**2015 NPSNM Annual Conference, Flora of the High San Juans  
July 16-19, Durango**

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| --- | --- | --- | --- | --- |
| Whether you are old, wise, and leaning on a cane or young, learning, and in new hiking boots; whether you are an avid botanist or budding wildflower lover; whether you like minute details or the broad sweep of things, we have field trips for you in the lush San Juan Mountains surrounding Durango.  Some field trips have little or no walking and some have miles of walking; some trips are all day and some are half day. Some trips are about botanical education; some are about tasting wild plants; some are about keying out plants; all are about bringing you to the beauty of San Juan flora.  Examine the overview to the right, read the trip descriptions below, and find trips that suit your physical ability and flora interests. Be sure to take at least one alpine trip.  After your Friday & Saturday field trips come to Fort Lewis College to marvel at the beauty of botanical illustrations and then be energized by our speakers: John Kartesz, with his unmatched enthusiasm for his 40 year project cataloging all U.S. and Canada plants and David Inouye with his review of 43 years of innovative and revealing research at Rocky Mountain Biological Lab., the world’s premiere high altitude research station.  The semi-annual Board Meeting, open to all members, begins at 1 p.m., Thursday, July 16, [Fort Lewis College, Noble Hall, Room 110](http://video.realviewtv.com/education/flc/?channel=4).  See you in Durango. | **FRIDAY TRIPS** | **Duration of Trip** | **Meeting Time a.m.** | **Miles of Walking** |
| **1** [\*Alpine Placer Gulch](#John) | All day | 6:30 | 1 |
| **2** [\*Alpine Sharkstooth](#Sharkstooth) | All day | 7:00 | 4 |
| **3** [\*Alpine Colorado Trail](#Kennebec) | All day | 7:30 | 0+ |
| **4** [\*Alpine U.S. Basin](#Basin) | All day | 7:30 | 1 |
| **5** [Alpine Pass Creek](#Pass) | All day | 7:30 | 4 |
| **6** [Lizard Head Meadow](#Lizard) | All day | 7:00 | 1+ |
| **7** [La Plata Ethnobotany](#LaPlata) | All day | 8:00 | 0+ |
| **8** [Southwest Seeds](#Seed) | All day | 8:00 | 0 |
| **9** [Chattanooga Iron Fen](#Fens) | All day | 8:00 | ½ - 2 |
| **10** [Old Growth Forests](#Oldgrowth) | All day | 8:30 | 2½ |
| **11** [Edible Plants](#Edible) | Morning | 8:00 | ½ - 1 |
| **12** [Mesa Verde](#Mesa) | Morn/All day | 8:00 | 0 |
| **13** [Durango Gardens](#Gardens) | Morning | 8:30 | 0 |
| 6:00-7:30 p.m. [Botanical illustrations](#Botanical) & 7:30 p.m. [John Kartesz](#Kartesz) | | | |
| **SATURDAY TRIPS** | **Duration of Trip** | **Meeting Time a.m.** | **Miles of Walking** |
| **1** [\*Alpine Placer Gulch](#John) | All day | 6:30 | 1 |
| **2** [\*Alpine Sharkstooth](#Sharkstooth) | All day | 7:00 | 4 |
| **3** [\*Alpine Colorado Trail](#Kennebec) | All day | 7:30 | 0+ |
| **4** [\*Alpine U.S. Basin](#Basin) | All day | 7:30 | 1 |
| **5** [Alpine Pass Creek](#Pass) | All day | 7:30 | 4 |
| **7** [La Plata Ethnobotany](#LaPlata) | All day | 8:00 | 0+ |
| **14** [Alpine Ice Lakes](#Icelakes) | All day | 6:30 | 5 |
| **15** [San Juan Skyway](#Skyway) | All day | 7:00 | 0 |
| **16** [Life Zones](#Lifezones) | All day | 7:30 | 1 |
| **17** [Colorado Trail Flora](#Molas) | All day | 7:30 | 2 |
| **18** [Wildflower Photography](#Photography) | Morning | 8:00 | 0 |
| **19** [Lime Creek Wildflowers](#Limecreek) | Morning | 8:00 | 1+ |
| **20** [Edible Plants](#Ediblepm) | Afternoon | Noon | ½ - 1 |
| 6:30-7:30 p.m. [Botanical illustrations](#Botanical) & 7:30 p.m. [David Inouye](#Inouye). | | | |
| **SUNDAY TRIPS** | **Duration of Trip** | **Meeting Time a.m.** | **Miles of Walking** |
| **1** [\*Alpine Placer Gulch](#John) | All day | 6:30 | 1 |
| **2** [\*Alpine Sharkstooth](#Sharkstooth) | All day | 7:00 | 4 |
| **3** [\*Alpine Colorado Trail](#Kennebec) | All day | 7:30 | 0+ |
| **5** [Alpine Pass Creek](#Pass) | All day | 7:30 | 4 |
| **7** [La Plata Ethnobotany](#LaPlata) | All day | 8:00 | 0+ |
| **21** [Andrews Wetlands/Fens](#Andrews) | Morn/All day | 7:30 | 1 |
| **22** [Native Plants Bears Eat](#Bears) | Morning | 8:00 | 1 |
| **23** [Plant Illustration](#Illustration) | Morning | 8:00 | 0 |
| **24** [Lichens and Mosses](#Lichens) | Morning | 8:00 | 1 |
| **25** [Nature Education](#Naturestudies) | Morning | 8:00 | 0 |
| **26** [How to Make a Park](#Riverparks) | Morning | 8:00 | 1 |
| **27** [Anasazi Ethnobotany](#Anasazi) | Morning | 8:00 | 1+ |
| **28** [Trees of Durango](#Trees) | Morning | 8:30 | 1 |
| Click the blue links in the table at right to read detailed descriptions of each trip. To return to the table, press “Home” or “Ctrl/Home” on your keyboard. | **\***Trips marked with an asterisk have several miles of rough road right before the trailheads. If you sign-up for one of these trips and you own a SUV or truck, please drive it to Durango. Ride sharing will be arranged for those not having a SUV or truck. Regular cars are fine on trips without an asterisk.  Trips with the same number are identical and are offered several days. | | | |



**Field Trips By Categories**

**Alpine/subalpine trips:** Friday: #s 1, 2, 3, 4, 5, 6. Saturday: #s 1, 2, 3, 4, 5, 14. Sunday: #s 1, 2, 3, 5.

**Artistic trips:** There is one photography trip (Saturday: #24) and one drawing trip (Sunday: #18).

**Bear trip:** There is one bears and plants trip (Sunday: #22).

**Driving trip:** There is one car trip through the heart of the mountains over a number of passes on the 235 mile San Juan Skyway (Saturday: #15).

**Edible plants trips:** There are two trips (Friday: #11 & Saturday: #20).

**Education trips:** There are several trips about how to develop plant education through a nature center: There is one trip to Durango Nature Studies (Sunday: #25) and one trip to the Farmington Nature Area/River Walk (Sunday: #26).

**Ethnobotany trips:** There are three trips with Arnold Clifford (Friday: #7. Saturday: #7. Sunday: #7) and one trip to Aztec National Monument (Sunday: #27).

**Green architecture trip:** There is one trip to the new LEED Platinum certified Visitor Center at Mesa Verde National Park (Friday #12).

**Lichens and mosses trips:** There are three trips (Friday: #4. Saturday: #4. Sunday: #24).

**Old growth forests trip:** There is one trip (Friday: #10).

**Seed and garden trips:** There is one trip to learn about a native seed company (Friday: #8), one trip to native plantings at Mesa Verde (Friday: #12), and one trip to learn about Durango gardens (Friday: #13).

**Trees trip:** There is one Durango walking trip to see trees of Durango (Sunday: #28).

**Vegetation zones trip:** There is one trip (Saturday: #16).

**Wetlands trips:** There is one fen trip (Friday: #9) and one varied wetlands trip (Sunday: #21). On almost all other trips, you will visit some wetlands, riparian areas, rivulets, and seeps.

**Introductory Information   
about the 2015 NPSNM Annual Conference**

We look forward to sharing the plants of the western San Juan Mountains with you.  
Expect to be amazed!

If you have any questions about the 2015 NPSNM Annual Conference, feel free to call   
Al Schneider at 970-882-4647.

As you will see from the detailed trip descriptions below, there are trips to meet varied botanical interests and physical capabilities. We trust that you will find many trips to satisfy your preferences.

The focus of all trips is on fabulous flora. Longer mileage trips give you more plants to see and exposure to more varied habitats, but you have less time to focus on individual plants. Lower mileage trips give time for careful analysis of individual plants and more time for photographing, drawing, keying, and sitting still in the silence. Those trips marked as zero mileage give the most opportunity for deep botanizing and also give those who cannot walk far the opportunity of enjoying San Juan flora. On all the zero mileage trips there is the option of walking some distance.

On all longer mileage trips, the upward part of the trip will proceed at a nice walking pace but with enough stops for everyone to catch their breath and view special flora. You will pass many plants without stopping to identify them. On these longer mileage trips we want you to arrive at the highest elevation early enough to avoid lightning and rain. Be assured that on the trip down trail you will move at a snail’s pace with plenty of time to enjoy all the plants.

To make it possible for as many people as possible to enjoy a trip with remarkable Navajo botanist, Arnold Clifford, we are repeating his montane ethnobotany trip each day of the Annual Conference.

To make it possible for as many people as possible to enjoy alpine trips, we are repeating several of these trips each day of the Annual Conference. We do hope that everyone will take at least one of the alpine trips to revel in the beauty of over 100 species in abundant flower fields.

**Our Guest Speakers**

Talks begin at 7:30 p.m., Room 130, Noble Hall, Fort Lewis College.

**Friday: John Kartesz** earned his Ph.D. in Botany from the University of Nevada, Reno with his dissertation, The Flora of Nevada. He then worked for nearly fifteen years at the North Carolina Botanical Garden. From his earliest days as a volunteer at the Carnegie Museum, he began an effort to catalogue and describe the North American Vascular flora. In 1980 he completed the first “Synonymized Checklist of the United States, Canada, and Greenland”, and this Checklist was updated and expanded in 1994 into his widely-used second edition. In 1999, he published the “Synthesis of the North American Flora”, which was the first attempt to provide a state-level atlas and accompanying morphological database for all known North American vascular plants.

In 2010, John published on-line his “North American Plant Atlas”, showing county-level distributions for vascular flora. John is currently producing the first internet-based “Flora of North America”, one that will incorporate high-tech applications. Additionally, John has authored numerous books and scores of scientific articles and has earned various awards for his scientific contributions.

See <http://www.bonap.org/> .

**Saturday:** **David Inouye** is a researcher at the Rocky Mountain Biological Laboratory (near Crested Butte, Colorado), where he has conducted research during the summers since 1971. His work there has included studies of hummingbirds, bumble bees, pollinating flies, ant-plant interactions, plant demography, and flowering phenology. His study of the phenology and abundance of flowering by 120 species of wildflowers was initiated in 1973. It is supported by the National Science Foundation and provides one of the longest continuous records of how flowering is responding to climate change and how those changes are affecting interacting species such as pollinators.  
  
David just retired from the University of Maryland, where he taught classes in ecology and conservation biology and started and directed for 20 years a graduate program in conservation biology. He is on the advisory board for the USA National Phenology Network, President of the steering committee of the North American Pollinator Protection Campaign, a member of the Roundtable on Public Information in the Life Sciences (National Academy of Sciences), and President of the Ecological Society of America. He enjoys photographing wildflowers and pollinators, white-water rafting, and hiking in the mountains.

See <http://biology.umd.edu/faculty/davidwinouye> and <http://www.rmbl.org/> .

**Botanical Illustrations**

On **Friday evening**, July 17, 6:00 p.m. to 7:30 p.m., come to The Center of Southwest Studies at Fort Lewis College for a display of delicate botanical illustrations of rare plants. Three of the illustrators will be in the display area to discuss the botanical illustrations with you. Prints will be for sale.

On **Saturday evening** from 6:30 to 7:30 p.m. in Noble Hall, Room 130, the same room where David Inouye will talk to us at 7:30 p.m., we will also have botanical illustration prints to view and buy from the artists.

The art of botanical illustration is centuries old and has had a resurgence in recent decades. See the American Society of Botanical Artists at <http://www.asba-art.org/> and the Rocky Mountain Society of Botanical Artists at <http://rmsbartists.blogspot.com/> .



**Annual Conference Details**

**Registration** will be open April 1 to July 1. There is no registration after July 1 and no registration in Durango; our wonderful volunteer registrar is going backpacking! The registration fee is $50 from April 1 to June 15, $60 from June 15 to July 1. Your first 2015 Annual Conference activity will be your first field trip Friday morning.

**Durango Tourism:** Office at 802 Main Avenue Durango, CO 81301, 800-463-8725. Request “Southwest Colorado Summer Guide, 2015” or save paper by looking at [www.durango.org/](http://www.durango.org/) .

**Lodging:** Victorian hotels: Strater, Palmer, & Rochester. Riverfront motels: Double Tree & Downtown Inn. Compare motels on-line at Trivago, Priceline, Hotelguides, & Expedia. There are no motel group discounts available because July is high season. Lower priced motels are north on Main. All motels are within 10 minutes of downtown, Fort Lewis College, and field trip meeting areas.

**Best lodging deal:** $58 for two in a Fort Lewis College campus apartment with 2 bedrooms, kitchen, living room, and full bath. Call Gregg: 970-247-7372.

**RV and tent camping** areas are available within minutes of town.

**Tips for navigating Durango:**

1) Highway 160 comes to Durango from the west and merges with Highway 550 on the west side of Durango.

2) Highway 160 coincides with Highway 550 from Durango eastward until 550 turns south to New Mexico and 160 heads east across Colorado.

3) In Durango, Camino del Rio (aka Highway 550) becomes Main just north of downtown when the two roads merge. On the south side of town, Camino del Rio (aka 550/160) becomes South Camino del Rio.

4) Highway 550, Camino del Rio, Main, and all “Avenues” run north-south. College Drive and all “Streets” run east-west.

**Finding and navigating Fort Lewis College:** From College Drive, follow 8th Avenue northward as it switchbacks up to the campus. Then follow the NPSNM signs. [Click for a Fort Lewis College map.](http://video.realviewtv.com/education/flc/?channel=4)

**Dining: Breakfast:** [Click for a map](http://bit.ly/1x56ReR). Local favorites: 1) Open 6 a.m. "Oscar’s Cafe", 18 Town Plaza, Just off Camino del Rio in the South City Market shopping center. 247-0526.

2) 6:00 a.m. "Cj’s Diner", 810 East College Drive. 375-0117 Closed Sunday.

3) 6:30 a.m. "College Drive Cafe", 666 E. College Dr. 247-5322.

If you do not have time for a sit down breakfast, order to go and enjoy it as you ride to the trailhead.  
  
**Lunch:** Buy field trip lunchesthe night before each trip or bring them from home. Three convenient markets are open 6:00 a.m. to midnight with made-to-order sandwiches**:** **Albertsons:** Highway 550 at College Ave. **City Market:** Highway 550 at 9th St. and Highway 550 at 32nd St.

**Other groceries:** **Durango Co-op**: College & 8th; **Natural Grocers:** 1123 Camino del Rio; **Nature’s Oasis:** 300 S. Camino del Rio.

**Dinner:** There are many excellent restaurants in Durango. Recommendations for restaurants (coffee shops, art galleries, book stores, etc.) can be found by [clicking the “Best of Everything in Durango”](http://www.swcoloradowildflowers.com/PDF/Plant%20Lists/BestinDurango.pdf).

**What will the July weather be like?** In Durango expect a high of 85° and a low of 55°. Alpine temperatures will be about 47° in the early morning and about 70° in the afternoon. Rainfall is usually limited to passing p.m. thunderstorms. Breeziness is possible on the alpine trips.

**What about bugs & bears, oh my!** Bugs will be few and far between. Bears, none.

**Preparing for your field trips:** Usually the sun will be so brilliant and warm that you can be in shorts and a short-sleeved shirt, but since high altitude temperatures drop precipitously when clouds block the sun, and since July is afternoon thundershower season, be prepared. In your day pack bring: thin gloves, fleece cap, and polyester shirt and/or jacket. Also bring day trip standards: shade hat, sunglasses, two liters of water, lunch, snacks, lip balm, and **top and bottom rain gear.** Always bring rain gear, no matter what the weather report is, no matter how sunny the Durango skies are. Boots are best for most trips, even those with little or no walking.

**Want to spend more time with the flowers and less time standing around at the trailhead?** Before you leave your motel for your field trip, have all of your gear in one pack and your boots and sunblock on.

**Driving to field trips:** You will really enjoy the drive to your field trips along the “San Juan Skyway”, one of the world’s most scenic roads.

At the carpool meeting area, trip leaders will determine which cars are needed. Please fill your gas tank the night before each trip and have your car ready to seat 4-5 people.

**Sharing driving costs:** We want to be sure that if you are a carpool driver, you are properly compensated. Everyone should **bring cash to compensate drivers (including trip leaders, if they drive), 40¢ per mile split among the passengers.** For example, for a 100 mile round trip, the driver should be compensated a total of $40 by the passengers. Since actual driving costs are more than this (the federal reimbursement rate is 56.5¢/mile), drivers are also paying their share.

**Taking few cars:** To reduce our environmental impact, to promote socializing, to save time, to fairly compensate drivers, and to reduce costs for passengers, we will take 4-5 people per car and the fewest number of cars possible on each trip.

**On your field trips:** Please follow NPSNM field trip guidelines as set forth on pages 7 & 8 at [www.npsnm.org/wp-content/uploads/2012/03/Final-Revised-Statment-of-Policies-in-Effect-2012.pdf](http://www.npsnm.org/wp-content/uploads/2012/03/Final-Revised-Statment-of-Policies-in-Effect-2012.pdf) .

**Purchase a $3 Colorado Search and Rescue Card:** Your chance of getting lost on a NPSNM trip or having a backcountry injury that necessitates evacuation is small**,** but the costs of search and rescue are very large. Protect yourself for $3 by purchasing the rescue card: <https://dola.colorado.gov/sar/orderInstructions.jsf> .

**We will have everyone back in Durango by about 4 p.m.** in time for a shower and dinner before the evening program. Durango restaurants are busy, so go out to eat early, or, for a quick $10 cafeteria meal, eat at the Fort Lewis College Union. No reservations needed. After dinner walk one building north to Noble Hall for the evening speaker program.

**No pets on field trips. Pet Care:** Cindy Ortman: 970-385-4388.

**Cell phones:** As a courtesy to the flowers, your trip leaders, and trip participants, please do not make or receive calls or texts during or on the way to and from trips. Cell coverage will not exist on most trips.

**Emergency Health Care:**

**1) Durango Urgent Care:** 2577 Main Ave. 9:00 a.m. to 7:00 p.m. 970-247-8382.

**2) Animas Urgent Care:** 450 S. Camino del Rio. 8:30 a.m. to 7 p.m. daily. 970-385-2388

**3) Emergency Department, Animas Surgical Hospital:** 575 Rivergate Lane, off Colo. Highway 3. 970-247-3537

**4) Mercy Regional Medical Center Hospital:** Take 550/160 south/east. Stay on 160 east. 7 miles. 970-247-4311.

**Plant Lists:** See the field trip descriptions below for plant lists. Print the lists and enjoy keeping a record of what plants you find on your field trips. [Click here to see photos and descriptions](http://www.swcoloradowildflowers.com/) of the plants on your lists. Plant names on most lists are in accord with modern genetic findings; plant names in most floras listed immediately below are not. Come prepared for several botanical languages, even the language of common names! Being multilingual is mentally invigorating.

**Books on San Juan Flora:**

**1) Very special:** Zwinger and Willard, Land Above the Trees. A naturalist’s guide to alpine flora & fauna. Superb text, many drawings. No keys. Beautifully written. A book for all of us.

**2) Books for avid botanists** comfortable with botanical terminology:

a) Heil & O’Kane, Flora of the Four Corners Region. Keys, descriptions, drawings, photos.

b) Ackerfield, Flora of Colorado. Keys, descriptions, range maps, drawings, photos.

c) Weber & Wittmann, Colorado Flora: Western. Keys, some drawings. Complex.

**3) If you are more comfortable with keys written with non-botanical terminology:**

Komarek, Flora of the San Juans. Drawings, small photos. **Best buy.** Purchase from 719-657-9086.

**4) If you want flower photo books:**

a) Huggins, Wild at Heart. Colorado book award. Wildflowers, birds, mammals. Excellent photos and text. Also by Huggins: Wildflowers of the Southern Rocky Mountains. $8 laminated, fold-out pamphlet of photos. Both of Huggins’ works are available from her at 970-379-1151.

b) Anderson, et al., Wildflowers of the Mountain West. Spiral bound, range maps, many photos.

c) Craighead, Field Guide to Rocky Mtn. Wildflowers. 1963. An old, unmatched standard.

d) Niehaus, Southwestern and Texas Wildflowers. Peterson Field Guide series (as is Craighead above).

**Flora app:** Schneider, “Colorado Rocky Mountain Wildflowers”. 600 plants, foothills to alpine. Multiple photos of each plant, range maps, fun to use key. Free demo and full version are available at [www.highcountryapps.com](http://www.highcountryapps.com) . The app covers flora we will see on our field trips & the flora of the Rocky Mountains in general.   
  
**Hand Lens:** It is always a learning thrill to examine plants with a 10x hand lens. Bring one with you. Favorite lenses, each at about $36: 1) Belomo 10x and 2) Bausch & Lomb’s Hastings Triplet 10x. There are many other hand lenses to choose from for $5 and up.

**Touring the Durango area:** We hope you will be able to stay longer than the three days of the Annual Conference, for there is [much to enjoy in Durango and the surrounding Four Corners area](http://www.swcolotravel.org/). In Durango be sure to walk the Animas River Trail. Thrill at the sight and sound of the train. Take a bus to great restaurants. Enjoy a horseback trip.

[**Click to read about**](http://www.redwoodllamas.com/) a once in a lifetime, July 13-16 llama trip to the best wildflower displays.

****There are many more highlights in the Durango area: the San Juan Skyway, Durango-Silverton Railroad, Mesa Verde National Park, Ute Tribal Park, Durango’s “Music in the Mountains”, Telluride festivals, and several million acres of Forest Service, BLM, and National Park lands, including the 500,000 acre Weminuche Wilderness Area immediately adjacent to Durango.

**What should you do if you need assistance in Durango?** Call us for help! Jim Shadell (970-769-3772) and Gail Schutz (970-946-5234) will be available July 16-19 to answer your questions about which field trips you are signed up for, where to meet for field trips, where to eat, how to navigate Durango, and anything else you need.

**DETAILED FIELD TRIP DESCRIPTIONS**

**In the field trip descriptions below,   
“Miles to trailhead” refers to the one way distance from the Durango meeting area to the trailhead.   
“Meeting time” is the time for you to meet in Durango for carpooling to your field trip.**

**Your registration confirmation will indicate where to meet in Durango for carpooling.**

**\*An asterisk** **indicates that there are a few miles of rough road at the end of your drive to the trailhead for these alpine trips, and therefore we need several high clearance, 4 wheel drive, SUVs or trucks on these trips. If you plan to go on an alpine trip marked with an asterisk and you own such a vehicle, please drive it to Durango. Ride sharing will be arranged for those not having a SUV or truck.**

**Regular cars are fine for field trips without an asterisk.**

**See http://**[**www.swcoloradowildflowers.com**](http://www.swcoloradowildflowers.com) **for photographs of and descriptive material about the plants you will see on all field trips.**

**If a field trip description below does not have a link to a plant list, run off the lists for field trips 1, 3, & 21. These lists will give you the names of plants you will see on almost all trips.**

**Friday Field Trips**

**\*1 Placer Gulch Alpine Flora**  
**Name of leader:** John Bregar  
**Number of miles walked for the entire trip:** 1  
**Starting elevation:** 12,750′  
**Elevation gain on trip:** 200′  
**Meeting time:** 6:30 a.m.  
**Miles to trailhead & duration of trip:** 65 miles. All day.  
[Click for Placer Gulch Alpine Flora plant list](http://www.swcoloradowildflowers.com/PDF/PlantLists/2015FieldTrips/PlacerGulchPlantList.pdf).

On this field trip north of Silverton, we will visit several alpine habitats, including meadows and turfs, fellfields, snowbed communities, talus and scree fields, boulder fields, and even some rock outcrops, all supporting a different mix of plant species.

Driving first up to a high exposed ridge at 12,750 feet elevation (ignoring many beautiful plant communities in full flower along the way -- we’ll come back to them later!), we will examine the plants of a windswept fellfield and snowbed community. After a couple of hours or so there, we will drive slowly back the way we came; stopping at several places to look for additional species in other habitats; taking time to enjoy a longer walk through lush meadows, wetlands, and streamsides (among other habitats) at about 12,000 feet; and then working our way down to a final stop at about 11,600 feet, just above timberline, where subalpine species sneak into the alpine flora.

Expect to encounter over 125 species of alpine plants.

Because our driving route provides access to various alpine habitats close to the road, we will minimize walking and maximize our time with the plants. Our pace will be leisurely, and we are not likely to wander much more than a couple hundred yards from the vehicles.

All levels of botanists are welcomed.

Trip leader John Bregar worked as a geologist and geophysicist in oil and gas exploration for 32 years. Besides botanizing, he enjoys mountain climbing and bird watching, and he is an active member of the Seniors Outdoors! hiking club, the Colorado Mountain Club, the Durango Bird Club, and the San Juan Chapter of the Native Plant Society of New Mexico. He has led wildflower trips, birding trips, and hiking and mountain-climbing trips for many years.

**\*2 Flora of the Sharkstooth Trail**  
**Name of leader:** Betty Schneider  
**Number of miles walked round trip:** 4  
**Starting elevation:** 11,000′  
**Elevation gain on trip:** 1,000′  
**Meeting time:** 7 a.m.  
**Miles to trailhead and duration of trip:** 44 miles. All day.  
[Click for Sharkstooth Trail plant list](http://www.swcoloradowildflowers.com/PDF/PlantLists/2015FieldTrips/SharkstoothPlantList.pdf).

The subalpine/alpine trip to the Sharkstooth saddle is designed for folks of all levels of botanical interests who are physically able to hike at higher elevations with deep breathing elevation gain. The trip starts with a very scenic drive to the Sharkstooth trailhead with mountain peaks getting closer and closer on each view. The trail starts gently and we will take sufficient breaks to catch our breath and view special plants, but we won’t examine plants in great detail; that we will save for the trip back down.

The trail is intersected by numerous rivulets as it meanders up switchbacks through a beautiful spruce forest at the base of a massive rock glacier. After 1½ miles we will reach tree line and ascend eight switch backs through dozens of species of alpine flowers including the abundant and sweet smelling Alpine Phlox (*Phlox condensata*). When we reach our high point of 12,000 feet at Sharkstooth saddle with magnificent views of the San Juans, we will be on well-flowered alpine tundra surrounded by towering walls of scree. We will have lots of time to enjoy the alpine flora (look for *Castilleja haydenii*) before very slowly heading back through the forest to spend time viewing the wonderful variety of subalpine flora that we passed on our trip upward.

Trip leader Betty Schneider is an avid wildflower observer, who has a good knowledge of the flora through many journeys in the mountains over the 18 years she has lived in the western San Juans. Betty was a special education teacher and firefighter/paramedic and still enjoys teaching CPR and First Aid. She is also a passionate beader and knitter.

**\*3 Alpine Flowers of the Colorado Trail**  
**Name of leader:** Al Schneider  
**Number of miles walked:** 0   
**Starting elevation:** 11,650′  
**Elevation gain on trip:** 0′  
**Meeting time:** 7:30 a.m.  
**Miles to trailhead & duration of trip:** 26 miles. All day.  
[Click for Alpine Flowers of the Colorado Trail plant list](http://www.swcoloradowildflowers.com/PDF/PlantLists/2015FieldTrips/KennebecPlantList.pdf).

This trip to the Colorado Trail at Kennebec Pass is for folks of all physical abilities and all levels of botanical interests. Our approach to our wildflower fields will be a scenic ride in the deep canyon of the La Plata River. We will ascend 4,000 feet and park right at alpine wildflower meadows where, within a few feet of the cars, we will spend time enjoying and identifying a myriad of plants. For those who want a walk of several hundred yards, we will stroll along an almost level trail, stopping frequently to look at many new species in new habitats: rivulets, dry hillsides, and fellfields. We will return to the cars for lunch and then have an optional mile stroll to Taylor Lake and wetlands along a gently sloping trail through new habitats with many species that we did not see in the morning meadows.

Throughout the day, we will move at a crawling pace so we can thoroughly enjoy the wide variety of plants and the fabulous scenery above treeline. There will be time for very leisurely photographing, drawing, keying out plants, using a hand lens, asking questions, waxing philosophical, and sitting still in the silence.

Trip leader Al Schneider is the author of [www.swcoloradowildflowers.com](http://www.swcoloradowildflowers.com) and the app, “[Colorado Rocky Mountain Wildflowers](http://www.highcountryapps.com)”. In his work life (long ago) Al was an English Professor, the designer of the Ozark Trail with Missouri State Parks, a backcountry guide, and a teacher on the Ute Mountain Ute Indian Reservation. Al is President of the San Juan Chapter of the NPSNM and leads many wildflower trips each summer.

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**\*4 Alpine Flowers of U.S. Basin**  
**Name of leader:** Bob Powell  
**Number of miles walked round trip:** 1  
**Starting elevation:** 12,150′  
**Elevation gain on trip:** 60′   
**Meeting time:** 7:30 a.m.  
**Miles to trailhead & duration of trip:** 60 miles. All day.

This trip is located in one of the most colorful flower fields in the western San Juan Mountains. There are many opportunities for excellent flower, scenery, and combined photos. The trip begins with a short visit to an alpine area with riparian, fellfield, and dry meadow habitats and spectacular views of the eastern San Miguel Mountains. A special plant here is the tiny Pygmy Bitterroot.

We then move to a nearby hill with a fellfield habitat that has many scattered colorful flowers, especially sunflowers, penstemons, paintbrushes, and the delicate Fairy Candelabra. The next habitat is a riparian rivulet strip with Yellow Monkeyflowers, followed by a small waterfall with Brook Saxifrage and other spray-loving plants. Below those sites are two basin fens with Marsh Marigolds. We will return to the starting point to have lunch while overlooking the basin. The easy morning walks have an elevation change of only 60 feet.

A printed handout will describe the geology and weather and how they affect the landforms, soil development, habitats, and ultimately the number of plant species and their abundance.

After lunch we cross toward the center of the basin, walking just below small cliffs and next to a talus slope to view plants in those habitats. We will stop briefly at the bottom of the talus field to observe and photograph the extensive fields of yellow and purple sunflowers below us. Some trip participants may wait there by an elk trail; others will take a 0.2 mile loop walk (with only 40 feet elevation change) to view a willow carr and fields of Elephant Heads. From the elk trail, we have an easy, off-trail, half-mile walk downhill, beginning on a dry meadow strip with wet meadow flower fields and fens on both sides. After 160 yards, we walk thru a spruce forest to view forest plants growing near treeline and then reenter the open basin and walk by a linear fen to our shuttled cars at an elevation of 11,520 feet. The very leisurely afternoon walk has about 40 feet uphill and 340 feet downhill, mostly off-trail thru grassy meadows. On the way back to the highway, we will stop to view a mossy seep with Bog Orchids.

Trip leader Bob Powell spent most of his childhood in Denver and adult life in Boulder. He received a B.S. and M.A. from the University of Colorado and a D.Phil. from the University of Cambridge, England, all in physics. He worked at the National Bureau of Standards on thermocouple thermometry and properties of solids at very low temperatures. While in Boulder he helped Bill Jennings with the winter courses given by the Colorado Native Plant Society (CoNPS), obtaining specimens and photos of relevant plants the summer before the courses. Bob collected and labeled many county-record specimens for the herbaria at the University of Colorado and the Denver Botanical Gardens. One of Bob’s recent interests has been tropical plants, especially those in the mist forests, cloud forests, and páramo (above tree line) in the Andes of Ecuador. Bob has made about 500 scuba dives, mainly in the southwest Pacific, to view and photograph very colorful invertebrates and fish. Bob is on the Board of Directors of NPSNM and CoNPS. At 87, Bob is our senior trip leader.

**5 Pass Creek Trail Wildflowers**  
**Name of leader:** Travis Ward  
**Number of miles walked round trip:** 4  
**Starting elevation:** 10,700′  
**Elevation gain on trip:** 1,000′  
**Meeting time:** 7:30 a.m.  
**Miles to trailhead & duration of trip:** 34 miles. All day.

The Pass Creek Trail is the best local trail for viewing an abundance of wildflowers. We should see over 100 species in bloom! We will move up trail with some speed, but walking slowly enough so that we are comfortable breathing. We won’t stop to ID and admire all the species – that we will save for the way back down the trail. We want to be sure to get to the alpine flowers before lightning storms make the alpine area too dangerous. On the trip back down the trail, we will move at a snail’s pace and try to observe and talk about as many species as we can find.

For the first ¼ mile the trail passes through a heavily vegetated sloped meadow with a huge variety of flower species. The trail then winds through a subalpine forest with numerous unique ground environments, each with its own variety of plants. At about a mile there is a pond and boggy area that will add to our specimen list. Beyond the pond, the trail meanders upward through forest flowers to carpets of flowers in open meadow. Just beyond tree line the views are long and the carpets of flowers are extensive.

This wildflower walk is not designed for classification discussions. Plants will be identified primarily with common names.

Trip leader Travis Ward has a B.S. in Education from the University of Colorado and a M.A. in Natural Science from San Jose State College. Most of his teaching career was in various sciences at Durango High School. He is a 45 year resident of Durango and an outdoor lover spending a good deal of his time hiking in the backcountry.

**6 Flora of Lizard Head Meadows**  
**Name of leader:** Connie Colter  
**Number of miles walked round trip:** 1+  
**Starting elevation:** 10,300′  
**Elevation gain on trip:** 100′  
**Meeting time:** 7:00 a.m.  
**Miles to trailhead & duration of trip:** 96 miles. All day.

Although 96 miles might seem like a long drive to start a wildflower day, I guarantee that you will love the 1½ hour drive along the San Juan Skyway from Durango across the La Plata Mountains, past Mesa Verde, and then through the Dolores River Canyon to the headwaters of the Dolores River beneath the 13,000 foot Lizard Head monolith.

We will start our flower exploration at the top of Lizard Head Pass in the beautiful subalpine meadows that are nestled between Blackface and Sheep Mountain with a number of 13,000 foot peaks watching us. It is here that the headwaters of the San Miguel and Dolores Rivers divide in a wide open expanse of beautiful views and diverse plant habitat.

Until 1952 the highway, now the San Juan Skyway, was used by the Rio Grande Southern Railroad and a rest stop where we start our wildflower trip at Lizard Head Pass tells the story.

We will spend the morning meandering along a gentle trail, looking closely at and identifying the incredible number of flower and grass species that thrive on the south facing slope. Sunny meadow plants will alternate with riparian species when we cross two tiny rivulets and in really wet years these give us some surprises! We will also cross an outcrop of Mancos Shale with its unique plant community.

We will eat lunch in the shade and coolness of an evergreen forest where we will step into new habitats with unique flowers. What will be blooming along quiet streams, or clinging to the rocky garden walls, or finding refuge and nutrients under giant spruce and fir trees?

Throughout the day there will be time to rest, ask questions, and share stories and knowledge and there will be time to pause and look up at the fabulous peaks that surround us and the birds and butterflies thriving on the plants.

Trip leader Connie Colter has been living in and hiking the wildflower trails of the Telluride area for 35 years. She owns Canyon Flower Farm, is a certified Native Plant Master trainer, and has spent time during the last 4 years teaching native plant education courses and leading wildflower walks with Colorado State University’s Master Native Plant program in San Miguel County and the San Juan/Four Corners Native Plant Society. Connie loves to help others see so clearly the unique beauty and place of a living thing in the natural world, and then to know the name.

**7 La Plata Canyon Montane Ethnobotany  
Name of Leaders:** Arnold Clifford, Ken Heil and Don Hyder  
**Number of miles walked round trip:** 0+  
**Starting elevation:** 8,725′  
**Elevation gain on trip:** 100′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead and duration of trip:** 15 miles. All day.  
[Click for La Plata Canyon Montane Ethnobotany plant list](http://www.swcoloradowildflowers.com/PDF/PlantLists/2015FieldTrips/LaPlataCanyonPlantList.pdf).

La Plata Canyon is very scenic with high peaks soaring above La Plata Creek, numerous side rivulets, rich montane forests, and a kaleidoscope of mountain meadow wildflowers. Throughout the day, Arnold Clifford will fill us in on the geology of the La Plata Mountains and the Navajo uses of various plants. The plant communities we will visit include: Ponderosa Pine-Gambel Oak, White Pine, Douglas-fir, Engelmann Spruce, and Corkbark Fir, montane meadows, and riparian.

We will drive up the La Plata Canyon all weather gravel road, stopping at a half dozen or so special habitats to wander around finding new species at each stop. We will always be moving at a slow pace and enjoy a wide variety of plants and beautiful scenery. There will be plenty of time for photographing, keying out plants, asking questions, and relaxing.

Besides a high diversity of flora, La Plata Canyon has a very rich mining history including ghost towns (mostly ruins), abandoned mines, old cabins, and other mining remnants.

Trip leader Arnold Clifford is a Navajo Nation botanist and a contributing author to Flora of the Four Corners Region. Arnold has a vast knowledge of Navajo ethnobotany and geology of the Four Corners. He has led numerous fieldtrips in the Chuska and Carrizo Mountains, Navajo Nation.

Trip leader Ken Heil is curator of the San Juan College Herbarium and lead author of the [Flora of the Four Corners Region](http://www.phytoneuron.net/2013Phytoneuron/94PhytoN-4CornersReview.pdf). He received a B.S. from Fort Lewis College and a M.S. from Washington State University. Ken has taught at Farmington High School, Diné College, and is Professor Emeritus at San Juan College. Ken is currently working with Steve O’Kane and Patrick Alexander on a flora of New Mexico to be published by Missouri Botanical Garden.

Trip leader Don Hyder is a professor at San Juan College where he teaches horticulture and biology classes. Don received a B.S. from New Mexico State University, M.S.T. in biology from Tarleton State University, Texas, and a Ph.D. in entomology from North Dakota State University. He is currently doing research on *Lycium* (Wolfberry).

**8 Behind the Scenes of the Native Plant Seed Industry**  
**Name of leaders:** Walter and Robby Henes  
**Number of miles walked round trip:** 0  
**Starting elevation:** 6,200′  
**Elevation gain on trip:** 0′  
**Meeting time:** 8:00 a.m.  
**Miles to tour & duration of trip:** 45 miles to trailhead. All day.

Have you ever wondered where your lovely garden natives came from? What do all those numbers on a seed label mean? What does “native” mean anyhow? Come find some answers. For the backyard, the 30,000 acre wildfire reclamation project, and the gas pipeline, the necessary species need to be available in order to continue maintaining our native landscapes. The folks at Southwest Seed help guide, educate, and provide seed for the native seed needs of the Southwest.

Southwest Seed (SWS), with over 35 years of experience, is the Four Corner’s only native seed farm and warehouse providing native grasses and wildflowers to aficionados, the government, and industry. On this field trip you will learn about the production side of native plants. Walter and Robby will tell about how the world of native seeds has developed over the years.

You will get the opportunity to see the cleaning process for newly harvested seed, check out how we make custom mixes, and visit production fields to see the farming side of the operation. We will discuss the native seed industry and how seed is evaluated for quality. You will have plenty of opportunity to ask questions and learn from the experts about how to get native grasses and wildflowers established.

Schedule: Meet at 8:00 a.m. in Durango to carpool to Cortez where you will meet at the Southwest Seed processing facilities for a brief introduction and overview of the tour day. At ~10:00 a.m. you will arrive at the Southwest Seed Farm south of Pleasantview for a tour and then return to Cortez for lunch (that you bring or eat at a local restaurant). From ~2 –3:00 p.m. tour the native seed processing facilities. Return to Durango by ~4 p.m.

Walt Henes started SWS in 1978 when the Conservation Reserve Program was just getting started; today his son, Walter, and daughter, Robby, continue the business.

Trip leader Walter Henes received his B.S. in Range Sciences from Colorado State University, spent time as a field inspector for the Colorado Seed Growers, and finally returned to farming. Walter is now an expert in the fine art of working with native plants -- as much as anyone can be an expert, considering that plants speak their own language and deciphering their needs is complex. Walter has been the President and Production Specialist for Southwest Seed for more than 25 years. When he is not farming, Walter enjoys the high mountains and canyon country of the Southwest and is often checking out isolated ruins, local ghost towns, good fly fishing streams, and interesting flora of the Southwest deserts.

Trip leader Robby Henes got her B.S. in Marketing from Colorado State University and M.S. in International Agriculture Development from the University of California, Davis. After working abroad in Refugee Aid for more than 15 years, she returned to Colorado in 2005 to the management and operations of Southwest Seed. Funny there is very little difference and a world of difference between the needs of people in Indonesia or Eritrea and the needs of farmers and reclamation experts in the U.S. When Robby is not making seed mixes, she enjoys the vast array of information to be absorbed in making an energy efficient, paper-crete home, serving on local boards, and being a member of Onward! A Legacy Foundation.

See <http://www.southwestseed.com/> .

**9 Ecology and Restoration of Iron Fens**  
**Name of leader:** Mountain Studies Institute Staff  
**Number of miles walked round trip:** ½-2  
**Starting elevation:** 10,200′  
**Elevation gain on trip:** 100′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 60 miles. All day.

Join Mountain Studies Institute (MSI) for a botanical tour of the Chattanooga rare iron fen site that is undergoing active restoration by MSI in partnership with Durango Mountain Resort, U.S. Forest Service, National Forest Foundation, and Dr. Rod Chimner of Michigan Technological University.

We will discuss what makes an iron fen and introduce participants to hydrologic concepts that make fens exceptional ecosystems. We will also have an opportunity to find some of the flora unique to fen habitats, which will dovetail with a conversation about the impacts humans have made on these fragile habitats and the subsequent process and challenges with restoration efforts. Chattanooga fen was severely impacted by human activity during the first half of the 20th century.

Chattanooga Fen is quite large, and we will have a chance to tour the site and search for bryophyte and vascular plant species. Some of these species are mostly endemic to the Boreal forests of the far north, but they are found also in relic populations in our San Juan high elevation fens.

Finally, we will teach participants some hands on fen restoration techniques. This activity is dependent upon our summer restoration schedule, but you probably will have the opportunity of getting dirty, by helping transplant sedges or possibly constructing a ditch plug. If you would like to fully participate in transplanting (as well as seeing close-up all aspects of the fen), wear waterproof boots and old clothes.

This trip will be led by one of MSI’s knowledgeable and enthusiastic staff, probably Anthony Culpepper, who is a Research Associate and Field Manager for MSI. At MSI Anthony is working on the development of a long term, citizen science based protocol for monitoring forest health in the Ponderosa forests near Pagosa Springs, fine tuning the locations of watershed hotspots via geospatial analysis for the Lower Animas River, and managing some of the restoration efforts for MSI’s continuing fen projects.

Anthony graduated from Prescott College with degrees in Conservation Biology and Wilderness Leadership. Long before his time at Prescott, he began his professional life as an engineer. Anthony’s long distance walks (including the Pacific Crest and Continental Divide Trails), drew him away from engineering and to the world of ecology and natural history. Anthony hopes soon to start a Ph.D. program in ecology so he can delve into questions revolving around genetic variation in conifer populations and resistance to disease. When not collecting data from the amazing landscapes of the San Juan Mountains, Anthony can be found avidly pursuing ultra-marathon running or backcountry skiing.

MSI was established in 2002 with the mission of enhancing understanding and sustainable use of the San Juan Mountains through research and education. MSI uses state-of-the-art science and education because the San Juan Mountains are the communities’ greatest asset. MSI engages stakeholders, galvanizes resources, actuates science, and shares findings, connecting scientists and stakeholders across the San Juan Mountain region. MSI goes beyond scientific inquiry to the meaningful application of science that makes a difference for the betterment of the San Juan Mountains’ environment and mountain systems.

See “San Juan National Forest Botanical Survey of Fens”: <http://www.cnhp.colostate.edu/download/documents/2007/SJNF_Botanical_Survey_of-Fens.pdf> .

**10 Old Growth Forests**  
**Name of leader:** Laurie Swisher  
**Number of miles walked round trip:** ~2.5  
**Starting elevation:** 7,800′  
**Elevation gain on trip:** 200′   
**Meeting time:** 8:30 a.m.  
**Miles to trailhead & duration of trip:** 16 miles. All day.

This trip begins at the Lower Hermosa Creek trailhead and follows the trail into the Hermosa Roadless Area protected in 2014 by the federal, “[Hermosa Creek Watershed Protection Act](http://www.hermosacreek.org/)”. Here we will see some of the most beautiful Ponderosa Pine and mixed conifer old growth stands in Southwest Colorado. The Hermosa Creek drainage is recognized as having some of the largest and tallest trees yet measured in the Rocky Mountains, and it is being studied by scientists around the country for its ability to grow exceptional trees. The new national champion *Picea pungens*, Colorado Blue Spruce, was discovered here in 2014, finally taking the title away from the former national champion that resides in Utah.

On this easy walk we will learn about what constitutes an old growth forest, how you can easily identify old growth forests on your own, what critters are dependent on these forests, and what signals their presence. We will see some spectacular trees and see how their diameters and heights are measured and how we core the trees to determine their ages. Old growth distribution, fire ecology, and threats to old growth will also be discussed. There will be plenty of time to key out plants along the way.

Trip leader Laurie Swisher grew up hiking and camping in northern California and the Pacific Northwest. She got her B.S. in Forest Management from the University of California, Berkeley, and began her career as a forester with the U.S. Forest Service in Gunnison, Colorado. After stints in Washington and western Colorado, she landed on the San Juan National Forest in 1990 and has been there ever since. She is currently the Forest’s Old Growth specialist and is responsible for maintaining the vegetation and activities databases on the Forest. She is also a member of the San Juan String Band, an officially sponsored Forest Service band that provides conservation education through music to people of all ages.

**11 Wild Edible Plants on the Colorado Trail**  
**Name of leader:** Katrina Blair  
**Number of miles walked round trip:** ½-1  
**Starting elevation:** 7,000′  
**Elevation gain on trip:** 50′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 5 miles. Half day.

Along the Colorado Trail we will encounter a bounty of wild edible and medicinal plants that thrive in the riparian zone of Junction Creek. The well-established trail leads us up along the Junction Creek flood plain. We may choose to detour off the beaten path to discover a variety of plants, shrubs, and edible trees, such as, Siberian Elm, Goji Berry, Cow Parsnip, Osha, Wild Asparagus, and Horsetail.

Throughout our journey we will learn a host of plant benefits: medicines, poultices, fibers, and food. We will learn how to utilize leaves, roots, berries, and seeds in delicious recipes and to simply incorporate them into trail snacks. This time of year is when the wild edible berries start ripening. If it is an abundant season, we hope to awaken our appetite with Serviceberries, Three-leaf Sumac berries, and Barberries. We will even explore some of the commonly found wild weeds and learn about the important nutritional and medicinal resources that they offer.

We will return to our cars by noon and then have the option of carpooling to Turtle Lake Refuge Café for a locally grown, wild harvested, living foods meal. The lunch consists of a fresh juice and four courses: soup, salad, main entrée, and dessert for a suggested donation of $10 -$15.

Trip leader Katrina Blair began studying wild plants in her teens when she camped out alone for a summer to focus on eating wild foods. She later wrote “The Wild Edible and Medicinal Plants of the San Juan Mountains” for her senior project at Colorado College. In 1997 she completed a M.A. at John F. Kennedy University in Orinda, California in Holistic Health Education.

In 1998 she founded [Turtle Lake Refuge](http://www.turtlelakerefuge.org/), a non-profit, whose mission is to celebrate the connection between personal health and wild lands. Turtle Lake Refuge is a wild harvested, locally grown and living foods café and sustainable education center for the community. Katrina teaches sustainable living practices and wild edible and medicinal classes locally and globally. She is the author of Local Wild Life: Turtle Lake Refuge’s Recipes for Living Deep and The Wild Wisdom of Weeds: 13 Essential Plants for Human Survival.

**12 Mesa Verde Green**  
**Name of leader:** Tara Travis, Lauren Hauptman, Marybeth Garmoe  
**Number of miles walked round trip:** 0  
**Starting elevation:** 7,000′  
**Elevation gain on trip:** 0′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 38 miles. Half or all day.

**The landscaping** around the Visitor Research Center (VRC) has a colorful history and interesting challenges. Marybeth Garmoe, Vegetation Ecologist, will give an early morning tour of the grounds and discuss the plantings and all the related issues and challenges of landscaping the VRC.

**The construction** of the VRC facility is a model of green sustainability and Tara Travis, Museum Curator, will give a tour of the VRC building to discuss the green construction and technology that merited LEED Platinum certification.

**The Mesa Verde herbarium** collection is an excellent compilation of the works and organization of many people over several decades. Marybeth and Tara will show some of the specimens that are interesting because of the species’ status (endemic or ecologically/geographically restricted), the historic nature of the specimen, the special status of the person who collected the specimen, or any combination of these. Topics will also include other parts of the Park’s Natural History collections and archives. We will look at the Fire Records and the "Mesa Notes" that discusses plants and wildlife observations by staff and members of the CCC during the 1930’s.

**Native plants** were a critical resource in the daily lives of the ancient peoples of Mesa Verde. Lauren Hauptman, Museum Technician, will show select artifacts constructed from plant parts. Highlighted will be plant foods (wild and domesticated), plant food processing, fiber, dyes and pigments, and construction.

**After the morning Visitor Center tours, attendees may proceed on their own into the Park as ordinary Park visitors (Park fees apply) for tours of the ancient dwellings.**

Trip leader Tara Travis holds a Ph.D. in Public History from Arizona State University and has enjoyed an interdisciplinary career in the National Park Service. She has held positions as a historian, ethno-historian, and museum curator in the Intermountain Region. She has published on the National Park Service and women’s history; the Navajo experience at Canyon de Chelly; and intangible cultural heritage. Currently she is Museum Curator at Mesa Verde National Park and served as the park liaison for the construction of the new Visitor and Research Center, assisted in the installation of the exhibits, and led the packing and moving of the 3 million museum collections.

Trip leader Lauren Hauptman holds a B.A in Anthropology and Classical Civilizations from the University of Mary Washington in Fredericksburg, Virginia. She has worked with the National Park Service since 2006 having held positions as an archives technician at Yellowstone National Park and as a museum technician at Death Valley National Park before transferring to Mesa Verde National Park in 2010. Lauren is currently Museum Technician, assisting the Museum Curator in the packing, moving, and tracking of 3 million collections and archival records on their journey to their home at the new Visitor and Research Center. Once the Research Center opens, she will assist researchers who want to access the collections.

Trip leader Marybeth Garmoe holds a B.A. in Environmental, Population, and Organismic Biology from the University of Colorado and a M.S. in Forestry from Northern Arizona University, where she studied the impacts of large scale herbicide applications on native and exotic plant communities. She has been with the National Park Service since 2010 with Natural Resource Programs and has focused primarily on plant biology. She is currently the Vegetation Ecologist at Mesa Verde National Park, where she oversees rare plant monitoring, exotic plant control, vegetation monitoring, and restoration. See <http://www.nps.gov/meve/parknews/13_07_vrc_platinum.htm> .

**13 Gardens of Durango**  
**Name of leaders:** Marsha Schuetz and Linda Robinson  
**Number of miles walked round trip:** 0  
**Starting elevation:** 6,200′  
**Elevation gain on trip:** 0′   
**Meeting time:** 8:30 a.m.  
**Miles to trailhead & duration of trip:** Trip is in Durango. Half day.

**Garden #1:** We will start our day with an hour tour of the Santa Rita Park Garden and Smelter Mountain/Animas River Park. The Garden Club of Durango rescued several old roses from being destroyed when the Durango Library was built in the early 1990s. The city gave permission to use a portion of land at Santa Rita Park to plant the roses and this early beginning has blossomed into what many think is the most beautiful park in Durango. There have been many changes and additions over the years:

1. All weed barrier was removed. Although a back-breaking job, it gave tremendous improvement in soil and plant health. It is all about the soil!
2. Only roses are planted that are hardy to zone 4 or lower, and only own-root roses known to be disease and pest resistant are used.
3. Perennials and annuals are planted among the roses to discourage a monoculture.
4. A Blue Star Memorial was added to the garden entrance.
5. A pergola was built and planted with vines and climbing roses.
6. A raised bed was built and planted with fragrant roses and ground covers. A wind sculpture was commissioned and purchased from a local artist and installed as a focal point.
7. Rock bridges and paths allow visitors to meander through the different garden beds.
8. Signs provide educational help about plants that grow well in our area.

Smelter Mountain/Animas River Park is Durango’s newest park; we will take a short stroll through it from the Santa Rita Gardens.

Trip leader Marsha Schuetz was born in Cortez and raised a few miles from there in Lewis. She and her brother rode horses 3 miles to the Lewis school that her Granddad Field built. The school was 3 rooms and 8 grades. Her Grandmother raised flowers, her Granddad and Mother always had a vegetable garden, and she learned at an early age how to can, slaughter chickens, and milk cows. As an adult, she gave up the chickens and cows but continued to grow flowers with a passion. She and her husband Jon live in the Animas Valley on 5 acres devoted to grass, flowers, trees, and ponds. They pay tribute to the old west with a 1880’s cabin, mine, outhouse, and line camp. Two Colorado rare wildflowers, the Yellow Lady Slipper and Wood Lily, grow on their property.

Marsha has been a member of the Garden Club of Durango since 1988. She has owned the Diamond Circle Gift Shop and Rio Grande Trading Co. on Durango’s Main Avenue since 1974. Marsha has been an avid gardener and hiker her entire adult life, with a special love of wildflowers, rocks, and the red rock country.

**Garden #2:** The final portion of the Durango Gardens tour focuses on several residential sites. At these sites the presenters have used native plants within the designs. Many factors influence the possibilities within a landscape, including soils, aspect, moisture, the requirements of the human functions and intentions for the site, and the surrounding landscape. Native plants can be used as ornament, as definers of space, and as habitat for the native fauna. When considering how people can live within a native landscape, hardscape elements and design moves can be important. They take the pressure off the native plants. At each location, we will address the challenges of the site, the plantings and their intended functions, and other elements that contribute to the success of landscape.

Trip leader Linda Robinson grew up in North Eastern Arizona on the Navajo Reservation, and has lived most of her adult years in Southwest Colorado. She is a Colorado Professional Landscape Architect and has operated a landscape design /build /maintain firm in Southwest Colorado for over 20 years. After landing a job in the grounds-keeping department of Seattle Pacific University during her undergraduate studies in Art, Linda discovered her interest in working with landscapes. The climate in the Pacific North West produced lushness and a plethora of greens and colors, but her loyalty to landscape ultimately remained in the Four Corners region of the Colorado Plateau. Pursuing her interest in art + landscape and the connection of people with native landscapes, Linda completed a Masters of Landscape Architecture from the University of Colorado in Denver. She has focused the planting design aspects of her practice on integrating native plants and rehabilitating landscapes after development to reconnect with surrounding native landscape and with the local fauna.



**Saturday Field Trips**

**Trips 1, 2, 3, 4, 5 & 7 on Saturday are the same as trips 1, 2, 3, 4, 5 & 7 on Friday. See Friday for descriptions.**

**14 Alpine Ice Lakes**  
**Name of leader:** Julia Hanson  
**Number of miles walked round trip:** 5 miles   
**Starting elevation:** 9,840′   
**Elevation gain on trip:** 1,670′  
**Meeting time:** 6:30 a.m.  
**Miles to trailhead & duration of trip:** 54 miles. All day.

This is the most physically difficult trip on the 2015 Conference schedule and it offers plant lovers the greatest diversity of plants: those found in mixed conifer and alpine forests, in alpine meadows, and in riparian areas.

Ice Lakes Basin towers above the Mineral Creek Valley and supports an array of alpine plant species such as Penstemon, Jacobsladder, Cow Parsnip, Elephant heads, and Love Root along the open meadows of Lower Ice Lake, and it also supports a mixed conifer and alpine forest with a diverse understory of alpine forbs, mosses, and lichens.

Our upward portion of the trip will be at a comfortable, but steady pace so we can get to Lower Ice Lake before the common afternoon lightning and showers. At the beginning of the hike, the trail climbs steeply from the valley floor and rises quickly through the mixed conifer forest. The trail crosses several small drainages with Monkey Flower before it leads to a steep rocky canyon and waterfall. We will take a quick stop here and at intervals along the trail to catch our breath and take in the sites of the surrounding alpine peaks that rise above 13,000 feet. As we continue along the trail we rise quickly in elevation and eventually the forest breaks open to lush alpine meadows and an explosion of colorful wildflowers.

At Lower Ice Lake, our destination, we will enjoy lunch and have time to wander around the lake to identify plants, photograph, draw, etc. The descent will be very slow to allow for a closer investigation and identification of plant species with time to stop, use hand lenses, and share what we discover.

Trip leader Julia Hanson has lived in the San Juan Mountain area for more than twenty years in both Silverton and Durango. She received a B.S. in botany at Western Washington University where she studied plant species from the ocean side to high alpine communities in the Bellingham, Washington area. Julia worked for the Colorado Natural Heritage Program, the U.S. Forest Service, and the Nature Conservancy before her current work as a biologist for a consulting company in Durango.

**15 San Juan Skyway Scenic Drive  
Trip Leader:** Mike Price  
**Number of miles walked round trip:** 0  
**Meeting time:** 7:00 a.m.  
**Miles driven for the day & duration of trip:** 240 miles, 9 hours.

**Please note:** This trip is limited to 5 participants. If you sign up for this trip, be sure to include $35 in addition to your registration fee. This additional fee is for the mini-van rental fee and gas. Depending on the rental cost and the number of participants, there may be some refund or additional charge.

[The San Juan Skyway](http://www.durango.org/press-room/fact-sheets/san-juan-skyway/) is the ultimate scenic road trip, a 236 mile loop through spectacular montane and alpine scenery. Along the way we will make a number of stops to look at flowers, briefly discuss the geology of these stunning mountain vistas, get a cup of coffee, and stretch our legs. We will have ample opportunity to observe the changes in flora as elevation, substrate, slope, and aspect change. And since our group is very small (limit of 5), we will be able to stop whenever anyone wants to and we will be able to have good conversations.

To learn about our route, please Google “San Juan Skyway”. Each participant on this trip will receive a copy of the “San Juan Skyway Visitor Guide” which shows the route, the towns along the way, mountain passes, and other highlights of the trip.

We will start our day driving west from Durango, through the tiny town of Mancos, past the entrance to Mesa Verde National Park, stopping several times to observe special roadside wildflowers. We will turn north at Cortez to join the Dolores River as it comes southward from the high mountains at Lizard Head Pass. On our route up the Dolores River Canyon to Lizard Head, we will stop to look at several special roadside plants and at Lizard Head we will walk a few feet on the Lizard Head Trail to see numerous wildflower species. Three 14,000 foot peaks as well as the prominent landmark of the Lizard Head spire itself soar above the pass.

A short and scenic 20 minutes later we will be in Telluride, a Victorian mining town that now hosts a multitude of festivals thru the summer and in winter is a top-rated ski resort. We’ll take a 15 minute ride on the free gondola for spectacular views of the high peaks and the valley below.

Leaving Telluride we will drive down the very scenic San Miguel River Canyon and then turn to the east to again climb a high mountain pass, the Dallas Divide, where the views of 14,150 foot Mount Sneffels are outstanding. On the east side of Dallas Divide we’ll stop in Ridgeway at the City Park for our lunch in the shade of several massive Cottonwood trees.

After lunch we will head south with the Cimarron Ridge east of Ridgeway above us. The jagged crest of Cimarron Ridge consists of Early Phase lava flows and ash layers. We’ll continue south along the Uncompahgre River to Ouray, known as the Switzerland of America, and then ascend the deep gorge of the river on a twisting, winding road, the first section of the “Million Dollar Highway”. At Bear Creek Falls we’ll see the near vertical strata, conglomerate, sandstone, and slate of the Uncompahgre formation and we’ll stare into the beauty of the Falls.

Climbing to the old mining towns at Red Mountain Pass we’ll pass through beautiful stands of Aspen and then descend into Silverton, the upper terminus of the Durango & Silverton Narrow Gauge Railroad. At Coal Bank Pass we’ll stop at the trailhead for the Pass Creek Trail, the best wildflower trail along our entire route. Here we will look at 40 species of wildflowers (in the parking lot!) and those who would like to, may walk a few minutes on the Trail with flowers completely surrounding them.

Then, beginning the long descent to Durango, the highway snakes between Engineer Mountain and the very scenic terraced slopes of the cyclothemic Pennsylvanian strata (repeated cycles of limestone, sandstone and shale) to the west and the pre-Cambrian metamorphic sediments, gneisses, and granites of the Needle, West Needle, and Grenadier Mountains to the east. As the highway grade decreases we pass into younger and younger rocks, eventually coming back into red beds and, as we near Durango, the cliffs are capped by the Dakota sandstone.

All of our changes in elevation, direction, watershed, and geologic formations will show us a wide diversity of plants. We’ll pass through forests of Pinyon and Juniper at the lowest elevations and then ascend and descend several times through Narrowleaf Cottonwoods, Ponderosa Pine, Doug Fir, Aspen, Colorado Blue Spruce, and finally Subalpine Fir and Engelmann Spruce. And the shrubs and wildflowers will also change along the entire route with the road now and then lined with numerous species.

Trip leader Mike Price received his B.A. in the early Jurassic period from Augustana College and his M.S. from the University of Wisconsin eons later in 1964. Mike worked as an exploration geologist with Mobil Oil Corp in Denver, Egypt, and The Netherlands. Mike’s association with the Native Plant Society grew from his desire to know a bit about the plants, birds, and general environment of the 280 acre Five Springs Farm where he lives with his wife, LaMona, in the PJ scrublands of SW Colorado.

**16 An Introduction to Life Zones – Vegetative Communities Stratified by Elevation and Latitude**  
**Name of leader:** Will Rietveld  
**Number of miles walked during the trip:** ~1  
**Starting elevation:** 6,000′ Ending elevation: 11,000′ (via car)  
**Elevation gain on trip:** 200′ (via walking)  
**Meeting time:** 7:30 a.m.   
**Miles traveled for the day & duration of trip:** 75 miles. All day.

In 1890 C. Hart Merriam advanced the concept of Life Zones, which describes the stratification of vegetation by elevation and latitude. His research was focused on the San Francisco Peaks in northern Arizona, not far from Southwest Colorado.

Merriam believed that climatic gradients, especially temperature, largely determined what type of vegetative community one may find in a given location, and that these gradients were largely a function of latitude and elevation. As one moves upward in elevation, temperatures decrease and precipitation increases. His regional life zones generally follow elevational belts. Around Durango, at 6,000 feet a pinyon-juniper woodland community might be found, but just a thousand feet higher at 7,000 feet stands a ponderosa pine forest, above that is mixed conifers, then aspen, etc. Each life zone, extending from desert to alpine tundra, is like a layer of a cake, with one or more dominant species delineating that particular zone.

But, it’s not quite that simple, because there are numerous other factors affecting the distribution of biota, including aspect (i.e., which direction the slope is facing), wildfire history and frequency, and soil type. For management purposes, the Forest Service prefers “vegetation types” which further break down life zones to account for other influencing and disrupting factors.

Our field trip will cover all of the local life zones, but out of convenience, we will begin with the pinyon-juniper woodland type just south of Durango, and progress north ending up on top of Coal Bank pass in the spruce-fir vegetation type. This will be a car caravan, on good roads, with about six stops.

Our first stop, away from traffic and overlooking Lake Nighthorse near Durango, will include an overview of the Life Zone concept, identification of the fundamental factors that determine the vegetative community, and discussion of other influencing and intervening factors. We will have some time to walk about to identify the tree species that characterize the zone, as well as typical associated species. Emphasis will be on woody plants and common wildflowers.

The field trip will have about six stops total, where we will progress higher and higher in elevation and visit typical examples of the pinyon-juniper, ponderosa pine, warm/dry mixed conifers, cool/moist mixed conifers, aspen, and spruce-fir vegetation types. If time permits, we will visit some atypical vegetation types as well to understand the role of disruptive factors. Our final stop, at nearly 11,000 feet on Coal Bank Pass, will afford us an opportunity to tour an outstanding wildflower display, in the comfort of cooler temperatures.

Trip leader Will Rietveld grew up in Durango and has hiked in the area for 56 years. He attended Fort Lewis College in Durango and then received B.S. and M.S. degrees in Forestry Science from Oregon State University, and Ph.D. in Ecological Plant Physiology from the University of Arizona. He worked his entire career in the research branch of the USDA Forest Service as a research scientist, project manager, and national program leader. Now retired, Will works part-time as an outdoor writer, and volunteers with the Forest Service and other community organizations. Will and his wife, Janet (our super registrar), are the authors of the web site, Southwest Ultralight Backpacking.

**17 Colorado Trail Wildflowers**  
**Name of leader:** Amanda Kuenzi  
**Number of miles walked round trip:** 2  
**Starting elevation:** 10,900′  
**Elevation gain on trip:** 600′   
**Meeting time:** 7:30 a.m.  
**Miles to trailhead & duration of trip:** 45 miles. All day.

We will briefly stop at the Molas Pass overlook parking area to take in the sweeping vistas of the Weminuche Wilderness, to get an overview of the stair-step topography (created by the limestone terrace geology), and to observe the evidence of reforestation after the 1879 Lime Creek Burn area. We will also search for rare moonworts (*Botrychium*) which are numerous in this area.

We will then ascend the gentle switch backs of the Colorado Trail through the subalpine conifer forest, up to scenic, open meadows. We will be greeted by numerous species of wildflowers, many in the Rosaceae, Asteraceae, and Caryophyllaceae families. This trip will provide expansive views, south to Engineer Peak (12,698 feet) and North Twilight Peak (13,075 feet).

There be will plenty of flexibility on this trip, moving as quickly or slowly as the group desires, covering more or less ground as time allows. We will also have the option of walking around Little Molas Lake to add some wetland plant identification to our day.

Trip leader Amanda Kuenzi (pronounced Ken zee) has been learning about botany in the southwest since 2000, when she began her career studying fire ecology at Bandelier National Monument. She then pursued a Master’s degree at Northern Arizona University in Flagstaff, Arizona, where she did her research on the post-fire plant community of the Rodeo-Chediski fire. She worked as a botanist in Grand Canyon National Park for 2 years, as part of the National Vegetation Mapping Project. She now lives in Durango and works as an environmental consultant, preparing environmental compliance documents.

**18 Wildflower Photography**  
**Name of leader:** Priscilla Sherman  
**Number of miles walked:** 0  
**Starting elevation:** 8,140′  
**Elevation gain on trip:** 0′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 17 miles.  
Half day.

This field trip is for wildflower enthusiasts of all levels of botanical interest who want to capture nature’s beauty through their camera lens. We will explore principles and techniques of flower photography for amateurs who use complex or simple cameras. Visual literacy will be our focus, as we learn best flower selection and the importance of composition and habitat. The effects of light, depth of field, wind, and flower color will be discussed, demonstrated, and practiced.

Throughout the sessions we will explore camera operation and advantages and disadvantages of various cameras from the basic pocket camera to DSL models. We will experiment with each person’s camera settings to see how you can enhance your photos and we will also discuss methods to edit your photos on your computer. There will be ample time for asking personal photo questions, photo critiquing, and experimenting.

We will be getting down on the ground, so dress appropriately. A kneeling pad is useful and bring your tripod if you have one. Also please bring your camera manual.

Trip leader Priscilla Sherman holds a B.A. in Environmental Studies from Prescott College. In addition to her interests in environmental stewardship, Priscilla has developed a passion for nature and landscape photography and she is developing a photographic environmental education gallery at [www.priscillashermanphotography.com](http://www.priscillashermanphotography.com) . Her images have appeared in various publications in Colorado. Priscilla began botanizing with the San Juan Chapter of the NPSNM in 2010.

**19 Lime Creek Wildflowers  
Name of leader:** Julie Korb  
**Number of miles walked round trip:** 1+  
**Starting elevation:** 9,900′  
**Elevation gain on trip:** ~200′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 40 miles. Half day trip.

This trip is for individuals of all botanical interests. West Lime Creek Trail is a beautiful, easy trail to hike and see wildflowers that are common in the subalpine zone. We will walk past many wildflowers through old-growth Engelmann Spruce and Subalpine Fir to a small waterfall. We will go over plant family traits for some of the common plant families we will see during our walk to help individuals identify wildflowers in bloom.

We will also talk about fire ecology of subalpine forests during the walk and Julie will bring tree borers for participants to core trees and look at tree rings. Our return to the trailhead will be at a very slow pace and we will sit along the creek, have a snack, take photographs, draw (if the spirit moves you), key out plants, use a hand lens, and ask questions.

Trip leader Julie Korb is Professor of Biology at Fort Lewis College. Julie’s research interests include plant community dynamics, forest restoration, fire ecology, and plant-pollinator interactions. Julie received her B.A. and M.S. at the University of Colorado, Boulder, and worked as a Research Assistant for two years in the CU Boulder Herbarium during her Master’s degree. Julie earned her Ph.D. at Northern Arizona University from the School of Forestry in Restoration Ecology.

**20 Wild Edible Plants of La Plata Canyon  
Name of leader:** Katrina Blair  
**Number of miles walked round trip:** ½-1  
**Starting elevation:** 8,800′  
**Elevation gain on trip:** 200′  
**Meeting time & location:** Just before noon at Turtle Lake Refuge Market booth, NE corner of the Farmers Market near the live music. The Farmers Market is at 8th Street and Camino del Rio (Highway 550). Market is open 8 a.m.to noon.  
**Miles to trailhead & duration of trip:** 15 miles. Half day.

We will begin our journey together tasting some of the wild edible locally made Farmers Market goodies such as dandelion pesto, wild amaranth seed crackers, and chokecherry macaroons. We will then drive to La Plata Canyon where we will walk along the La Plata River and meet a variety of edible and medicinal plants near and around the valley bottom. Depending upon the rain cycles, we may also find mushrooms along our journey and if we are lucky perhaps some of them may be choice edibles. The elevation gain near the river will be minimal as we wander around the lush, verdant, forested grounds discovering Sweet Cicely, Stinging Nettles, and Wild Violet.

Our later part of the outing will be sauntering up the Madden Creek Trail at a plant identification pace to discover and taste a variety of new useful plants along our way. The trail leads us through Aspen groves as we make our way along the base of Star Peak. We may encounter some edible delights such as Wild Strawberries, early Raspberries, Oregon Grape berries, Currants, Thimbleberries, and perhaps some Serviceberries to quench our thirst along our way.

Trip leader Katrina Blair began studying wild plants in her teens when she camped out alone for a summer to focus on eating wild foods. She later wrote “The Wild Edible and Medicinal Plants of the San Juan Mountains” for her senior project at Colorado College. In 1997 she completed a M.A. at John F. Kennedy University in Orinda, California in Holistic Health Education.

In 1998 Katrina founded [Turtle Lake Refuge](http://www.turtlelakerefuge.org/), a non-profit, whose mission is to celebrate the connection between personal health and wild lands. Turtle Lake Refuge is a wild harvested, locally grown and living foods café and sustainable education center for the community. Katrina teaches sustainable living practices and wild edible and medicinal classes locally and globally. She is the author of Local Wild Life: Turtle Lake Refuge’s Recipes for Living Deep and The Wild Wisdom of Weeds: 13 Essential Plants for Human Survival.



**Sunday Field Trips**

We have scheduled a number of morning trips for Sunday so that those folks who need to drive home on Sunday can at least enjoy a short morning field trip.

**Trips 1, 2, 3, 5 & 7 on Sunday are the same as trips 1, 2, 3, 5 & 7 on Friday. See Friday for the descriptions.**

**21 Andrews Lake Wetlands and Fens  
Name of leaders:** Jim Wakeley and Bob Powell  
**Number of miles walked round trip:** 1  
**Starting elevation:** 10,744′  
**Elevation gain on trip**: 60′  
**Meeting time:** 7:30 a.m.  
**Miles to trailhead & duration of trip:** 39 miles. Half or all day.  
[Click for Andrews Lake Wetlands and Fens plant list](http://www.swcoloradowildflowers.com/PDF/PlantLists/2015FieldTrips/AndrewsPlantList.pdf).

Ready for a new experience? This trip to Andrews Lake Fens will focus on changes in soil characteristics and plant communities surrounding a fen-wetland system in the subalpine zone at 10,800 feet elevation. Looming above the Lake are the cliffs of Snowdon Peak, 13,077 feet high. The fen complex is an easy walk ½ mile east of Andrews Lake. Test holes will be dug to show how soil characteristics change along the wetness gradient from organic (peat) soils in the wettest areas to upland mineral soils on side slopes. We will then discuss the unique characteristics of wetlands and the changes in soils, habitats, and plant communities from ponded fen to fen with subsurface water, dry former fen, rivulet habitat, meadow, and spruce/fir forest. Each habitat has very different plants.

We will briefly discuss terminology and resources used in identification of wetland sedges, rushes, and grasses. Ponds in the fen support Tiger Salamanders and are surrounded by wetland plants, including Cotton-grass (actually a Sedge, *Eriophorum angustifolium*) and colorful flowers such as Marsh Marigolds, Elephant Heads, and several orchids. The dry former fen has obvious wetland soils, but it also has a plant community that is changing to drier upland species. Some areas in the fens will be wet and muddy, so waterproof boots or old shoes are suggested.

During our walk back to Andrews Lake, we will observe many colorful flowers, especially various Asteraceae, that are by the rivulet and in the dry meadows, forests, and grassy hillsides. One unusual hillside plant is the tall monocarp Green Gentian, *Frasera speciosa*. We will describe its atypical flowering.

Participants who need to, may head home at this point or those choosing to stay will view new habitats and have more time to continue photographing flowers and scenery.

Trip leader Jim Wakeley is a Certified Wildlife Biologist and Professional Wetland Scientist. He recently retired after 25 years with the Environmental Laboratory of the U.S. Army Engineer Research and Development Center, where his work focused on wildlife habitat assessment and wetland identification and delineation. He is a former Associate Professor of Wildlife Ecology and Chair of the Fish and Wildlife Program at the Pennsylvania State University. He earned his Ph.D. in Wildlife Ecology at Utah State University back in the Dark Ages. Currently, he does volunteer work for Mesa Verde National Park and Canyons of the Ancients National Monument. He and his wife Lillian live in Dolores.

Trip leader Bob Powell spent most of his childhood in Denver and adult life in Boulder. He received a B.S. and M.A. from the University of Colorado and a D.Phil. from the University of Cambridge, England, all in physics. He worked at the National Bureau of Standards on thermocouple thermometry and properties of solids at very low temperatures. While in Boulder he helped Bill Jennings with the winter courses given by the Colorado Native Plant Society (CoNPS), obtaining specimens and photos of relevant plants the summer before the courses. One of Bob’s recent interests has been tropical plants, especially those in the mist forests, cloud forests, and páramo (above tree line) in the Andes of Ecuador. Bob has made about 500 scuba dives, mainly in the southwest Pacific, to view and photograph very colorful invertebrates and fish. At present Bob is on the Board of Directors of NPSNM and CoNPS. At 87, Bob is our senior trip leader.

Reading material for “Andrews Wetlands and Fen” trip: “San Juan National Forest Botanical Survey of Fens”: <http://www.cnhp.colostate.edu/download/documents/2007/SJNF_Botanical_Survey_of-Fens.pdf> See pages 6-9 for the Andrews Lake Fens.

General information about wetlands at the US Environmental Protection Agency Wetlands Web Site: <http://water.epa.gov/type/wetlands/> .

A more scientific report on Rocky Mountain wetlands: Windell, J. T. and others. 1986. “An ecological characterization of Rocky Mountain montane and subalpine wetlands”. Biological Report 86(11), US Fish and Wildlife Service, Washington, DC. <http://catalog.hathitrust.org/Record/012212816> (click Full View)

A great new field guide to wetland plants of Colorado: Culver, Denise R. and Joanna Lemly. 2013. Field Guide to Colorado’s Wetland Plants: Identification, Ecology and Conservation. Colorado Natural Heritage Program, Colorado State University, Fort Collins. <http://www.cnhp.colostate.edu/cwic/documents/WetlandPlantsOfColorado_P1.pdf>

**22 Native Plants that Bears Eat  
Name of leader:** Bryan Peterson  
**Number of miles walked round trip:** 1  
**Starting elevation:** approx. 6,850′  
**Elevation gain on trip:** approx. 200′   
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 7 miles. Half day.

Join Bear Smart Durango for an informative search for the plants that Black Bears eat. The walk is short, slow, and easy with minimal elevation gain.

We will walk through known Black Bear habitat that typically has recent bear activity. The leisurely walk is in Perins Peak State Wildlife Area on a trail for a bit, then through a meadow, and then into dense brush. We will find examples of Black Bear favorites, such as, Sweet Cicely, Fendler’s Waterleaf, Osha, and Choke Cherry.

There will be plenty of time for discussion of all aspects of Black Bear life and human-Bear conflict issues. Attendees should leave with a better understanding of Black Bears in the wild, the natural foods they need to survive, the complexities of human and bear conflict, and individual and community solutions to reduce human-Bear conflicts.

Long pants and shirts are strongly encouraged. Attendees will be asked to sign a waiver prior to the hike.

Trip leader Bryan Peterson is the Executive Director of Bear Smart Durango, a local non-profit organization working towards reducing human and bear conflict in our area. Bryan became involved in human and wildlife issues in 2000 while serving on a wildlife advisory board for La Plata County. He was selected as one of three finalists for the Durango Chamber of Commerce’s “Volunteer of the Year” award in 2009.

Bryan has attended regional and international bear conferences in Montana, Utah, Wyoming, New Mexico, Nevada, and British Columbia where he has met and shared ideas with bear experts. In 2011 and 2014, he assisted the National Park Service in Northwest Alaska with educational outreach to Native Villages and Black and Grizzly Bear research in Kobuk Valley National Park.

Bryan was a freelance illustrator for 20-plus years and holds a B.F.A. in advertising design from the University of Wisconsin, Eau Claire.

See the Bear Smart web site: <http://bearsmartdurango.org/black-bears/diet/> .

**23 Plant Illustration  
Name of leader:** April Baisan  
**Number of miles walked round trip:** 0   
**Starting elevation:** 6,500′  
**Elevation gain on trip:** 0′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 0. Half day trip.

In an indoor setting, we will explore techniques for tricking the brain into believing that a 2-dimensional rendering of a plant on paper is the real thing. We will practice making good observations by noting shapes, sizes, colors, and textures, and comparing parts within a plant and those of different kinds of plants. We will work with basic drawing techniques including gesture, contour, and line drawing, as well as shading, all of these primarily in HB pencil. You will go away with some handouts, your own sketches, a new appreciation of botany, and a better eye for field identification.

Materials needed: basic sketchpad (size of your choice), soft lead pencils (HB 2 is good), pencil sharpener, eraser, and other media as desired.

Trip leader April Baisan is a resident of Cortez and has lived in and explored each of the Four Corners states along with California, where she grew up and first botanized at age 18. She has a B.S. in Environmental Studies from Utah State University, Logan, and a M.A. in Secondary Science Education from the University of Arizona, Tucson. She has taught science and art in elementary and high schools and to adult students and has worked as an illustrator on a number of projects over the years. Presently, April collaborates with Al Schneider to document the plant species diversity of Carpenter Natural Area in Cortez, manages her “Four Corners Wildflower Notecards” business, works as a botanist, and enjoys watching dragonflies.

Recommended reading: Clare Walker, Nature Drawing, a Tool for Learning. 1995.

**24 Lichens and Mosses: Charismatic Microflora of Sub-alpine Forests  
Name of leader:** Michael Remke  
**Number of miles walked round trip:** 1  
**Starting elevation:** 10,700′  
**Elevation gain on trip:** 80′   
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 34 miles. Half day.

On this field trip we will take a slow look at subalpine lichens and mosses. For many, lichens and mosses are a great unknown and missing piece of information in their plant knowledge. On the other hand, some folks, especially those living in moist regions, become obsessed with lichens and mosses as they drape tree branches and blanket rocks on the forest floors. For me, the desert became a place where the microflora, growing together as Biological Soil Crusts, began to dominate my interest. Soon I could not hike without stopping to examine the structures and differences in the microflora.

Lichens and mosses both play critical roles in ecosystems. Just as in vascular plants, different species occupy different niches and space and time and each microflora has unique traits that contribute to ecosystem function. It is believed that in the boreal forests, mosses contribute nearly all of the mobile nitrogen to the ecosystem. In the world’s driest deserts, lichens are some of the only nitrogen fixing organisms and thus critical fertilizers in supporting vascular plants. There is little work being done on their contributions to high elevation temperate forests, such as the beautiful subalpine forests in the San Juan Mountains. William Weber himself highlights the lack of information in regards to microflora species distribution in Colorado.

As we slowly wander around the forest and open areas we will learn about key characteristics that help identify lichens and mosses. We will learn to recognize major vegetative and reproductive structures in both lichens and mosses. We will discuss mosses’ role in stabilizing soils from desert environments to high mountain tundra and reflect on symbiotic relationships that mosses may form with other plants or soil organisms.

Vascular plants will not be ignored on this trip; we may find interesting associations with certain moss and vascular plant species as well as areas where species do not coexist.

This trip will cover a very short distance and a wealth of biologic diversity.

Trip leader Michael Remke is a Fort Lewis College alumnus currently pursuing his Ph.D. at Northern Arizona University where he is studying plant-soil organism interactions. Michael’s research aims to better understand limits to plant migration and adaptation to climate change and practical ways that land managers could address these limits. Michael’s hobbies include photography, hiking, biking, camping, botany, birding, fungi collecting, cooking, and woodworking.

Recommended Literature:A Color Guidebook to Common Rocky Mountain Lichens by Larry L. St. Clair.  
A Rocky Mountain Lichen Primer by Corbridge and Weber.  
Bryophytes of Colorado by William Weber. (This book is tough.)

Michael will also provide printouts that depict basic lichen and moss anatomy.

**25 Creating a Community Non-Profit Nature Center  
Name of leader:** Sally Shuffield  
**Number of miles walked:** 0  
**Starting elevation:** 6,040′  
**Elevation gain on trip**: 0′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 11 miles. Half day.

Durango Nature Studies is an environmental education organization that owns and operates a 140-acre Nature Center. Come learn about what it takes to build and support a successful Nature Center and its programs. Learn about the history of Durango Nature Studies and how it has evolved into the very successful organization it is today. Take this knowledge back to your community nature center projects.

Durango Nature Studies just celebrated its 20th anniversary. Running a successful community non-profit requires experience, continuity, and the ability to learn what works and change what doesn’t. Mostly it is about building relationships and finding a niche in the community. Nonprofits are not immune to the evolutionary pressures felt by natural organisms. For a community-based nonprofit, this means paying attention to what your niche is, looking for partnerships, avoiding overlap, and being willing to make changes based on the needs of the community.

Durango Nature Studies teaches about the natural world in an outdoor setting. From our inception, we have also provided programs to help school teachers bring their classrooms outside. Because we work closely with school districts, we are helping teachers with follow-up activities and adding built-in assessments to meet district requirements. One of the keys for the success of Durango Nature Studies has been the creation of a feedback loop with teachers so we can continually tweak our programs.

Another key is that we make sure kids have a way of sharing their knowledge with their families. Opening the Nature Center to the public three years ago was a way to get families out in nature so the kids can show their families what they have learned. Thanks to a grant for next year, we are offering free Nature Center entry to all school students and their families because we know that building on a love for nature beyond the classroom is essential to making that love stick.

Working with Durango School District 9-R through another grant, we have added middle school programs this year. This has been another step in helping students continue their outdoor learning, as they are able at this age to do field studies and experiments at a learning laboratory at the Nature Center. Durango Nature Studies serves on a regional council to help implement the Environmental Literacy Plan adopted by the Colorado Legislature. La Plata County works closely with Durango Nature Studies and leads the state for providing an environmental education program for its students.

The field trip at Durango Nature Studies will take about 2 hours. Participants may then walk through the area on their own. Visit [www.durangonaturestudies.org](http://www.durangonaturestudies.org) to learn more about Durango Nature Studies.

Field trip leader Sally Shuffield has been executive director of Durango Nature Studies for 8 years. She has a B.A. in English and Anthropology and a M.A. in Anthropology. For six years, she was with the Land and Water Fund of the Rockies and she has been an educator and consultant with the Keystone Science School, Calwood Environmental Education Center, Colorado Youth Program, EarthWalk, Summit County, and the National Wildlife Federation. Sally has served on the board of directors for the Center for the American West and the [Colorado Alliance of Environmental Education](http://www.caee.org/) .

Sally and her husband, Mike Matz, along with their son Carson and daughter Celia, enjoy camping, rafting, and traveling. Sally owns her own record company, Larkspur Records, and is a singer/songwriter with three CDs to her credit. Sally’s recent release charted nationally on the folk charts. Visit [www.sallyshuffield.com](http://www.sallyshuffield.com) .

**26 How to Make a Park: The Making of Farmington’s River Parks  
Name of Leader:** Donna Thatcher  
**Number of miles walked round trip:** 1   
**Starting Elevation:** 5,400′  
**Elevation gain on trip:** 0′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead and duration of trip:** 51 miles. Half day.

The Farmington River Park system, designated a National Recreation Trail, extends for several miles along the San Juan and Animas Rivers and is still being expanded. How did this Park come into being from a landscape of varied uses, neglect, and trash? What can you learn from the experiences at Farmington River Parks that will assist you in creating and maintaining a similar park in your community? Come hear the story, ask your questions, and take home enthusiasm.

The field trip begins with coffee, Navajo tea, and talk in the Riverside Nature Center, which overlooks a wildlife wetlands, a restored oxbow lagoon of the Animas River, managed for wildlife. The Nature Center hosts activities developed for guests of all ages and abilities. After our discussions in the Nature Center, we will take a short walk in the garden (specially designed for wheelchair visitors) where we will see deer-tolerant landscaping. We will then walk onto the river trail to see the results of years of planning and effort. We will see ducks and other wildlife and many cottonwoods, willows, and riparian shrubs preserved as wildlife habitat. We will discuss management practices which balance native plants and non-natives.

The park and trail system were begun in the 1980s through partnerships of a local private foundation and the city, with support from taxes and grants. All access and activities are free. The park consists of trails and some developed features including activity plazas and a whitewater sports area used by the public for all sorts of activities. The Nature Center is the destination for guided field trips by schools and even special-needs adult groups in adult day care. The 3 acre xeriscape demonstration garden features herbs and native plants, as well as low-water-use landscaping plants and comparative plantings of turf grasses. Identifying signage is designed to be durable and vandal resistant. Prior to development as a garden, the space was choked with invasive Russian knapweed.

Nearly all Park maintenance is done by volunteers, and the infrastructure, such as irrigation, was funded by volunteer groups.

Read more about the Park: <http://www.americantrails.org/nationalrecreationtrails/trailNRT/Berg-Animas-Trail-New-Mexico.html> and <http://fmtn.org/riversidenaturecenter> .

Trip leader Donna Thatcher has degrees in Biology and Anthropology from the University of Arizona. She has been the coordinator and education specialist of the [Riverside Nature Center](http://fmtn.org/riversidenaturecenter) since its establishment in 1999. Donna specializes in ethnobotany and in environmental education for visitors of all ages. She has lived in the Philippines, and for many years lived on the Navajo Reservation, both sources for information about plants and their uses. She also worked as a Girl Scout professional worker, on and off the Navajo Reservation, for many years, and has experience in camp development and management. For 20 years, she was a director of the New Mexico Forestry Camp for teens every summer. She is active in the NPSNM and is also a life-long birder and president of the Four Corners Bird Club.

**27 Ethnobotany of Aztec Ruins  
Name of leader:** Dana Hawkins  
**Number of miles walked round trip:** 1+  
**Starting elevation:** 5,600′  
**Elevation gain on trip:** 75′  
**Meeting time:** 8:00 a.m.  
**Miles to trailhead & duration of trip:** 36 miles. Half day.  
[Click for Ethnobotany of Aztec Ruins plant list](http://www.swcoloradowildflowers.com/PDF/PlantLists/2015FieldTrips/AztecPlantList.pdf).

This trip is within the 320 acre Aztec Ruins National Monument. It will begin in the picnic area, which has several native trees and shrubs that were ethnobotanically significant to the Ancestral Puebloans who inhabited the site between AD 1100 and AD 1300. Within the picnic area, there is also a recently planted Native Plant Trail that will showcase several native varieties of cacti, small shrubs, forbs, and grasses, also significant to Ancestral Puebloans. We will spend time here discussing the native plants. From the picnic area, we will take a short walk down a new trail and bridge that go over the Animas River, and we will spend some time discussing a few important riparian species that can be seen in the bridge area. The riparian area is currently undergoing an intense restoration stage, as it has been inundated with Salt Cedar and Russian Olive, but there are several key species that can be viewed and discussed.

For those folks who have the time, we will continue past the West Ruin, a 500 room, 3 story greathouse, and the largest reconstructed great Kiva. The walk to the North Mesa traverses old farm fields and a small wooden bridge across an irrigation canal. On the other side of the bridge, we will enter into one of the least visited resources of Aztec Ruins.

A small arroyo that cuts through the North Mesa is one of the best places for people to see many native plants. The arroyo begins with pinon-juniper shrub and grassland and ends on top of the mesa with herbaceous vegetation atop a river cobble terrace. There are several native species on the North Mesa that cannot be seen anywhere else in the park, partly because of historical disturbance, but also because of the variance in vegetation type. From the North Mesa there is a grand view of the West Ruin, as well as the area around Aztec Ruins, including areas likely used for construction of the greathouse and kiva.

Trip leader Dana Hawkins, a graduate of San Juan College and the School of Anthropology at Fort Lewis College, studies Southwest archeology, subsistence, ancient agriculture, cultural ecology, and ethnobotany. Dana began her career with the National Park Service in 2010, as a Museum Aide and later as an Archeological Technician, before she filled the Natural Resource position at Aztec Ruins. In this position Dana is working to restore nearly 150 acres of severely disturbed lands, tying them to two Cultural Landscapes (Historic and Ancient), and connecting the public to the natural resources of the area through stewardship projects and youth programs. Dana is also developing a Heritage Garden and Native Plant Trail, which allow her to study and share knowledge about plants and their uses at Aztec Ruins.

See <http://www.nps.gov/azru/index.htm> .

**28 Durango’s Urban Forest  
Name of leader:** David Temple  
**Number of miles walked:** 1  
**Starting elevation:** 6,500′  
**Elevation gain on trip:** 50′  
**Meeting time:** 8:30 a.m.  
**Miles to trailhead & duration of trip:** In Durango. Half day.

This trip consists of short strolls through four fine examples of Durango’s urban forest. We will start at Santa Rita Park with a few interesting trees, including *Cercocarpus ledifolius,* known primarily from southern Utah, then on to Third Avenue, Durango’s historic Avenue with a wonderful parkway of mature trees and diverse plantings. The River Walk portion or our trip will showcase the fine riparian environment, and the last segment of the journey will be a walk through the diverse tree plantings on the Fort Lewis College Campus.

Along all of these short walks we will see most, but certainly not all, of the species currently growing in Southwest Colorado. The history of the plantings and current ordinances requiring preservation will be discussed as well as best management strategies used to retain mature and stable trees.

Trip leader David Temple was born and raised in Denver. He started his career in the tree care industry at age 16 and still enjoys the work 46 years later. He finished his Bachelor’s degree in landscape horticulture at Colorado State University in 1977 and moved to Durango in 1978 when he started his own arborist business which is still thriving. He became a certified arborist in 1996 and has been a Board Certified Master Arborist for the last 6 years. He owns “Trees of Trail Canyon”, a nursery specializing in unique and large caliper trees.

See <http://www.treesoftrailcanyon.com/about.html> .

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Clambering up the Cold Mountain path,  
The Cold Mountain trail goes on and on:  
The long gorge choked with scree and boulders,  
The wide creek, the mist-blurred grass.  
The moss is slippery, though there’s been no rain  
The pine sings, but there’s no wind.  
Who can leap the world’s ties  
 And sit with me among the white clouds?

Garry Snider’s translation of a Cold Mountain poem.