She dedicates different chapters in her book to the important connections of plants to her and to her people (i.e. pecans, strawberries, maple, black ash, sweet grass, and others). In addition, she relays her experiences in restoration projects. When employment forced her to move to the Southeast and again to the Northwest, she tells of trips to native areas in efforts to understand different homelands.

One of her most memorable narratives is in the first chapter, where she tells the creation story of Skywoman, a story shared by indigenous peoples throughout the Great Lakes region. Kimmerer relays many details, but at the end Skywoman brought a gift of seeds and instructed the peoples "to use your gifts [seeds] and dreams for good". A garden [earth] was created for the well-being of all. Kimmerer laments that this

story is told as "bauble of colorful folklore". She goes on to compare it with the European story of Eve and banishment from the Garden. In this creation story we are in exile and "...passing through an alien world on a rough road to [our] real home in heaven." Kimmerer's most memorable comment in this regard is that no matter how distant it may be from our consciousness; creation stories inevitably tell us who we are. She explains that these stories are more important to our land ethnic that we realize. She continues by citing Gary Nabhan in that the effort to heal and to restore broken bonds with the land requires both restoration and "re-story-ation."

The Skywoman story is one of many thought-provoking ideas in this very well-written book.

I am able to present only a few of these in this review. I conclude with another quote, a final effort to persuade people to read this inspiring book: "After all of these generations since Columbus, some of the wisest of Native elder still puzzle over the people who came to our shores. They look at the toll on the land and say: The problem with these new people is that they don't have both feet on the shore. One is still on the boat. They don't seem to know whether they're staying or not."

Don Hazlett, PhD, is an ethnobotanist and author of Historia del Jardín Botánico de Lancetilla, Honduras: Noventa años de historia, cuentos y tributos. The History of Lancetilla Botanical Garden, Honduras: Ninety Years of History, Stories, and Tributes. Sida, Bot. Misc. 47. Botanical Research Institute of Texas, Fort Worth, Texas, U.S.A. [available ca. mid-June, 2017 at \$18.95].

2017 Calendar

MAY

May 27, Sat, 7am; Barnroof Point Rambles Field Trip (SW)

JUNE

June 2-5; American Penstemon Society 2017 Annual Meeting, Vernal Utah

June 3, Sat; CoNPS West Slope Festival & Field Trips

June 3, Sat, 7am; Soapstone Prairie Field Trip (N)

June 4, Sunday, CoNPS West Slope Festival Field Trips

June 7, Wed, 5:30pm; City of Lafayette's Two Creeks Open Space Field Trip (B)

June 10, Sat, 8am; CoNPS Denver Garden Tour

June 10, Sat, 8:30am; North Table Mtn Field Trip (MD)

June 10, Sat, 9am; Shortgrass Prairie at Lake Pueblo State Park Field Trip (SE)

June 10, Sat, 10am; Kick-off Native Plant Week (N)

June 11, Sunday, 7:30; Wetlands of the Pawnee Grasslands Field Trip (N)

June 12, Mon, 8:30am; North Table Mtn Field Trip (MD)

June 15, Thurs, 8am; Dunraven Trail: Wildflowers through the Camera Lens Field Trip (N)

June 17, Sat, 8am; Elk Park Knoll on Pikes Peak Field Trip(SE)

June 17, Sat, 9am; Staunton State Park Field Trip (MD)

June 17, Sat, 10am; Pagosa Springs Skyrocket Field Trip (SW)

June 20, Tues, 8am; Hayden/Green Mtn Field Trip (MD)

June 25, Sun; 7am; Lower Dadd Gulch Wildflower Hike (N)

June 25, Sun, 9am; Cottonwood Pass Alpine Flowers Field Trip(SE)

June 25, Sun, 9am; Willows Field Trip (SW)

JULY

July 1, Sat, 8am; Boulder Garden Tour

July 8, Sat, 9am; Ranson Edwards JeffCo Open Space Field Trip (MD)

July 8, Sat, 9am; Anne U. White Sneak Peek Hike (B)

July 9, Sun, 8am; Mt. Silverheels Field Trip (MD)

July 10, Mon, 9am; Carter Lake Field Trip (N)

July 14, Fri, 7am; French Creek and French Pass Field Trip (MD)

July 15, Sat, 8am; Buffalo Canyon Woodlilies Field Trip (SE)

July 16, Sun, 7am; Sulphur Cinquefoil Study & Survey (N)

July 18, Tues, 8am; Treasures of the Ten-Mile Range Field Trip (MD)

July 19, Wed, 9am; Pass Creek Trail Field Trip (SW)

July 21; Fri, 8:30am; Hoosier Ridge West Field Trip (MD)

July 21-23; Eriogonum Society 2017 Annual Meeting, Siskiyou Mtns area

July 22, Sat, 6:30am; Stony Pass Field Trip (SW)

July 22, Sat, 7am; Snowy Range Alpine Field Trip (N)

July 25, Tues, 8:30am; Lower McCullough Gulch Field Trip (MD)

July 28-30, Fri-Sun, CoNPS 2017 San Isabel Forest BioBlitz Leadville CO

AUGUST

Aug 4, Fri; Pass Lakes Field Trip (MD)

Aug 5, Sat, 8:15am; Rocky Mtn Alpine Plants Field Trip (B)

Aug 5, Sat, 8:00am; Ohio Peak Ridge & US Basin (SW)

Aug 5, Sat, 8:30am; Independence Pass Field Trip (SE)

Aug 5, Sat; Thistles of Northern CO Field Trip (N)

Aug 19, Sat, 7am; Sulphur Cinquefoil Study & Survey #2 (N)

Aug 27, Sun, 7:30am; Zimmerman Lake Gentian Hike (N)

SEPTEMBER

Sept 8, Fri, 2017 Colorado Rare Plant Symposium

Sept 9-10, Sat-Sun; 2017 Colorado Native Plant Annual Conference, Colorado Springs

Sept 12, Tues, 6:30pm; Metro Denver Chapter Program

Sept 14, Thurs, 3pm; Boulder Creek Restoration and Reconstruction Field Trip (B)

Sept 15, Fri, 9am; Rocky Mtn Arsenal Nat'l Wildlife Refuge Field Trip (MD)

Sept 17, Sun, 7:30 am; Ecological History of Riparian Willow Communities in RMNP Field Trip (N)

OCTOBER

Oct. 11-12 Natural Areas Assoc. Conference, Fort Collins, CO

Oct 17, Tues, 6:30pm; Metro Denver Chapter Program

NOTE: Events of other organizations (Not CoNPS) are in italics.

KEY

B	Boulder Chapter
MD	Metro-Denver Chapter
N	Northern Chapter (Fort Collins-Greeley-Loveland)
P	Plateau Chapter (Grand Junction and more)
SE	Southeast Chapter (Colo. Springs, Pueblo, more)
SW	Southwest Chapter (Durango and m

SW Chapter Field Trips (Cont. from page 17)

tiny squamulose lichen, Pixie Cups. The latter are very small, relatively common, but rarely seen because of their size and habitat. We will then drive north to Lime Creek and walk a short distance to view rocks with different lichen. Especially interesting are Orange Rock-posie, Firedot, and Sunburst Lichens. The latter two are bright orange.

An informational brochure will be provided and a few hand lenses can be supplied. 4WDHC cars are not necessary. Bring light raingear, lunch, snacks, water, hand lens and a camera or smart phone. Hand lenses are very necessary— features in lichen are small. Limited to 12 people.

To register, email Bob Powell at robertlpowell@durango.net.

Coming Next Year! American Bryological and Lichenological Society 2018 Meeting in Nederland, CO, Aug. 12-16

Location: University of Colorado's Mountain Research Station (MRS) near Nederland, CO

Local host: Erin Tripp (erin.tripp@colorado.edu)



Colorado Native Plant Society

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<http://www.conps.org>

CoNPS Western Slope Festival!

Western State Colorado University Campus in Gunnison

Weekend of June 3-4

Conserving Native Plant Community Biodiversity: Colorado's Western Slope

Botanicum absurdum by Rob Pudim

