

**The 6th Annual Colorado Rare Plant Symposium:
G2 Plants of Colorado
September 11, 2009
8 am - 4 pm
Loveland, Colorado**

Meeting Minutes

Sponsors: CoNPS, CNHP, CU Herbarium, USFS, USFWS

Recorders: Janis Huggins, Betsy Neely, Peggy Lyon, Jill Handwerk

Introduction and ground rules: Steve Popovich, USFS

The first symposium was held in Steamboat Springs in 2004, and covered all of Colorado's threatened, endangered, candidate, and petitioned plant species. The second symposium, held in Pagosa Springs in 2005, covered the globally critically imperiled (G1) plant species of Colorado that are not federally listed species. The third symposium was held in Colorado Springs and covered imperiled (G2) plants species of southeastern Colorado. The fourth symposium was held in Boulder and covered the imperiled and vulnerable (G2 and G3) species known from the northeast quadrant of Colorado. The fifth symposium was held in Montrose, and covered the imperiled (G2) species known from the southwest quadrant of Colorado. This year's symposium will cover a review of listed species; G1 species; G2 species from southeastern Colorado; G2 and G3 species from northeastern Colorado; and G2 species from southwestern Colorado. In addition, we will introduce G2 plants from northern and central Colorado.

Goals:

1. Knowledge exchange
2. Foster networking and communications
3. Strategize conservation efforts and prioritize species in most need of conservation
4. Review results of past symposia

New Information for Taxa Presented in Previous Symposia (led by Jill Handwerk)

Review of 2004 Listed Species

1. *Astragalus humillimus* G1S1 LE
Two occurrences became historical-have not been seen for 20+ years.
Peggy Lyon: modeling this winter for San Juan National Forest; *Astragalus humillimus*, *Astragalus tortipes*, *Sclerocactus mesae-verdae*
2. *Astragalus osterhoutii* G1S1 LE
Jill Handwerk: ATV activity continues.
Brian Kurzel: State Land Board working with BLM and Mt. Meadow Masher to work on solutions for protecting area from ATVs.
Brian Elliot: some trampling by livestock but did not see habitat. When visited, looked good; surveyed in area.

Steve Popovich: could have habitat on National Forest land closest to Kremmling/ Hot Sulphur Springs or maybe in Willow Creek Reservoir area.

Steve Yarborough: may have found a new site. County Road 22 N of Meeker.

3. *Astragalus tortipes* G1S1 C

Jill H.: access difficult because site is on Ute land.

4. *Botrychium lineare* G2? S1 former candidate (removed)

Steve P.: plants have been seen more recently than 2005. Dr. Farrar working on taxonomy since 2005 with Steve Popovich and Gina Glenne. Taxonomy is not clear- will be resolved by 2010. Closely related to *B. campestre* and maybe not separable. Continue to track as separate species for now.

Bonnie Heidel: recently discovered in Black Hills National Forest. Not found on two most recent visits. Last observed in 2007. Burning, logging, and grazing occurring.

5. *Eriogonum pelinophilum* G2S2 LE

Gina G.: 90 day and 12 month finding for critical habitat has been published. Finding indicates revisions for critical habitat are warranted. Conducting five year review and new recovery plan for species in next year (last done in 1988). Many private lands have habitat. Recovery plans will help.

Susan Spackman-Panjabi: Possibly G1G2 but lack of information on private land precludes rank change. Only five occurrences with substantial information, the rest have very little information. Sparse info because many occurrences are on private land.

6. *Eutrema penlandii* G1G2 S1S2 LT

Jill H.: occurrences now 11 with the combination of some 'sub' occurrences in close proximity.

7. *Ipomopsis polyantha* G1S1 C

Peggy L.: last year, set up demographic study to determine how long it lives; Colorado Natural Areas Program (CNAP) to perform monitoring-some protocol was changed. Using volunteers for rare plant monitoring.

Ellen M.: candidate for listing. Three large developments planned in area near Pagosa Springs are to be annexed by the town, includes both sides of Hwy 84 by the rodeo grounds. This threatens the population. Need local presence to do outreach. Parks and Recreation are somewhat aware and supportive but they do not have the resources to make this happen. Recreation comes first. Need grants and funding to make this happen.

Gina G.: plants are not protected on private lands. Do not know if critical habitat will be proposed.

Susan S-P.: most of the population is on private land.

8. *Lesquerella congesta* G1S1 LT

Gina G.: USFWS is in the process of updating the recovery plan; will address oil and gas development which was not considered in old recovery plan. Now is a great time to contact us to add important information.

Bryan K.: there is oil and gas development of Dove Creek and Dudley Bluffs ACEC-monitoring as roads are put in. Preliminary data-density of plants is constant. Shell proposal adjacent to BLM at Dove Creek; we can work with them. Preliminary monitoring in 2009. Genetic work conducted along road sides.

Gina G.: DBG conservation genetics work to get a handle on what's important for conservation, they are funded to do genetics work.

9. *Oenothera coloradensis* G2S2 LT (new name for *Gaura neomexicana*)

Crystal Strouse: City of Fort Collins populations are doing well. Insects identify plants. Also occurs in Wyoming.

Bonnie H.: S2 in Wyoming-last observed in 2009 on protected site. 15 occurrences/14 drainages. Exotic species, and subdivision threaten some occurrences; rest are on private land, threats unknown. There is ongoing monitoring on Warren Air Force Base. Some also on USFS land.

Andy Kratz: potential habitat on Pawnee National Grassland. Possible reintroduction effort by USFS. Need to manage properly on public land. Largest population in the world established by reintroduction on public land.

Steve P.: designated critical habitat is all in Wyoming.

Susan S-P: Cow Creek drainage appears to be good habitat.

Ellen M.: occurrence few meters from CO/WY border; not as many as thought.

Gina G.: visited this summer, observed new plants.

10. *Pediocactus knowltonii* G1S1 LE

Determined that all of population is in New Mexico. Plants were visited this summer.

11. *Penstemon debilis* G1S1 C

Carla De Young: One new record on BLM submitted by consultant.

Bryan K.: Logan Wash; Occidental Petroleum Corporation (Oxy) property has lots of plants; asked CNAP to help with future planning. Have surveys of most of the population on the Oxy property.

Carol Dawson: still monitoring but access is difficult; number of stems increasing. Clean up going well. Anvil Point plants inside monitoring plots have increased.

Ellen M.: Proposed rule for listing being reviewed, there will then be a 60 day comment period.

Carol D.: Peter Gordon and Carol Dawson (BLM) to monitor anvil plants next year; exact dates are unknown.

12. *Penstemon grahamii* G2S1 denied

DGB monitoring for BLM: population stable if not increasing.

Peter Gordon: population at the north end of Raven Ridge ACEC is increasing.

Andy K.: can you update the last observations? This is important so the record does not become historical!

Susan S-P.: this is very important so please let us know if you have seen it.

Erin R.: Earth Justice is trying to relist from candidate list; Center for Native Ecosystems (CNE) and Colorado Native Plant Society (CONPS) are part of coalition which filed a lawsuit to overturn the decision to deny listing.

Jill H.: need to get data from Peter Gordon and Carol Dawson regarding observations in 2009 from DGB monitoring for BLM.

13. *Penstemon penlandii* G1S1 LE

Steve P.: Steve Yarborough may have found a new site three miles north of Kremmling on County Road 22; site is ten feet from the road.

Ellen M.: power line will go through the population from east to west. Only known from two locations in the entire world! If this is the third, it is very important.

Emily E.: weeds along road near Kremmling at Penstemon site.

Brian E.: visited a reference site this year, plant is doing well.

Bryan K.: proposed ACEC status for this area. We welcome any comments.

14. *Penstemon scariosus* var. *albifluvis* G4T1/S1 C

No new information.

15. *Phacelia formosula* G1S1 LE

Gina G.: funded to bring in *Phacelia* expert to do work taxonomic work and voucher specimens from Laramie River Valley. Collected genetic material from each EO, waiting on results. Many plants

observed in 2009, most on BLM land and State Wildlife Areas, and near airport, and some private land. Have been collecting seeds and vouchers.

Betsy Neely: developed conservation plan for North Park. Nature Conservancy closed on easement for one of the population areas. Still working on protection of largest population through conservation easement.

Ellen M.: USFWS recommends “no change” in status. Collecting seeds from BLM sites. Some seeds have been collected for the seed bank.

Annette Miller: there is a poster of seeds collected for rare species.

Jill H.: Five year review by USFS. No change in status.

16. *Phacelia submutica* G2S2 C

Peggy L: pretty good year; although not as good as some in the past. Found new population and lots of updates. USGS doing soil study for Ellen Mayo and USFWS.

Ellen M.: USGS took soil samples from the length of habitat on Horsethief and Sunnyside Road, will analyze to give profile to show where plants are and are not on the same habitat. The habitat present between Horsethief south of freeway by State Wildlife Area on Sunnyside Road is very good habitat.

Gina G.: at least 20 new gps points taken this year, may be extensions of known occurrences. One site on Plateau Creek State Wildlife Area may be a lone site.

Jenny N.: DBG collected seeds, soil, and leaf tissues. Accumulated iron and cadmium at higher levels, talking with USGS.

Andy K.: USFWS and USFS are collaborating to see what they can do to protect candidate species, putting together a document at national level. New sites straddle BLM and USFS sites.

Gina: more habitat on USFS side that can be looked at.

17. *Physaria obcordata* G1G2S1S2 LT

Bryan K.: Ryan Gulch monitoring dates back to early 90s and is now doing as well as or better than then. Vince Tepedino doing some pollination studies, have asked him to write results, will make available here. Species needs ground nesting bees to reproduce, is self incompatible. This is an exciting study, and will help show the importance of pollination. It is a good argument to protect the habitat for the plants and the bees.

Jill H.: CNAP is monitoring sites in Ryan Gulch.

18. *Sclerocactus glaucus* G3S3 LT

Jenny N.: read six monitoring plots this year; DBG conducting genetic and hybridization study with UNC to look at population diversity between *S. glaucus* and *S. parviflorus*, and collected seeds this year. Escalante Canyon site, work with BLM range staff with the possibility of fencing off area to grazing.

Andy K.: known occurrence on USFS land, not shown on range map; check with Barry Johnston for data.

Susan S-P.: Colorado hookless cactus is the new common name for this plant.

Jill H.: CNAP is monitoring Escalante Canyon for trampling by cattle.

19. *Sclerocactus mesae-verdae* G2S2 LT

Ellen M.: 20 year monitoring report by Janet Coles is due by December 31.

Jill H.: some individual occurrences have not been seen in many years.

20. *Spiranthes diluvialis* G2G3S2 LT

Jill H.: global rank changed by NatureServe to G2G3 from G2.

Bonnie H.: S1S2 in Wyoming. Observed in 2009; poor year. Energy development, exotic weeds, and mining all are threats. Majority are on private lands.

Andy K.: possible sightings on National Forest lands in Wyoming per Kathy Roach. Waiting for confirmation on ID.

Bonnie H.: this would be a signification development.

Steve P.: Bonnie uses models to predict habitats.
Brian E.: negative surveys in Colorado this year.
Eric Petersen: Lynn Reidel says that open space sites in Boulder are doing well.
Scott Smith: the site in Golden/Clear Creek has been trampled by recreational users.
Steve P.: Clear Creek site needs to be looked at for protection.
Denise Larson: new site threatened by kayakers.
Ellen M.: proposal to delist species being worked on.
Don Hazelett: negative findings on ten sites that were surveyed in Wyoming this year.

Review of 2005 G1 Species (led by Jill Handwerk)

1. *Aletes latilobus* G1S1

Peggy L.: three good populations in Colorado National Monument and Rattlesnake Canyon; there are two EORS in the National Monument. Assume populations should be present in other canyons, which are being surveyed. The “mother lode” was not found but two plants were found in Flume Canyon and three in East Pollock Canyon. However, there are none in Devil’s Canyon so we are assuming that there is a larger seed source nearer the top of the canyon but we could not locate it. All of these were in the intermittent stream, which is now dry, on the sandy edges or by rocks in the rock wall.

2. *Alicella sedifolia* (*Gilia sedifolia*) G1S1

No new information.

3. *Atragalus lonchocarpus* var. *hamiltonii* G1S1

No new information.

4. *Astragalus microcymbus* G1S1

Jenny N.: Monitoring since 1995, a general decline in population size has been seen. However, 2008 and 2009 were good years. Fencing has been established to catch snow and keep herbivores out, leading to an increase in fruit set.

Ellen M.: BLM is visiting sites and is working on monitoring.

Jill H.: overall, the species is in decline.

5. *Astragalus schmolliae* G1S1

Ellen M.: visited site during the summer of 2008. There were lots of plants on the mesa but no management plan is in place at Mesa Verde National Park; needs help! Plants need to be protected from spraying, etc.

6. *Cirsium scapanolepis* G1G2QS1

Need more information!

7. *Corispermum navicula* G1?S1

Carol D.: BLM collected tissue for analysis. Two rounds of seeds collected for genetic work to differentiate between *C. navicula* and *C. americanum*. Michelle D. L. is leading the project.

Jenny N.: specimens from Oklahoma are also being used for comparison.

Carol D.: will be put on BLM sensitive species list. Fencing will be used to keep OHV out of areas.

8. *Cryptantha gypsophila* G1G2 S1S2

Peggy L.: found many plants in the Big Gypsum Valley where a known occurrence is. This is a limited range though. There is also an occurrence in the Sinbad Valley. It is toss up as to which occurrence is better. The southern occurrence is small and could be lumped with the other.

Bryan K.: BLM botanist trying to advocate for an ACEC for the species.

Susan S-P.: should this be considered a G2 because of number of populations or stay a G1 because of threats?

Peggy L.: stay a G1 because of threats. It has a limited range.

9. *Draba weberi* G1S1

Jill H.: estimated that there are 80 individuals at the site this year.

Ellen M.: they are further downstream than was previously thought.

Susan S-P.: only location in the world.

Steve P.: possibly the rarest plant globally in Colorado.

Susan S-P.: has it really been looked for? More surveys need to be done.

Ellen M.: there is quite a bit of variation in choice of habitat. Some are in sun, spray, etc.

Brian E.: plant was not present on Hoosier Pass.

Erin R.: positive 90 days findings by the service, along with other G1 species. Comments are due in December for the petition. Ask Ellen.

10. *Erigeron wilkenii* G1S1

Jill H.: needs to be revisited to update data.

Susan S-P.: call folks in Dinosaur National Monument every few years. Information is stale on globally rare species in Dinosaur area.

11. *Eriogonum brandegeei* G1G2 S1S2

Michelle D.L.: DBG monitoring.

Ellen M.: out in BLM sites near Salida recreation and motor bike (OHV) threats. BLM is actively fencing and putting in rocks; active management. Many plants in Garden Park north of Canyon City.

BLM has been monitoring during 2009.

Bryan K.: May have found a new EO for the species. ACEC possible for new Garden Park population. Habitat is unfriendly.

12. *Hackelia gracilentia* G1S1

Jill H.: Peggy suspects it might be on BLM near boundary with Mesa Verde National Park (MVNP). Does not know exactly where the population is located so not sure if area burned in recent fires.

Dave A.: sparse information on exact location. Information in MVNP mapped by grad student in the 1960s. Lots of canyons were mapped but not sure where exact locations are.

Gina: Mesa Verde National Park is hiring a new vegetation specialist.

13. *Lygodesmia doloresensis* G1G2S1

Peggy L.: There were a lot in Rabbit Valley this year; updated occurrences.

Gina: new site at the entrance to McInnis National Conservation Area.

14. *Mimulus gemmiparus* G1S1

Steve P.: During 2005-2006, Dave and Mark Steingraber conducted a thorough survey; as climbers they looked everywhere in the Front Range a few years ago and could not find it; have not been looking lately on National Forests. There are 83 square meters of active habitat in the world.

Rob Billerbeck: considering possible reintroduction to Fountain State Park.

15. *Oreoxis humilis* G1S1

Dina C.: Population on Pikes Peak at Windy Point is doing well.

Steve O.: in 2008, it was observed occasionally.

16. *Penstemon gibbensii* G1G2 S1

Bonnie H.: S1 in Wyoming. Observed six WY occurrences in 2009. Status report completed this year. Only one population; major decline in species. Is this trend present in Colorado? Habitat is severe.

Decline possibly climate related; threatened by exotic species in site with enclosure. Found on BLM Rawlins area, private, and in TNC easement.

17. *Physaria pulvinata* G1S1

Peggy L.: found at Miramonte Reservoir, near Lone Mesa State Park on BLM and State Land Board lands. Lots of plants in one area; still considered only one occurrence. San Juan National Forest unknown. Lots of potential habitat on private land.

Ellen M.: habitat and occurrence found on ridge between private properties and two reservoirs. Lots of plants were seen.

Gina G.: saw plants from the road on private land.

Review of 2006 G2 Species in Southeast Colorado (led by Jill Handwerk)

1. *Asclepias uncialis* ssp. *uncialis* G3G4T2T3S2

Dina C.: many of this year's observations are new populations.

Brian E.: visited numerous sites for a Washington State genetic study with James Riser; will report back when results are available.

Steve P.: site on private property on Pawnee National Grassland has been known since 2004 but has not been seen since then despite annual visits. Private land visited many times. The condition of the site is stable. Should treat this plant as an annual for monitoring purposes. Many of the plants/stems observed above ground are actually one plant connected below ground.

Susan S-P.: most populations are small.

Crystal K.: surveyed Soapstone and did not find it. Plant is elusive.

2. *Cleome multicaulis* G2G3S2S3

Bonnie H.: One extant occurrence in Wyoming with S1 rank. Last observed in 2009 in WY as a rediscovery of one stand in a National Wildlife Refuge. An energy pipeline runs right through the population. Extant in Texas over a century ago. Threats also include exotic species and energy development.

Bryan K.: observed at Mishak Lakes this year.

3. *Delphinium ramosum* var. *alpestre* G2S2

Brian E.: might have more occurrences in southern Colorado, possibly in higher Sangres.

4. *Delphinium robustum* G2?S2?

Brian E.: is there a question whether this is a good species?

Jill H.: yes, we think so.

Don H.: screened for alkaloids, were similar. Jennings annotated all *D. robustum* specimens at CU and RM to *D. ramosum* var. *alpestre*.

Susan S-P.: even if species lumped, may be still be a G3 or G2G3.

5. *Draba exunguilata* G2S2

Jill H. now found in Chaffee County.

6. *Draba grayana* G2S2

Brian E.: does not think it is as rare as rank indicates.

7. *Draba smithii* G2S2

Tim Hogan: Not uncommon on west side of Sangre de Cristo Mountains, however, distribution is narrow. Need to get out early to see.

Jill H.: maybe a G2G3.

Peggy L.: site at East Fork of San Juan River is being monitored. Last observations in 2008 and 2009.

8. *Grindelia inornata* G4/S4
 Jill H.: no longer tracked because the species was found to be common.
9. *Herrickia horrida* G2?S1
 Jill H.: needs survey work.
 Don H.: in New Mexico in Mills County. Growing in garden at Trinidad Junior College; is being monitored by the school. Needs more specimens for work on alkaloids. Hartman found by Raton Pass right next to the road.
 Dave A.: think Hartman may have collected in Wet Mountain Valley in 1998.
 Brian E.: think not, but will check on Wet Mountain Valley.
10. *Lesquerella calicicola* G2S2
 Dina C.: very plentiful on shale barrens in Las Animas County. New populations were found.
 Jill H.: considering a rank change from G2/S2 to G2G3.
11. *Nuttallia (Mentzelia) chrysantha* G2S2
 Susan S-P.: found a new occurrence outside Canyon City.
 Brian K.: Garden Park/BLM has a new occurrence.
12. *Nuttalia (Mentzelia) densa* G2S2
 Susan S-P.: Cristo project on Arkansas River set for 2011. This is occurring in the railroad corridor and there is expected to be a lot of visitor traffic which might be an issue, however the ground disturbance from the project itself is not alarming. Hopefully, BLM will take visitor traffic into account.
 Brian E.: should call local BLM office and comment, there are new people on staff there.
 Dina C.: worked with CNHP on a survey and mapping effort for Cristo project; BLM has information. Species seemed to do better with disturbance.
13. *Oenothera harringtonii* G2G3S2S3
 Dina C.: not a very good year, haven't seen this year. However, was plentiful in spring and early summer of 2007, and 2008 was pretty good year as well.
 Susan S-P.: estimated number of individuals seems quite low since it is more plentiful.
 Brian E.: there are new observations from Ron Hartman's students but not sure yet if these are actually new sites.
14. *Oonopsis foliosa* var. *monocephala* G3G4T2S2
 Dina C.: saw this summer; fairly limited geographically although a lot were present where found.
12. *Oonopsis puebloensis* (*Oonopsis* sp. 1) G2S2
 Jill H.: three new locations this year from S. Kettler. Species is limited in range and faces high threats from development.
13. *Oxybaphus rotundifolius* (*Mirabilis rotundifolia*) G2S2
 Susan S-P.: extended western range from observation west of Canyon City in 2009.
 Betsy N.: working on conservation easement for 10% of the population.
14. *Penstemon degeneri* G2S2
 Brian E.: some management issues in Locke Park, undergoing management change. Tried to monitor but has not been blooming in last few years.
 Steve O. I was up there this year.

Carol E: 3rd season for population studies. 10 new populations this year in Custer and Teller Counties. Cattle heavily graze this species. A new plot was set up last year; no change this year. There is talk of monitoring the species on Curly Peak.

15. *Ptilagrostis porteri* G2S2

Brian K.: working to designate East Lost Park as a Natural Area. This area is wilderness but is grazed and there is a lack of fences.

Emily E.: the area is grazed very hard.

Steve P.: Ben Legler found it on Ted Turner's Ranch in northern New Mexico, near the border with Colorado; this is a state record for New Mexico. It is in a small fen and not a large site.

16. *Telesonix jamesii* G2S2

Dina C.: at Windy Point, it is found everywhere from the subalpine to the lower montane; also found on the top of Norad Mountain and at Cheyenne Mountain Park.

Gina: is this species is found in Nevada?

Susan S-P.: this species is just known from Colorado and New Mexico. Taxonomic work is being conducted.

Emily E.: this one definitely different than the species found in Nevada. It keys to *T. jamesii*, but is different if you read the species description.

Scott Smith: observed in Stanley Canyon at the Air Force Academy.

Susan S-P.: is the Air Force Academy site just a historical record? It would be good to get an update.

Review of 2007 G2/G3 Species in Northeast CO (led by Jill Handwerk)

1. *Aletes humilis* G2G3S2S3

Jill H.: occurrences have been combined.

Steve P.: important land exchange occurring; 300 plants will be lost from federal ownership. However, botany technicians found over 2000 additional new plants in secure areas on USFS to offset the loss.

There are probably more plants in the local area but the taxon is still considered rare.

2. *Aletes nuttallii* (*Lomatium nuttallii*) G3S1

Bonnie H.: Wyoming is the center of distribution but it is not tracked there. It is found across a tier of counties, especially in the southern and central parts of the state. Rarely found in Montana in the Black Hills. This plant is substrate specialist and may be affected by road development and/or coring.

However, it is not threatened in Wyoming and perhaps a change in ranking is needed. It is endemic on rangeland.

3. *Aquilegia saximontana* G3S3

No new information.

4. *Astragalus sparsiflorus* G3?S3?

Rich Scully: at the Rocky Mountain Herbarium there are quite a few collections. Two locations in the North Fork Basin were visited this summer. 100-150 plants were documented.

5. *Bolophyta alpina* (*Parthenium alpinum*) G3S3

Bonnie H.: in Wyoming, there are 53 occurrences with two centers of distribution and large populations. Threats include pipeline development, coring, and road construction. It is found on BLM-Casper, National Guard, state, and private land. This species is not currently tracked in WY.

Steve P.: 99% of plants occurring in Colorado are found in a large population on the Pawnee National Grasslands that may number one million. Threats are low; a little grazing occurs on the site, and a pipeline corridor. Some plants taken by corridor construction but not a viability issue for species.

Susan S-P.: this species is considered to be the same as *Bolophyta tetraeuris*. Whether it is a G3 in southeast Colorado has yet to be determined.

6. *Carex oreocharis* G3S1

Lynn Reidel: in Jefferson County, a relatively new location was found in 2007 or 2008 on Rocky Flats Mesa.

Bonnie H.: new occurrences in WY extend range north; found in WY on Medicine Bow National Forest, BLM, and on state and private land.

7. *Draba crassa* G3S3

No new information.

8. *Draba globosa* G3S1

No new information.

9. *Draba streptobrachia* G3S3

No new information.

10. *Eriogonum exilifolium* G3S2

Steve P.: will review data to see if there is a new site on Arapahoe/Roosevelt National Forest or state land found by one of Ron Hartman's students, Sarah Nunn,.

Jill H.: one new CO occurrence from 2008 is being verified.

11. *Heuchera hallii* G3S3

Brian E.: there is a new site from Blanca Peak.

Dina C.: in 2009, collections were made and it was observed on the south slope of Pikes Peak.

12. *Nuttallia (Mentzelia) sinuata* G3S2

Bonnie H.: in Wyoming, is ranked S2 but is not tracked. There are nine collections in southeast corner of Wyoming; found primarily along roadsides on BLM, state and private land.

Jill H.: six new CO locations mapped in 2009.

13. *Nuttallia speciosa* G3?S3?

Bonne H.: recently discovered (1998) in Wyoming just over the border with CO on roadside; state land. It is ranked S1 but current status is unknown.

Dave Anderson: there are 30 species in this group and taxonomy is a big mess and has not been resolved. The Rocky Mountain Herbarium has more "dots locations" than we do in CO.

Jill H.: there is some CO data in backlog, waiting on funding to process.

Susan S-P.: need to collect good specimens with fruit.

14. *Oenopsis wardii* G3S1

Jill H.: Recently confirmed in Colorado.

Bonnie H.: S3 in WY; there are 53 occurrences in Wyoming, 17 are very large. Road development may favor the species by a reduction in competition, unless repeatedly scraped to manage exotic species.

15. *Phacelia denticulata* G3? S3?

Rich S.: was found five miles east of Estes Park occurring with *Phacelia Alba* and prefers disturbed areas.

Crystal S.: found two locations at Soapstone Prairie. One had 300 plants and was located near a trail.

16. *Physaria bellii* G2G3S2S3

Crystal S.: population was severely impacted by prairie dogs but recovering since prairie dogs was removed. Appears to come back nicely after fire.

Bryan K.: toad flax is growing with it in Larimer County at Park Creek; the toad flax is being carefully managed.

17. *Potentilla ambigens* G3S1S2

Dane H.: at the Air Force Academy there is a new population that looks different. It may be a cross between *P. pulcherrima* and *P. hippiana*.

Rich S.: doing well in Estes Park.

18. *Potentilla rupincola* G2S2

Rich S.: permitted to collect a voucher specimen from the subalpine in Rocky Mountain National Park which is not as polluted with *P. effusa*. Trail goes through two populations but the plants are still growing in the trail area. Originally collected by Ruth Ash Nelson, plants still look as good as they did 15 years ago. There is also a lot of *P. rupincola* on south side of Estes Park. Do not think that current taxonomy is sufficient.

Susan S-P.: most of CNHPs information is from Rich's volunteer work.

Steve P.: Ana Child conducted a great deal of research on taxonomy for her never-finished Ph.D. She concluded that it should be maintained as a separate taxon that readily hybridizes with *P. effusa effusa*. She feels that it should be managed as a rare plant.

19. *Sisyrinchium pallidum* G2G3S2

Janis Huggins: found two plants in North Park at Crystal Springs in 2009.

Crystal S.: a population of hundreds present on Soapstone Prairie; flowers observed to open between noon and 6:00pm.

Annette M.: one was found at a historical location in Rocky Mountain National Park that had been dug up. There is in an invasion of Canada thistle but it is not threatening. Some control efforts have been made with mixed results.

Bonnie H.: it is an S2 in Wyoming.

Review of 2008 G2 Species in Southwest CO (led by Jill Handwerk)

1. *Astragalus anisus* G2G3S2S3

No new information.

2. *Astragalus cronquistii* G2S2

No new information.

3. *Astragalus equisolensis* (*A. desperatus* var. *neeseae*) G5T1S1

Ellen M.: BioBlitz survey in Utah found a lot of plants; Peggy L. concurred.

Andy K.: does it merit a T1 rank?

4. *Astragalus iodopetalus* G2S1

No new information.

5. *Astragalus naturitensis* G2G3S2S3

Peggy L.: she and Janis H. found it all over the place; could consider rank change to full G3 or G3G4.

6. *Astragalus piscator* G2G3S1

No new information.

7. *Astragalus rafaensis* G2G3S1
Peggy L.: has found many more.
8. *Boechera (Arabis) crandallii* G2G3S2
Dave A.: record in Grand County.
Brian E.: found new occurrences on east side of Monarch Pass, and a few sites on Gunnison side.
Proposed that it be on the USFS sensitive species list. Barry Johnston estimated six million individuals in the Gunnison Basin.
Bonnie H.: S1 in WY; species assessment has been written for it but voucher specimens might still be needed.
9. *Camissonia eastwoodiae* G2S1
No new information.
10. *Castilleja puberula* G2G3S2S3
Susan S-P.: the number of individuals is much higher; range map should be updated.
11. *Cirsium perplexans* G2G3S2S3
Peggy L.: was also observed in 2009; acts similar to a weed. It has take over areas of poor land. It should be taken off the tracked list.
Susan S-P.: *Ambrosia linearis* is all over roadsides, acting like a weed too, but we look for it in its native habitat. These plants in the native habitat need to be protected.
Peggy L.: plants are still abundant in weedy areas after five years.
Kim: northwest of DeBeque there are many plants.
Andy K.: do some of these species require disturbance? If so, we need to manage for that, especially in mature habitats.
Susan S- P.: land managers should not prevent natural disturbance from occurring, if possible.
12. *Draba graminea* G2S2
Peggy L.: there is a new population in Red Mountain Pass; seems to be found in the right kind of area.
13. *Erigeron kachinensis* G2S1
Peggy L.: was observed at known CO site in 2009.
14. *Eriogonum clavellatum* G2S1
Jill H.: all occurrences will become historical next year.
Gina G.: some genetic work is being done; there may be an opportunity to get access when looking at other plants.
15. *Eriogonum coloradense* G2S2
No new information.
16. *Lepidium crenatum* G2S2
Peggy L.: found abundantly on BLM land near Dominquez Canyon in 2009; might become a natural area.
17. *Lesquerella pruinosa* G2S2
Bryan K.: saw occurrence on Forest Service land.
18. *Lesquerella vicina* G2S2
No new information.

19. *Lomatium concinnum* G2G3S2S3
No new information.
20. *Lupinus crassus* G2S2
No new information.
21. *Machaeranthera coloradoensis* G2G3S3
Andy K.: subspecies are lumped now. Should there be T ranks?
Bonnie H.: other varieties are lumped.
22. *Oreocarya osterhoutii* G2G3S2
Peggy L.: possibly in McInnis Canyon this year. Hopes it is in Dominguez Canyon but flowers were gone; need to go back.
23. *Physaria alpina* G2S2
No new information.
24. *Physaria rollinsii* G2S2
No new information.
25. *Puccinellia parishii* G2G3S1
Peggy L.: found many plants in general area around Miramonte as well as six sites in Lone Mesa State Park.
Bryan K.: working on State Natural Area for Miramonte Reservoir.
26. *Salix arizonica* G2G3S1
Brian E.: there is just the one site on the Rio Grande National Forest; horses have been pastured within enclosure; enclosure has a gate on each side allowing access. Plants have been trampled with 1/3 dying off (2006?). Situation looked terrible.
Steve P.: supposedly the rarest non-endemic plant in Colorado. However, there are some big problems with the enclosures. Enclosures need gates for egress but then are used as holding corrals. There is no easy solution to enclosures.
Andy K.: in some places, hunters are using enclosures as pens. For wildlife we do habitat enhancement, why not with rare plants? Why not enhance the plant population by doing root cuttings and establishing new populations. This plant was far more numerous in the past. Cattle have a negative effect on it so it should be placed in suitable habitat that is not subject to grazing.
Tim H.: is there any signage on the enclosure? There is no record for this plant in the Sangre de Cristos, however, there is potentially good habitat on the east slope of the San Luis Valley.
Steve P.: signage disappears, even when in Spanish.
27. *Thelypodopsis juniperorum* G2S2
Andy K.: are there Forest Service and National Park occurrences?
Tim H.: yes, it is in the Black Canyon of the Gunnison.
28. *Townsendia glabella* G2S2
Peggy L.: very common in Pagosa Springs area; especially where disturbances have occurred. Found in the same places as *Ipomopsis polyantha*. Observed in 2009.
29. *Townsendia rothrockii* G2G3S2S3
No new information.

New Taxon Presented at Symposium in 2009 (presented by Susan Spackman Panjabi)

1. *Anticlea vaginatus* G2S2
Susan S.P.: Possible SH, no new information. Found in Dinosaur NP; Contact Tamara Naumann for information.
2. *Astragalus debequaeus* G2S2
Ellen M.: was seen this year. Plants under utility towers did not do well this year.
Carol D.: perhaps monitoring in Grand Junction should be expanded.
3. *Boechera glareosa* G1G2S1
Susan S.P.: no specimens here for viewing, and no information.
4. *Botrychium* tax. nov. *furcatum* (sp. 6) G1G2S1S2
Steve P.: Taxonomy still being worked out.
Scott Smith: surveyed for 160 hours (with 2 people) in Arapahoe Roosevelt NF, but no new sites found.
5. *Carex stenoptila* G2S2
No new information. Not tracked in Wyoming.
6. *Ipomopsis aggregata* ssp. *weberi* G5T2S2
Gina G.: perhaps seen near Walden? Working on ID of the specimen.
Kevin K.: does it hybridize?
Jill H.: possibly seen this summer.
Brian E.: site on Muddy Pass.
Andy K.: typo on slide with ranking.
Kevin K.: very common in areas on Rabbit Ears where they are found.
7. *Ipomopsis globularis* G2S2
Susan S.P.: narrow global distribution.
Andy K.: plant dropped from USFS sensitive species list.
Susan S-P.: is the plant back on the revised list?
Andy K.: revision of sensitive species list on a nationwide basis.
Peggy L.: is there a long list of plants that might or might not be included?
Andy K.: very little headway has been made.
Brian E.: Weston Pass site had smooth brome.
Tim H.: was it smooth brome or an alpine look alike like *Bromopsis pumPELLIANA*?
Brian K.: trying to get established Research Natural Area on Hoosier Pass.
8. *Lesquerella parviflora* G2S2
Brian K.: found at South Cathedral Bluffs, and Piceance State Wildlife Area. It is growing in right-of-way of pipeline. Spraying for leafy spurge is a problem.
9. *Limnorchis (Platanthera) zothecina* G2S1
No new information.
10. *Mentzelia rhizomata* G2S2
Susan S.P.: taxonomy recently reworked. Known from Wasatch Formation.
Peter G.: saw it up on Anvil Points in 2009.
Brian K.: often with *Penstemon debilis* and *Thalictrum heliophilum*.

11. *Mertensia humilis* G2S1

Bonnie H.: not tracked in Wyoming.

Susan S.P.: very little information on this species in Colorado. Is it possibly on the ARP?

12. *Oenothera acutissima* G2S2

Peter G.: there are possibly lots more plants at the site on Cold Springs Mountain than have been recorded. It was seen last year.

13. *Oxytropis besseyi* var. *obnapiformis* G5T2S2

Susan S.P.: Weber does not have the information on variety. The original description is in the *Flora of North America*.

14. *Penstemon fremontii* var. *glabrescens* G3G4T2S2

Peggy L.: I was not able to find the species this year.

Brian K.: this plant is a priority because of gas and oil.

Dave A.: perhaps a record in Garfield County from the Rocky Mountain Herbarium.

15. *Penstemon scariosus* var. *cyanomontanus* G4T2S2

No new information.

16. *Saussurea weberi* G2G3S2

Susan S-P.: new location in Custer County.

Tim H.: found on calcareous substrate in Pike San Isabel NF this year.

Brian E.: two years ago, found near Alma. Estimate of about 2,000 new plants.

Tim H.: jumps around in location; the populations are disjunct.

17. *Thelypodium paniculatum* G2S1

Bonnie H.: not tracked in Wyoming.

Dave A.: was a specimen collected across the border?

Conclusion

If you would like to submit information or photos on any rare plant occurrences for which you have knowledge, use the forms available at the CNHP website and provide as much information as possible, particularly directions to the site, and the size and condition of the rare plants. Mail completed forms to CNHP at the address below. Field forms can be downloaded from <http://www.cnhp.colostate.edu/exchange/submit.asp>
For a complete list of rare species in Colorado tracked by CNHP, visit the CNHP website at:
<http://www.cnhp.colostate.edu/teams/botany.asp>

Colorado Natural Heritage Program
Colorado State University
8002 Campus Delivery
Fort Collins, CO 80524

List of Presenters/Organizers

Jill E. Handwerk
Botany Information Manager
Colorado Natural Heritage Program
Colorado State University
8002 Campus Delivery
Fort Collins, CO 80523-8002
Phone 970/491-5857
Fax 970/491-3349
Email jill.handwerk@colostate.edu

Bonnie Heidel
Botanist
Wyoming Natural Diversity Database
University of Wyoming, Dept. 3381, 1000 University Avenue
Laramie, WY 82071
Phone 307-766-3020
Email bheidel@uwyo.edu

Susan Spackman Panjabi
Botanist
Colorado Natural Heritage Program
Colorado State University
8002 Campus Delivery
Fort Collins, CO 80523-8002
Phone 970/491-2992
Fax 970/491-3349
Email susan.panjabi@colostate.edu

Steve J. Popovich
Botanist
U.S. Forest Service
Arapaho-Roosevelt National Forests
& Pawnee National Grassland
2150 Centre Ave, Building E
Fort Collins, CO 80526-8119
Phone 970/295-6641
Fax 970/295-6696
Email sjpopovich@fs.fed.us

Participants

NAME	AFFILIATION	NAME	AFFILIATION
Anderson, David	CNHP	Wahle, B.	TNC
Billerbeck, Rob	CNAP	Wilson, Denise	EcoPlan WRV, CNAP
Borland, Jim	DBG	Yeager, Erika	
Brummer, Lori	USFS - ARP	Stacey	CoNPS
Burkhart, Beth	self		
Clark, Dina	DBG		
Cermak, Joanne	CoNPS		
Curzon, Miranda	CNAP		
Daniels, Nan H.	Nahada LLC		
Dawson, Carol	BLM		
DePregner-Levin, Michelle	DBG		
Dwire, Kate	USFS, CoNPS		
Elliott, Brian	EEC		
Elliott, Emily	EEC		
Glenne, Gina	USFWS		
Gordon, Peter	BLM		
Grant, Tom	CSU/CoNPS		
Handwerk, Jill	CNHP		
Hairy, Bob	CoNPS		
Hazlett, Don	CoNPS		
Heath, Ellen	CoNPS/CNHP		
Heidel, Bonnie	WYNDD		
Henson, Ann	CoNPS		
Hogan, Tim	CU Herbarium		
Huggins, Janis	CNHP		
Kratz, Andrew	USFS		
Kovacs, Kevin	USFS		
Kurzel, Bryan	CNAP		
Larson, Denise	ERO		
Larson, Jill	USFS-Black Hills		
Laughlin, Marion	CoNPS		
Levore, Mitchell	CoNPS		
Lyon, Peggy	CNHP		
MacBryde, Bruce			
Mayo, Ellen	USFWS		
Merger, Daryl	Med Inc.		
Miller, Annette	Ft. Collins CoNPS		
Myers, Bonnie	USFS		
Neale, Jenny	DBG		
Neely, Betsy	TNC		
Ommelev, Ron van	EcoPlan		
Popovich, Steve	USFS		
Righter, Sandy	CoNPS		
Riedel, Linda	City of Boulder Open Space		
Robertson, Erin	CNE		
Shaw, Allison	Trees, Water, & People		
Smith, Linda	CoNPS		
Smith, Scott F.	CoNPS		
Spackman-Panjabi, Susan	CNHP		
Tasker, Lisa	E.M. Ecological, LLC		
Tuttle, Hazel	retired		

6th Annual Colorado Rare Plant Symposium
North/Central Colorado G2's

GNAME	SNAME	GRANK	SRANK	ENDEMIC	FEDSENS	USESA
<i>Zigadenus vaginatus</i>	<i>Anticlea vaginatus</i>	G2	S2	N		
<i>Astragalus debequaeus</i>	<i>Astragalus debequaeus</i>	G2	S2	Y	BLM	denied
<i>Boechera glareosa</i>	<i>Boechera glareosa</i>	G1G2	S1	N		
<i>Botrychium sp 6</i>	<i>Botrychium sp 6</i>	G1G2	S1S2	Y	USFS	
<i>Carex stenoptila</i>	<i>Carex stenoptila</i>	G2	S2	N		
<i>Ipomopsis aggregata ssp. weberi</i>	<i>Ipomopsis aggregata ssp. weberi</i>	G5T2	S2	N	USFS	
<i>Ipomopsis globularis</i>	<i>Ipomopsis globularis</i>	G2	S2	Y	USFS	
<i>Lesquerella parviflora</i>	<i>Lesquerella parviflora</i>	G2	S2	Y	BLM	
<i>Platanthera zothecina</i>	<i>Limnorchis zothecina</i>	G2	S1	N		
<i>Mentzelia rhizomata</i>	<i>Mentzelia rhizomata</i>	G2	S2	Y		
<i>Mertensia humilis</i>	<i>Mertensia humilis</i>	G2	S1	N		
<i>Oenothera acutissima</i>	<i>Oenothera acutissima</i>	G2	S2	N	BLM	denied
<i>Oxytropis besseyi var. obnapiformis</i>	<i>Oxytropis besseyi var. obnapiformis</i>	G5T2	S2	N		
<i>Penstemon fremontii var. glabrescens</i>	<i>Penstemon fremontii var. glabrescens</i>	G3G4T2	S2	Y		
<i>Penstemon scariosus var. cyanomontanus</i>	<i>Penstemon scariosus var. cyanomontanus</i>	G4T2	S2	N		
<i>Saussurea weberi</i>	<i>Saussurea weberi</i>	G2G3	S2	N	BLM	
<i>Thelypodium paniculatum</i>	<i>Thelypodium paniculatum</i>	G2	S1	N		