

**The 5th Annual Colorado Rare Plant Symposium:
G2 Plants of Colorado
September 5, 2008
8 am - 4 pm
Holiday Inn Express
Montrose, Colorado**

Meeting Minutes

Sponsors:

CoNPS, FWS, CU Herbarium, CNHP, USFS

Recorders: Betsy Neely, Peggy Lyon, Jill Handwerk

Introduction and ground rules: Steve Popovich, USFS

Thanks to USFS, CNHP, CONPS, USFWS, and University of Colorado Herbarium for supporting this symposium with time and funding.

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. This year we will review imperiled (G2) species known from the southwest quadrant of Colorado.

Editor's note: You may view the accompanying Powerpoint presentation for additional information on each species on the CNHP website

<http://www.cnhp.colostate.edu/teams/botany.asp> and go to the 2008 Rare Plant Symposium section.

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
Two occurrences became historical this year.
2. *Botrychium lineare* G2S1
Steve Popovich: *B. lineare* is no longer a candidate, global rank is G2.
3. *Eriogonum pelinophilum* G2QS2
Ellen Mayo: BLM has finished fencing the population at Fairview South ACEC. FWS is doing 5 year review this year, to evaluate whether to expand the critical habitat. Weber says recently found in Four Corners
Question to answer this year-is it in Montezuma Co?
Brian Kurzel: monitoring studies have been instituted on BLM and private land
Missy Siders: BLM is monitoring, found many seedlings this year.
4. *Gaura neomexicana* G3T2S1 LT
Now published as *Oenothera coloradensis* ssp. *coloradensis* (Systematic Botany pub).
5. *Ipomopsis polyantha* G1S1 C
Ellen M.: town of Pagosa Springs has annexed land proposed as commercial in the heart of *I. polyantha* habitat. Need to address strategies, FWS proposing to list species soon because of imminent threats. Monitoring is ongoing, Peggy Lyon set up new demographic plots.
RPCI held a Conservation Action Plan workshop to develop strategies
6. *Lesquerella congesta* G1S1 LT
Ken Holsinger: BLM is fencing a population in Duck Creek, to be completed in October. Monitoring is showing an upward trend due to wet years. Ken has found 3 new populations near Dudley Bluffs ACEC on atypical habitat on Uinta Formation on heavily wooded PJ in very shallow soils, although usually it is on 13 Mile Tongue of Green River Shale. There are some populations on private land, mostly on energy company land, including one on Shell property.
Brian K.: CNAP is interested in designating a State Natural Area, will be called West Duck Creek. Ken H. is working with CNAP to designate Duck Creek and Ryan Gulch as state natural areas. Brian K is monitoring population at Duck Creek. Numbers are stable, with average density same as in 2002. Another site near the road is getting smaller, now has only half of 2002 plant density.
Ken H.: Dudley Bluffs population shows a slight increase from last year but is still lower than in 2002. Slopes may be impacted by researchers, so may cut back monitoring in future.

7. *Pediocactus knowltonii* G1S1 LE
 This doesn't actually occur in Colorado. GIS is more accurate and indicates it is only in NM.
 Ellen M.: CPC requested to collect seeds, but Ellen says they shouldn't collect because there are not enough individuals.

8. *Penstemon debilis* G1S1 C
 Ellen M.: FWS is proposing listing. Colin Ewing: FWS proposing as threatened, but could change. CNAP has expanded natural area at Mount Calahan and working with Occidental Petroleum who is making great efforts to protect plant in light of oil and gas development. CNAP is working with them to implement BMPs to reduce the impacts to the plant. One of questions is what its pollinators are, in order to recommend buffers. Pollinators are generalist, so not sure how much buffers should be required.
 Brian K.: CNAP negotiated agreement with Occidental Petroleum on strict management practices (such as addressing noxious weeds, storm water and dust abatement). Question: what is an individual? Brian wants to talk to CNHP about what constitutes an individual.
 Ellen M.: At the population at the Anvil Points oil shale reclamation site, BLM and FWS are working to reduce the impacts of closing the site. The road was damaged earlier this year so they couldn't get in, but now road has been improved. (Peter Gordon is working with Carol Dawson, BLM)

9. *Penstemon grahamii* G2S1
 Peter G. is monitoring, density numbers are stable. Peter hiked the entire Raven Ridge, finding a whole series of microsites, and concluded that the existing map is valid. Utah NPS is also monitoring. Jill H. will check with Peter after the meeting for results.

10. *Penstemon penlandii* G1S1
 Michelle D-L visited, found and counted a large number of plants, population appears stable. She found some new sites to south, and will get info to CNHP.

11. *Penstemon scariosus* var. *albifluvis* G4T1S1 C
 Ken H.: it is still present at all sites. Ken will provide new information to CNHP, to update CNHP data from 1999.

12. *Phacelia formosula* G1S1 LE
 RPCI is holding rapid CAP meetings for this species this fall. Ellen M.: went to Laramie River site and checked mature seeds- and they look like the North Park Phacelia. TNC is negotiating conservation easements with private landowners. FWS will work on 5 year review this year.

13. *Phacelia submutica* G4T2S2 C
 Ellen M.: Species is being proposed for listing in next round. FWS has grant for USGS to do soil analysis and soil spectrometry to get something measurable to

help find plants. It was observed in a few places this year, hopefully analysis will help oil and gas companies avoid habitat
Brian K.: observed some in 2008.

14. *Physaria obcordata* G1G2S1S2 LT

Ken H.: visited, found a bumper crop of seedlings this year, tagged lots of new individuals. Ellen M.: *Lesquerella* is now *Physaria*.

15. *Sclerocactus glaucus* G3S3 LT

Missy Siders: Power line survey in Delta Co, found 4,000- 5,000 individuals.

16. *Sclerocactus mesae-verdae* G2S2

Jill H.: final monitoring report in progress.

17. *Spiranthes diluvialis* G2S2 LT

Nature Serve changed rank to G2G3 from G2, Mindy Wheeler found new population this last year.

Review of 2005 G1 Species (led by Jill Handwerk)

1. *Aletes latilobus* G1S1

Ellen M.: FWS will do 12 month finding, UT has lead, FWS will provide info. from CO to UT.

2. *Aliciella sedifolia* G1S1

No new data.

3. *Astragalus hamiltonii* G1S1 -Ellen M.:

UT will be doing a 12 month finding.

4. *Astragalus microcymbus* G1S1

Ellen M.: FWS is doing a 12 month finding. Michelle D-L: DBG collected seed, will start to look at other sites, will send rabbit scat off to verify if they are eating the milkvetch, will do genetics work to see how genetically related the different sites are. Species is still decreasing in numbers.

5. *Astragalus schmolliae* G1S1

Ellen M.: FWS doing 12 month finding to see whether it is warranted for candidate status. (Forest Guardians petitioned for listing many species).

6. *Cirsium scapanolepis* G1G2QS1

Need good photo, no new information.

7. *Corispermum navicula* G1?S1

Taxonomic issues?

8. *Cryptantha gypsophila* G1G2S1S2
Ellen M.: FWS did an assessment of this species, not enough info, still collecting information, not a potential candidate anymore, needs more information.
9. *Draba weberi* G1S1
Steve Olson: Steve saw in fruit this year, at Monte Cristo Creek in Summit county. Ellen M.: species has been petitioned for listing, FWS doing a 12 month finding, Steve Olson worked with CO Springs Utilities who is working on improvements to existing dam, consulted with FWS. Steve Olson visited in 07 and 08, occurs on rocks mostly in canyon. With only 1 or 2 sites with few individuals this is Colorado's rarest endemic species known.
10. *Erigeron wilkenii* G1S1
No new data.
11. *Eriogonum brandegei* G1G2S1S2
Michelle D-L: counted and it is doing fine, one occurrence is questionable. Ellen M.: FWS doing 12 month finding (in response to Forest Guardian petition, based on G ranks).
12. *Hackelia gracilentia* G1S1
Peggy Lyon: will be meeting with Mesa Verde staff and others in October. May be doing some survey in 2009 or 2010.
13. *Lygodesmia doloresensis* G1G2S1
Peggy L: found big new population in Rabbit Valley far from Gateway area. Peggy also surveyed in Gateway area in 2008 and updated records.
14. *Mimulus gemmiparis* G1S1
Rob Billerbeck: found new small population at Stanton State Park, D. Steingraber is looking at reintroduction in new seeps. Beardsley is rock climbing (authority on *Mimulus*) to find potential reintroduction sites. Plant occupies only a total of 80 square meters-very rare (call Rob B. for contact info for Beardsley)
15. *Penstemon gibbensii* G1G2S1
Ellen M.: WY has lead on 12 month finding.
16. *Physaria pulvinata* G1S1
Peggy L.: new populations found at Lone Mesa State Park (near town of Dolores). The other main location is at Miramonte Reservoir. Brian K.: CNAP will pursue Natural Area designation with CDOW. Ellen M.: FWS is doing an assessment- new pops, new threats, needs to determine whether it warrants listing. Peggy L.: there is a lot of potential habitat – along Dolores – Norwood Road on white shale. Brian K.: Brian has contacts for getting access for next year from wildlife technician at Miramonte.

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

1. *Asclepias uncialis* G3G4T2T3S2
Steve O.: found one new site in Comanche N.F., and is monitoring.
Approximately 650 clumps in world-most on private land. He revisited existing occurrence, one in NE Colo. -found in 2004-Steve P. has looked for it on Pawnee National Grassland every year 2004-2008 but still has only one small site on adjacent private land. That site has not appeared above ground since discovery in 2004. It's perennial but doesn't come up every year, can find by smell from 100 ft away.
2. *Delphinium ramosum* var. *alpestre* G2S2
Not well known or understood. Steve O.: Tass Kelso has observed in Mosquito Range. Action: contact Tass Kelso.
3. *Draba exunguiculata* G2S2
Steve P.: A contractor transplanted 5 plants in Winter Park that were going to be impacted by new ski lift, has not checked on success yet.
4. *Draba grayana* G2S2
No new data.
5. *Draba smithii* G2S2
Peggy L.: set up monitoring last year, monitoring at East Fork of San Juan, couldn't get there this year because road closed
6. *Grindelia inornata* G4S4
Species no longer tracked, abundant.
7. *Herrickia horrida* G2?S1
No new data.
8. *Lesquerella calicicola* G2S2
Potential to move to G3 or split rank of G2G3, shale barrens habitat threatened by residential development. Brian K.: working with State Park and State Wildlife Area to designate habitat as a natural area.
9. *Nuttalia (Mentzelia) chrysantha* G2S2
No new data.
10. *Nuttalia (Mentzelia) densa* G2S2
No new data.

11. *Oenothera harringtonii* G2S2
More occurrences found in 07 by CNHP in SE Colorado. Steve O.: Chicago Botanic Gardens doing pollination work. Jill H.: split rank-CNHP left as G2G3 because many plants are in road cuts, and some are historic occurrences
12. *Oenopsis foliosa* var. *moncephala* G2G3T2S2
No new data.
13. *Oenopsis puebloensis* G2S2
Not published yet. Action: contact Greg Brown at WY. WY to finalize the publication of this species
14. *Oxybaphus rotundifolius* G2S2
Betsy Neely: didn't come up this year in Arkansas Valley because of drought
15. *Penstemon degeneri* G2S2
Steve O.: Carol English is working on this; only 10% of numbers from last year, two occurrences to west are misidentified and are actually *P. griffinii*
16. *Ptilagrostis porteri* G2S2
Steve O.: found good population west of Fairplay in Fourmile Creek area-2.5 acres; petitioned because of water project that didn't happen, FWS didn't have enough information to warrant listing (until another dam is proposed). Rob B.: will do survey at Cheyenne Mt. next summer. Species is at Stanton State Park- Rob found lots more of it last year.
17. *Telesonix jamesii* G2S2
No new data.

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

1. *Aletes humilus* G2G3S2S3
Steve P.: Have been looking, but not finding more. TNC and local partners are working on conservation easements protecting private lands (contact Heather Knight, TNC for more details)
2. *Aletes nuttallii* G3S1
No new data.
3. *Aquilegia saximontana* G3S3
Steve P.: Scott Smith may have found a new occurrence this summer. Most sites are naturally well protected.
4. *Astragalus sparsiflorus* G3?S3?
No new info, need photo!

5. *Bolophyta (Parthenium) alpina* G3S1
Most occurrences are on Pawnee National Grasslands. Steve P.: Forest Service allowed a pipeline that wiped out 1000 or more plants. FS did extensive surveys and found extensive occurrences, numerous plants (over a million), low growing and protected from livestock grazing. The only other known large site is in Wyoming, which may have a million plants.
6. *Carex oreocharis* G3S1
No new data.
7. *Draba crassa* G3S3
No new data.
8. *Draba globosa* G3S1
No new data.
9. *Draba streptobrachia* G3S3
No new data.
10. *Eriogonum exilifolium* G3S2
No new data.
11. *Huechera hallii* G3S3
Steve O.: this is the most common *Heuchera* in Wet Mountains
12. *Mentzelia sinuata* G3S2
Steve P.: contact Don Hazlett for new information.
13. *Mentzelia speciosa* G3?S3?
Steve P.: some taxonomic issues.
14. *Oonopsis wardii* G3S1
Mostly WY species, but also in Colo. in the Laramie River Valley.
15. *Phacelia denticulata* G3?S3?
All historical-need to survey.
16. *Physaria bellii* G2G3S2S3
Michelle D-L: -collected lots of seed that is in storage at Seed Lab, genetic studies have shown that southern pops are not *P. bellii*. Rob B. found on Green Mtn at Jeffco, Steve P. found something similar on Pawnee NG but he thinks keys to *P. brassicoides* [confirmed as *P. brassicoides* 12/09], which would be a state record. He will confirm this winter at herbaria. (Jennifer Ackerfield is working on id).

17. *Potentilla ambigens* G3S1S2

Steve P.: Can be superficially confused with sulphur cinquefoil, a noxious weed, in disturbed road shoulders, need to work with weed sprayers so they don't spray accidentally

18. *Potentilla rupincola* G2S2

Anna Child worked on genetic taxonomy, can be hard to tell from *Potentilla effusa*, Child's work not being published. Need to resolve publication of data, Child says *rupincola* is a separate and rare taxon.

19. *Sisyrinchium pallidum* G2G3S2

May be downgraded to a G3 because of number of occurrences and range.

New Taxon Presented at Symposium in 2008

Review of G2 Species in Southwest and West Central Colorado (led by Peggy Lyon, CNHP) Powerpoint presentation prepared by Karin Decker, Susan Panjabi, and Jill Handwerk

1. *Astragalus anisus* G2G3S2S3

- a. Gunnison area
- b. Gay Austin: Lots more occurrences than map indicates, in sagebrush
- c. Knapweed a secondary threat
- d. Need to get this info into database

2. *Astragalus cronquistii* G2S2

- a. Marian Rohman has map of Ute Mtn. Ute populations, went to 3 sites. Doesn't know if populations are still good due to cheatgrass
- b. Montezuma Creek-several thousand individuals really good year,
- c. SW of Bluff- lots of plants
- d. Jill or Steve contact Marian re getting data from Ute Mountain Ute tribe: Need to get into CNHP database, work on an agreement with Ute Mtn Utes, can put in database in a way that it is marked sensitive and not shared.
- e. Ellen M. has a new contact at UMU tribal land
- f. Need to reassess rank. Finding in disturbed areas along pipelines

3. *Astragalus equisolensis* G5T1S1

- a. Peggy L found new occurrences in 2008 from Utah border along west side of Dolores River as far south as Salt Creek.
- b. Now have 4 occurrences with many sub-occurrences, estimated 3,000 individuals
- c. Also found on the east side of the Palisade near Gateway, far from where seen before, may be close to boundary of ACEC. There are several other

- rare species around perimeter; it would be good to expand the ACEC to include the rare plants.
- d. Ellen M.: it was a candidate in UT, was dropped because it was found in CO. See the news article in UT NPS newsletter.
 - e. New populations impacted by oil and gas, some on BLM land
 - f. Stan Welsh has verified specimens, concluded that those from the Gateway area are the same as in those in Horseshoe Bend in east central UT
 - g. Need to do more survey in Grand Junction area
4. *Astragalus iodopetalus* G2S1
 - a. Peggy L.: it's on agenda to survey for this species with Section 6 funding in 2009. Peggy L. has looked for but never found it.
 - b. Habitat is PJ, known from Chimney Rock in Archuleta County.
 - c. Marian is doing survey in area now, but hasn't seen
 5. *Astragalus naturitensis* G2G3S2S3
 - a. One new occurrence in Mesa County this year, BLM sensitive so surveys have been done
 - b. Gretchen Van Reyper found lots this spring, check to see if Gretchen's occurrences are in database. She has turned in forms already.
 6. *Astragalus piscator* G2G3S1
 - a. Occurs in Gateway on the edge of the Palisade ACEC. Peggy L. found new occurrences this year, west of Dolores River. There are reports of new occurrences in UT
 - b. Threatened around Gateway by road maintenance and widening in populations that occur roadside
 7. *Astragalus rafaensis* G2G3S1
 - a. Peggy L. found more this year in same general area, in drainages and dry washes above Dolores river, added 2,000 individuals
 - b. Need to do genetics work to look at relation with *A. linifolius*
 - c. Threat potential from uranium development
 8. *Boechea crandallii* G2S2
 - a. Need to do more survey in Gunnison area.
 9. *Camissonia eastwoodiae* G2S1
 - a. In Grand Junction area, north of I-70 near UT border, near Colorado Canyons NCA. Records are from 2003 or 2005 (need to check date)
 - b. Peggy L. last observation in 2005
 - c. Probably more plants, needs survey

10. *Castilleja puberula* G2G3S2S3

- a. Occurs in NE Colorado, but we did not cover last year
- b. Needs survey

11. *Cirsium perplexans* G2G3S2S3

- a. A few years ago thousands of plants came up in disturbed areas, acting like a weed
- b. Gretchen V. has observed a lot along roads, in shoulder of road. Plant seems to be increasing in De Beque area (get data from Gretchen V. if possible)
- c. Review rank, possibly downgrade to a G3

12. *Draba graminea* G2S2

- a. One new occurrence near Red Mt Pass and Telluride, occurs at high elevations
- b. Could be impacted by global warming

13. *Erigeron kachinensis* G2S1

- a. 2 occurrences in seeps and hanging gardens along Dolores River, one near Montrose / Mesa county line close to a developed spring, and another on Coyote Wash along
- b. Need to do more survey in Coyote Wash, raft Dolores River, occurs on BLM
- c. Amy Van Buron has been doing work in Utah on this species (Mindy W.)
- d. In Utah, occurs in aspen stands, different habitat than in CO
- e. Mindy W. not sure how common in Utah
- f. Bob Powell saw 100 individuals in Owl Creek Canyon, UT 2 hours from nearest 2 track.

14. *Eriogonum clavellatum* G2S1

- a. Looks different than *E. pelinophilum*
- b. Marian R. saw on Ute Mountain Ute reservation, ¼ mile along shale slopes, 100's of plants, can see outcrops from road, with *E. shocklei* and *Polygala subspinosa* (just added to state rare plant list)
- c. Need to update the occurrence in the CNHP, can report anything you can see from the road
- d. Get updated data from Marian, need to work with Ute Mountain Ute tribal staff

15. *Eriogonum coloradense* G2S2

- a. Updated (Gay Austin) information in Crested Butte area
- b. Peggy L. in 1996 worked on White River RNA, found it, but Jim Reveal thinks it is different, Jim is working on the taxonomy, Janis has specimen

16. *Lepidium crenatum* G2S2

- a. No records in data base, lots of historic sites based on specimens
- b. Need to survey
- c. Threat: *Lepidiums* look same, might be confused with white top and could be affected by roadside weed spraying.
- d. Roadside, PJ zone, late blooming plant, shrubby, succulent green leaves

17. *Lesquerella pruinosa* G2S2

- a. On-going monitoring on O'Neal Hill with San Juan NF (Peggy L and Jill H)-4-5 permanent plots
- b. Barren shale in ponderosa pine
- c. Steve P. to check on disjunct specimen on Routt NF [Follow up by Steve P. on 12/8/2009: *L. pruinosa alpina* was found on the Medicine Bow NF in the Laramie Basin on Table Mountain and Sheep Mountain, Centennial Valley on other dry barren slopes and in Big Creek Park (in North Park) with *Macheranthera coloradoensis* and *Eriogonum exilifolium*. It may also occur on the Routt NF on the Hahns Peak - Bear's Ears Ranger District near California Park - but that is from memory. - John Proctor, Forest Botanist, White River National Forest, formerly on Routt-Medicine Bow National Forest]
- d. The Nature Conservancy has a conservation easement for portion of species population.

18. *Lesquerella vicina* G2S2

- a. Jim Reveal found recently
- b. Blooms early in season in March
- c. Get data from Gretchen V. -there are a lot more locations, grows on Saw Mill Mesa and in Gunnison Gorge

19. *Lomatium concinnum* G2G3S2S3

- a. Peggy L. worked on in 04, but no new information
- b. Jim F. may be more around Hotchkiss
- c. Looks like *Cymopterus fendleri*

20. *Lupinus crassus* G2S2

- a. No new information
- b. Might be threatend by cheatgrass and uranium mine roads
- c. Tom Grand did MS thesis on this and had monitoring plots

21. *Macheranthera coloradoensis* G2S2

- a. Peggy L. established monitoring plots, may be more common than we think
- b. Peggy L. sheep grazing a threat at lower elevations.
- c. BLM monitoring at Benett Trail
- d. Gay Austin has seen in Gunnison Basin, has provided data to CNHP, need to update map
- e. Habitat is reddish soils around timberline, along Continental Divide and in San Juan NF.

22. *Oreocarya osterhoutii* G2G3S2
 - a. Peggy L. found this year in Gateway area, west side of Dolores River just north of Gateway
 - b. Can be abundant on red substrate
 - c. Cushiony, low lying

23. *Physaria alpina* G2S2- Avery Peak twinpod
 - a. Peggy L. Taylor Pass, last observed in 2007

24. *Physaria rollinsii* G2S2
 - a. Mesa and Gunnison Counties, 8 occurrences (7 historical), last seen in 2003
 - b. Jill H.- look at specimens, may occur in Pitkin County, Jill H. will look next spring to verify

25. *Puccinella parishii* G2G3S1
 - a. Was known from NM, AZ, CA, but recently found near Miramonte Reservoir. Brian K. visited, private and State land next to DOW. Water in canal may be what is keeping the population viable, occurs in wet saline area, state will be designating natural area for *Physaria pulvinata* and *Puccinella*

26. *Salix arizonica* G2G3S1
 - a. One CO occurrence, east of Continental Divide
 - b. Montane to lower subalpine, 8-9,000 ft.
 - c. Needs more survey
 - d. With just one known site with a few clumps, may be Colorado's rarest non-endemic species.

27. *Thelypodopsis juniperorum* G2S2
 - a. No new data

28. *Townsendia glabella* G2S2
 - a. Geographically restricted but abundant in Pagosa Springs area
 - b. Need to map and consider lowering rank
 - c. Same habitat as *Ipomopsis polyantha*
 - d. M. Rohman saw in Archuleata county in 2007

29. *Townsendia rothrockii* G2G3S2S3
 - a. Lime Mesa, San Juan Forest, occurring with *Macheranthera coloradensis*
 - b. One small pop on top of Uncompahgre Plateau

New species to Colorado to be added to the CNHP database

1. *Draba malphiaceae*-La Plata, Hinsdale, and Montezuma counties (near Mancos)

2. *Descurainia kenheili* (alpine tundra in San Juan Mtns)
3. *Physaria scrotiformis* (upper subalpine-lower alpine zone in San Juan Mtns)-Jill H. will check publication
4. *Gutierrezia elegans*-Lone Mesa State Park, with *Physaria pulvinata*, spreads out on the ground, (found by Al Scheider and Peggy Lyon). Al Schneider sent specimens to expert Guy Newsom who is covering portions of the Asteraceae for FNA.

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**

Feedback on how to improve future workshops

1. Show photo first, then map
2. CNHP needs slides/photos (Bob Powell has photos)
3. Need sponsors
4. Next year-we will cover some species from NW part of state that we haven't covered yet, need to determine what to cover next year
5. Add elevation to slides

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

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

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

Participants

Name	Affiliation
Alderman, Fred	concerned individual
Allison, Pam	
Anderson, David	CNHP
Austin, Gay	USFS
Baker, Charles	CoNPS
Capodice, Joe	West Texas A&M
Cepeda, J.	WTAMU
Conner, Shawn	Bio-logic
Deprenger-Levin, Michelle	DBG
Ewing, Collin	USFWS
Ewing, Mo	COL
Ferguson, Jim	Consultant
Gordon, Peter	BLM
Hahn, Alan	
Handwerk, Jill	CNHP
Hart, Georgia	concerned individual
Henson, Ann	CoNPS
Holsinger, Ken	BLM
Huggins, Janis	CNHP
Hunt, Allan	
Hunter, Theron	CoNPS
Kurzel, Brian	CNAP
Lefevre, Jim	Bio-Logic
Lyon, Peggy	CNHP
MacMillan, Cara	USFS
Mayo, Ellen	USFWS
Neely, Betsy	TNC
Olson, Steve	USFS
Orthner, Rea	WER
Popovich, Steve	USFS
Powell, Bob	CoNPS
Rohman, Marian	Consultant
Sharp, Charlie	BLM
Siders, Missy	BLM
Smith, Scott	CoNPS
Van Reyper, Gretchen	Consultant, CoNPS, ERO Resources
Wheeler, Mindy	Consultant
Woodis, Peggy	Bio-logic

5th Annual Colorado Rare Plant Symposium
SW Colorado G2's

GNAME	SNAME	GRANK	SRANK	RND_GRNK	FEDSENS	USES
<i>Astragalus anisus</i>	<i>Astragalus anisus</i>	G2G3	S2S3	G2	BLM	
<i>Astragalus cronquistii</i>	<i>Astragalus cronquistii</i>	G2	S2	G2	BLM	
<i>Astragalus desperatus</i> var. <i>neeseae</i>	<i>Astragalus equisolensis</i>	G5T1	S1	T1		
<i>Astragalus iodopetalus</i>	<i>Astragalus iodopetalus</i>	G2	S1	G2		
<i>Astragalus naturitensis</i>	<i>Astragalus naturitensis</i>	G2G3	S2S3	G2	BLM	
<i>Astragalus piscator</i>	<i>Astragalus piscator</i>	G2G3	S1	G2	BLM	
<i>Astragalus rafaensis</i>	<i>Astragalus rafaensis</i>	G2G3	S1	G2	BLM	
<i>Arabis crandallii</i>	<i>Boechea crandallii</i>	G2	S2	G2	BLM	
<i>Camissonia eastwoodiae</i>	<i>Camissonia eastwoodiae</i>	G2	S1	G2		
<i>Castilleja puberula</i>	<i>Castilleja puberula</i>	G2G3	S2S3	G2		
<i>Cirsium perplexans</i>	<i>Cirsium perplexans</i>	G2G3	S2S3	G2	BLM/USFS	
<i>Draba graminea</i>	<i>Draba graminea</i>	G2	S2	G2		
<i>Erigeron kachinensis</i>	<i>Erigeron kachinensis</i>	G2	S1	G2	BLM	
<i>Eriogonum clavellatum</i>	<i>Eriogonum clavellatum</i>	G2	S1	G2	BLM	
<i>Eriogonum coloradense</i>	<i>Eriogonum coloradense</i>	G2	S2	G2	BLM	
<i>Lepidium crenatum</i>	<i>Lepidium crenatum</i>	G2	S2	G2		
<i>Lesquerella pruinosa</i>	<i>Lesquerella pruinosa</i>	G2	S2	G2	BLM/USFS	
<i>Lesquerella vicina</i>	<i>Lesquerella vicina</i>	G2	S2	G2	BLM	
<i>Lomatium concinnum</i>	<i>Lomatium concinnum</i>	G2G3	S2S3	G2	BLM	
<i>Lupinus crassus</i>	<i>Lupinus crassus</i>	G2	S2	G2	BLM	
<i>Machaeranthera coloradoensis</i>	<i>Machaeranthera coloradoensis</i>	G2	S2	G2	USFS	
<i>Cryptantha osterhoutii</i>	<i>Oreocarya osterhoutii</i>	G2G3	S2	G2	BLM	
<i>Physaria alpina</i>	<i>Physaria alpina</i>	G2	S2	G2		
<i>Physaria rollinsii</i>	<i>Physaria rollinsii</i>	G2	S2	G2		
<i>Puccinellia parishii</i>	<i>Puccinellia parishii</i>	G2	S1	G2		
<i>Salix arizonica</i>	<i>Salix arizonica</i>	G2G3	S1	G2	USFS	
<i>Thelypodopsis juniperorum</i>	<i>Thelypodopsis juniperorum</i>	G2	S2	G2		
<i>Townsendia glabella</i>	<i>Townsendia glabella</i>	G2	S2	G2		
<i>Townsendia rothrockii</i>	<i>Townsendia rothrockii</i>	G2G3	S2S3	G2		