

Thirteenth Annual Colorado Rare Plant Symposium

September 23rd, 2016

University of Colorado East Campus Boulder, Colorado

Rare Plant Symposium
Moderator Jennifer Ramp Neale (DBG)

SW Colorado G2G3 Species

Session facilitated by Jill Handwerk (CNHP)

***Astragalus anisus* (G2G3/S2S3)**

Gay Austin: I saw this species while sampling vegetation plots. It was in the AIM plots all over. It was near a bike path and near Western State University in both weedy areas above the College. I didn't collect any data. It was flowering and fruiting, in sage-grouse habitat.

***Astragalus cronquistii* (G2/S2)**

Jill Handwerk: We can't get access to these areas, but this species was seen in 1993.

***Astragalus equisolensis* (G5T1/S1)**

Jessica Smith: I saw this at Gateway with Lorraine Yeats.

Jill Handwerk: This species was once petitioned for listing, mostly in Utah.

Peggy Lyon: I have also seen it around Gateway.

***Astragalus iodopetalus* (G2/S1)**

Gay Austin: I made a collection at Hartman Rocks and avoided it for a trail reroute. I also found it in an AIM plot. The summer before last, we found it in plots for inventory. The specimen is at the KHD. In 2015, we saw it in an AIM plot.

***Astragalus naturitensis* (G2G3/S2S3)**

Phil Krenning: We have one monitoring plot outside of Nucla. The population looked good in burned sagebrush habitat.

***Astragalus piscator* (G2G3/S1)**

Jessica Smith: I saw this species with Loraine Yeatts at Gateway; it wasn't a robust population, but it was there.

***Astragalus rafaensis* (G2G3/S1)**

Joe Statwick: I've been working on the ecology of selenium hyper-accumulation of *Astragalus linifolius* and *Astragalus rafaensis*. Genetically, they are not differentiated. *A. linifolius* will be subsumed into *A. rafaensis*. Morphologically they are very similar with some slight phenotypic differences.

***Boechera crandallii* (G2/S2)**

Gay Austin: I saw two new populations on BLM land at Signal Peak with about 10 plants each in 2015. Not much is known about this species, it might be more common than we know.

***Camissonia eastwoodiae* (G2/S1)**

Jill Handwerk: There was a superbloom in 2016.

***Carex stenoptila* (G3/S2)**

Gay Austin: This species should be added to the SW list. It's on the other region lists.

***Cirsium perplexans* (G2G3/S2S3)**

No new information reported.

***Draba graminea* (G2/S2)**

No new information reported.

***Erigeron kachinensis* (G2/S1)**

No new information reported.

***Eriogonum clavellatum* (G2/S1)**

Peggy Lyon: I saw this species leaning over the fence at Ute Mountain on Ute land. We haven't had access to the area. It was last seen in 1990.

***Eriogonum coloradense* (G2/S2)**

Gay Austin: We were doing an AIM plot and found it within the plot in 2016.

***Lepidium crenatum* (G2/S2)**

No new information reported.

***Lomatium concinnum* (G2G3/S2S3)**

Peggy Lyon: I found this species a lot in Billy Creek SWA. It's doing so well it's practically a weed.

***Lupinus crassus* (G2/S2)**

Phil Krenning: We did demographic monitoring plot for *L. crassus* in conjunction with *A. nataturensis*. We might set up more plots.

***Machaeranthera coloradoensis* (G3/S3)**

Gay Austin: I had this species in an AIM plot and also found in Browns Canyon National Monument this summer. It was also growing in my garden.

Raquel Wertsbaugh: I saw this species in northwest Fremont County.

***Oreocarya osterhoutii* (G2G3/S2)**

No new information reported.

***Physaria alpina* (G2/S2)**

Callie Edwards: MRHI saw this all over the Mosquito Range and Mt. Silverheels.

***Physaria pruinosa* (G2/S2)**

Peggy Lyon: I am monitoring plots south of Pagosa Springs on Forest Service land.

***Physaria rollinsii* (G1/S1)**

Lori Brummer: The specimen at the CU Herbarium from Chalk Mountain in Mesa County is probably incorrectly identified. Bill Jennings annotated it. This needs to be fixed in the CNHP database. DBG is waiting on the identifications for the seeds. I think this species could be more widespread or localized and that it is underreported.

***Physaria vicina* (G2/S2)**

Peggy Lyon: I found this in Garfield County between Carbondale and Glenwood, and also found it at Billy Creek SWA and Colorado Mountain College. It's found where pinyon-juniper meets sagebrush.

***Puccinellia parishii* (G2G3/S1)**

Peggy Lyon: I saw it at Miramonte and Lone Mesa State Park this year.

***Salix arizonica* (G2G3/S1)**

Gwen Kittel: I found 11 more large clumps and did soil sampling to determine they grow on saturated, well developed peat soil, about 40 cm in depth. It seems like a good year for this species. I am in contact with USFS and they are aware of my work. I will collect specimens and submit them to regional herbaria. The enclosure is still up. Grazing occurs late in the season on La Manga Pass. The motherlode of the population is across the road south of the highway are much larger shrubs and larger in diameter. Cattle grazing is not allowed in this area, but there are horses.

***Thelypodopsis juniperorum* (G2/S2)**

Peggy Lyon: This species came up this year, but last year not at all. Some years I only find dried plants and some years nothing at all so the seed bank must be good.

***Townsendia glabella* (G2/S2)**

Jessica Smith: This species co-occurs within an *Ipomopsis polyantha* occurrence. I found a nice big population on CNAP land. We will submit the data this year.

***Townsendia rothrockii* (G2G3/S2S3)**

Lisa Merkoffer: CNAP staff saw this species at Hoosier Ridge.

Callie Edwards: MRHI saw this species at a site at Weston Pass and Sheep Mountain in the Mosquito Range.

Tyler Johnson: I saw this species at Stony Pass.

Threatened, Endangered, and Candidate or Petitioned Species Statewide

Session facilitated by Michelle DePrenger-Levin (DBG) and Bernadette Kuhn (CNHP)

***Astragalus humillimus* (G1/S1)**

No new information reported.

***Astragalus microcymbus* (G1/S1)**

Michelle DePrenger-Levin: We've been monitoring 6 sites in South Beaver Creek and Cebolla Creek. Populations are recovering but are still greatly diminished from the 2013 drought conditions.

Gay Austin: We found a new EO at Hartman Rocks where we helped to avoid harming individuals with a trail reroute.

Delia Malone: I looked for new populations but did not find any. I updated known sites.

***Astragalus osterhoutii* (G1/S1)**

Phil Krenning: I set up a new monitoring plot at Wolford Mountain Reservoir. Old sites have 11 years of data. At some point, the BLM is hoping to get to sites that are private.

***Astragalus schmolliae* (G1/S1)**

Renee Rondeau: I did monitoring at Mesa Verde, rereading belt transects established in 2001.

***Astragalus tortipes* (G1/S1)**

Jill Handwerk: Tribal sites have been visited recently and presence verified and it is still there but the USFWS cannot release any more information.

Carol Dawson: This species was removed from the BLM Sensitive Species list because there is no record of it from BLM lands.

***Corispermum navicula* (G1?/S1)**

Nathan Redecker: It's our third year of attempted monitoring but it's difficult to monitor annuals. Not sure if our methodology will work yet. The methods are re-randomized plots. This species is an important dune stabilizer and may need more protective structures where there is a lot of trail use. The listing decision is coming in 2022.

Jenny Neale: The draft of our genetic work is due 1/15/17. We also have morphological data we are working on. It looks like *C. navicula* will hold up as a good species.

***Draba weberi* (G1/S1)**

Delia Malone: I conducted surveys for this in 2016, but did not find any new sites.

***Eriogonum brandegeei* (G1G2/S1S2)**

Michelle DePrenger-Levin: We monitored two plots in Garden Park (near Canon City). The populations looked good. We had not visited these sites since 2013.

Carol Dawson: I set up a monitoring plot in Garden Park, Droney, and Cleora. The decision for listing is coming in 2022.

Jill Handwerk: I set up a monitoring plot at Droney Gulch on state lands for CNAP. Clay hills are attractive for mountain biking and ATV use. This is a big concern for this species. Weedy mustard is present at Garden Park.

***Eriogonum pelinophilum* (G2/S2)**

Phil Krenning: We set up monitoring plots on Wacker Ranch with CNAP. Read S. Fairview, Model Airplane, and one out by Delta. Two sets of paired plots at Wacker that are on grazed and ungrazed land. It's the fifth year of the study. A fence was built in the Black Canyon ACEC.

Bernadette Kuhn: I used distance sampling to estimated population size at S. Canal.

***Eutrema penlandii* (*edwardsii*) (G1G2/S1S2)**

Carol Dawson: We've been doing trend monitoring for this species across a fairly large landscape (six sites) with partners from USFWS, CNHP, CPW and MRHI. We have Modified Whittaker plots at Weston Pass, Mosquito Pass and Hoosier Ridge. The trends look stable.

Callie Edwards: We have phenology plots at Mount Sherman, Hoosier Ridge, and Mosquito Gulch. We found more flowering differences within plots than among plots.

***Ipomopsis polyantha* (G1/S1)**

Raquel Wertsbaugh: CPW acquired a 77 acre parcel of occupied habitat just south of Pagosa Springs with federal dollars—about 75% USFWS funding and some from GOCO.

Rebecca Huft: Our germination study is showing high rates of germination across treatments and control.

***Mimulus gemmiparus* (G1/S1)**

Steve Olson: Two new sites found by Mark Beardsley.

Steve Popovich: Two CSU students are studying propagation and reproduction.

***Oenothera coloradensis* ssp. *coloradensis* (G3T2/S1)**

Jill Handwerk: We are helping USFWS in Wyoming with a Recovery Plan.

Ann Grant: I helped Crystal Strouse from the City of Fort Collins do a survey at Soapstone Natural Area.

***Pediocactus knowltonii* (G1/SNA)**

Randy Tatroe: There are lots of individuals on tribal lands.

***Penstemon debilis* (G1/S1)**

Carol Dawson: We have one plot at Anvil Points where the mine adits are closed.

Raquel Wertsbaugh: Laramie Energy now has ownership of monitoring site. They will honor agreement to let CNAP monitor.

Jill Handwerk: We helped CNAP set up a new plot at Logan Wash and this is the second year of reading the data. It's found on steep erosive shale slopes.

***Penstemon grahamii* (G2/S1)**

Phil Krenning: At the Raven Ridge site, the population appears to be coming back after lots of sheep grazing.

***Penstemon penlandii* (G1/S1)**

Jenny Neale: We extracted DNA for a population genetics analysis. We used seed from the Center for Genetic Preservation at CSU. We have tissue samples from Troublesome Creek. The preliminary results are that there is a lot of genetic diversity from the population and that is maintained within the seeds that are collected. We wrote an article for the American Penstemon Society.

Phil Krenning: The species is very stable at the BLM monitoring site near Kremmling.

***Penstemon scariosus* var. *albifluvis* (G4T1/S1)**

Carol Dawson: Sheep grazing and oil and gas is an issue for this species, especially in the Uintah Basin on the Utah side.

***Phacelia formosula* (G1/S1)**

Jenny Neale: We are doing niche modeling, including Larimer County species; the analysis is expected 1/15/17.

Phil Krenning: I made it to all five monitoring sites, but it was a bad year for this species.

***Phacelia submutica* (G2/S2)**

Mitch McLaughlin: We are working on the taxonomy for this species. It has been treated as a subspecies of *scopolina*, but this is incorrect. It appears to be a solid species. We have done germinations studies. Alicia Langton organized a bioblitz but no new populations were found. There'll be a publication this coming year on my work.

***Physaria congesta* (G1/S1)**

Phil Krenning: We monitored in 2016 along with *P. obcordata*. We did two plots for *obcordata* and four for *congesta*.

Raquel Wertsbaugh: CNAP has been monitoring plots on Duck Creek that were read in 2016.

Jenny Neale: We visited the site for seed collection and presented our findings at Botany 2016.

***Physaria obcordata* (G1G2/S1S2)**

Jenny Neale: We visited the site for seed collection and presented our findings at Botany 2016.

***Sclerocactus glaucus* (G2G3/S2S3)**

Delia Malone: We created a species distribution model and found new occurrences east of the Grand Junction Airport.

Phil Krenning: This species is relatively stable based on our monitoring plots sampled in 2016. Theresa Sauer is working with Energy and the Law Firm Breedy, Western Energy Alliance group that was going to propose delisting *S. glaucus*, *S. brevispinus* and *S. wetlandicus* in Utah, and may try to expand that into CO.

Michelle Deprenger-Levin: We have 10 monitoring sites.

Mitch McLaughlin: We are trying to use our genetic work to pinpoint exactly where the geographic lines are for *S. glaucus* and *S. parviflorus*.

***Sclerocactus mesae-verdae* (G2/S2)**

Mitch McLaughlin: I saw this in New Mexico about 5 miles from the CO border.

***Spiranthes diluvialis* (G2G3/S2)**

Denise Larson: We found 10 or 12 plants in Golden along Clear Creek. This is possibly a slight extension.

Carol Dawson: Utah is the lead agency for delisting. They are under the review process now.

G1 Species Statewide

Session facilitated by Pam Smith and Susan Panjabi (both of CNHP)

***Aletes latibolus* (G1G2/S1)**

Peggy Lyon: Nothing new this year, I'm sure it is still there (Colorado National Monument and BLM).

***Aliciella sedifolia* (G1/S1)**

Tim Hogan: I did not get back to the area where it grows this summer. Last year I went to Cataract Lake with USFS and BLM. It seemed like the same habitat as Half Peak where it is found. Erin and I would like to try again to see if it is in the Cataract Lake area. The original label says limestone, but it is found on volcanic tuft, which is white and could be confused. I have gravel from the known site. Half Peak is in the Cataract Lake area. Erin and I looked at 4-5 sites. We will backpack in next time.

***Astragalus deterior* (G1G2/S1S2)**

Peggy Lyon: Someone, maybe Al Schneider, has suggested that some of *A. deterior* is *A. naturitensis*. We need to check for voucher specimens and visit sites. *A. naturitensis* is not documented in Mesa Verde yet.

***Astragalus lonchocarpus* var. *hamiltonii* (G1/SNA)**

Group summary: There are no Colorado occurrences of this taxon.

***Astragalus missouriensis* var. *humistratus* (G5T1/S1)**

Peggy Lyon: I'm sure it's still there, near Pagosa. We need to update the last observation information. It is in the same area as *Townsendia glabella*.

***Boechera glareosa* (G1/S1)**

No new information reported.

***Botrychium lineare* (G2G3/S2S3)**

No new information reported.

***Botrychium* tax. nov. "*furcatum*" (GNR/SNR)**

No new information reported.

***Descurainia kenheili* (G1/S1)**

Peggy Lyon: Tyler Johnson with USFS and I have looked for this. No one can find it. Not even any mustards in the area where the species is reported from.

Ken Heil: I have also looked.

Peggy Lyon: It's not really the right kind of place for *Drabas*.

Tyler Johnson: I spent 2 days up in Stony Pass this summer. Alpine barren and rocky habitat is the description on the specimen label.

***Draba malpighiacea* (G1?/S1?)**

Peggy Lyon: Lori Brummer and I are feeling unsure that this is a valid taxon. The two specimens from Grand Mesa, confirmed by Al-Shehbaz, are a long ways away from other locations. The habitat is rocky subalpine at the highest point on Grand Mesa. I went to the original collection locations. It looks a lot like *D. spectabilis*, except for a possible difference in hairs. I gave it to Jen Ackerfield. I am doubtful that this is a valid species. Other things did seem different, but the key only differentiates the hairs.

***Erigeron wilkenii* (G1/S1)**

Peggy Lyon: Lori Brummer and I found this species in Dinosaur National Park. There were two or three occurrences in 2012. I think it's a good species. I saw maybe hundreds of plants.

***Gutierrezia elegans* (G1/S1)**

Peggy Lyon: I was there in summer 2016 setting up permanent monitoring plots for *Phytolacca pulvinata*. I would like to get monitoring set up for *G. elegans* starting next year. The area was grazed but not heavily.

***Hackelia gracilenta* (G1G2/S1S2)**

Peggy Lyon: I surveyed for this, and in some years it's more common. It's found only in Mesa Verde National Park.

***Ipomopsis ramosa* (G1/S1)**

Ross McCauley: I submitted an element occurrence record to CNHP from Dolores County. It's found in the Wildcat Canyon area. In the upper reaches, there are large populations. There are vouchers in the Fort Lewis Herbarium, and I will send them to the Denver Botanic Gardens Herbarium. I submitted a paper on their reproductive biology. I'm interested in their pattern of origin. There is a poster at the meeting tomorrow. Genetically, the closest relative is *I. aggregata*. Recent hybridization has occurred via long distance pollen transfer via the swallowtail butterfly.

***Lepidium huberi* (G1G2/S1S2)**

No new information reported.

Group summary: Who recognizes this taxon?

***Lygodesmia doloresensis* (G1G2/S1S2)**

No new information reported.

***Oreocarya revealii* (G2/S2)**

Mitchell McGlaughlin: See the publication of genetic work. The northern dots are all *O. paradoxa*. Soil data indicates small differences, but there are no morphological differences. There are limited and inconsistent morphological differences. Geographic and genetic differences occur.

Peggy Lyon: I found more *O. revealii* in Dry Creek Basin. Mitch sampled there too; it is *O. revealii*.

Phil Krenning: The BLM established demographic monitoring plots in 2014, and plans to return in 2017.

***Oreoxis humilis* (G1/S1)**

Group summary: Road erosion and construction may not be a primary threat anymore because the road is paved. We are wondering about genetic work to show how distinct this taxon is from relatives?

***Packera mancosana* (G1/S1)**

Peggy Lyon: I saw it in Lone Mesa State Park this year.

Tyler Johnson: It is on the USFS sensitive species list now. It is in the San Juan National Forest. Update the slide to say USFS, not federal. Double check the land ownership. It is definitely on state park land.

Susan Spackman: This species isn't in Jen Ackerfield's Flora.

Jen Ackerfield: I don't recognize it. I lump it in with *P. wernerifolia*.

Ross McCauley: I have preliminary genetic data that *P. mancosana* is distinct.

***Penstemon gibbensii* (G1G2/S1)**

No new information reported.

***Phacelia gina-glenneae* (G1/S1)**

Pat Murphy: I made the original discovery of this species thinking it was *P. formosula*. This is an annual; *P. formosula* is a biennial.

Scott Smith: I found more locations on BLM land. Get the locations from Pat Murphy. There is a new common name. DBG is working on its genetics. There are 16 traits. CNHP has a report. *Gina-glenneae* is a good, solid species.

***Physaria pulvinata* (G1/S1)**

Peggy Lyon: I saw a lot this year. We set up permanent monitoring plots for CNAP. It is on the USFS sensitive species list, and is on the San Juan National Forest.

***Physaria scrotiformis* (G1/S1)**

No new information reported.

G2 Species of SE Colorado

Session facilitated by Jessica Smith (CNAP)

***Asclepias uncialis* ssp. *uncialis* (G3G4T2T3/S2)**

Jessica Smith: We looked at Garden Park but we didn't see any.

Steve Olson: I saw this species last 3 or 4 years ago near the Oklahoma border. I also want to know about taxonomy, when we're going to stop referring to it as a subspecies. Maybe we can make this a student project?

***Cleome (Peritoma) multicaulis* (G2G3/S2S3)**

Jessica Smith: CNAP saw this species last year. We need to update the last EO observation date.

Melissa Islam: We collected a species in Baca National Wildlife Refuge sometime between 2011 and 2014.

***Delphinium ramosum* var. *alpestre* (G4T2/S2)**

Tim Hogan: I saw this species recently.

***Delphinium robustum* (G2?/S2?)**

Jessica Smith: I saw this species at Dome Rock, but I need to submit the data to CNHP. There are some taxonomic issues.

***Draba exunguiculata* (G2/S2)**

Jessica Smith: CNAP saw this species at Hoosier Ridge with Steven Olson and Dina Clark. We need to submit the data. We saw an estimated 300 individuals. It's a new EO at a snowmelt line at the top of the ridge.

***Draba grayana* (G2/S2)**

Jessica Smith: I saw this species at Hoosier Ridge with Steve Olson and Dina Clark. We only saw 5 plants.

***Draba smithii* (G2/S2)**

No new information reported.

***Frasera coloradensis* (G2G3/S2S3)**

Jessica Smith: I went with CoNPS on a field trip and we saw this species at Shell Rock. We will expand the distribution.

Steve Olson: I found this species in Kansas in the Comanche National Grasslands. They have been seeing more robust populations with more rain.

***Herrickia horrida* (G2?/S1)**

Steve Olson: I didn't see this species in Huerfano County.

***Nuttallia chrysantha* (G2/S2)**

No new information reported.

***Nuttallia densa* (G2/S2)**

Steve Olson: I found some in Browns Canyon. Lorraine Yeatts and Jan Wingate found it in earlier mid-July.

***Oenothera harringtonii* (G3/S3)**

Steve Olson: The Chicago Botanic Gardens is doing monitoring out in Illinois. They are finding polymorphisms in scent.

***Oonopsis foliosa* var. *monocephala* (G3G4T2/S2)**

No new information reported.

***Oonopsis puebloensis* (G2/S2)**

No new information reported.

***Oxybaphus rotundifolius* (G2/S2)**

Melissa Islam: The KHD made collections in Pueblo and Custer Counties in 2014 on private land.

***Penstemon degeneri* (G2/S2)**

Jessica Smith: CNAP found new sites in High Mesa in Fremont County.

Melissa Islam: The KHD collected this species for the Arkansas Valley Inventory.

***Physaria calcicola* (G3/S3)**

No new information reported.

***Ptilagrostis porteri* (G2/S2)**

Jessica Smith: We didn't see it at the High Creek Fen.

Steve Olson: The Geneva Park population seems to be steady over the past several years after monitoring every other year for the past ten years. The shrub component might be up a little. I heard there might be a decline with a lack of grazing.

Jill Handwerk: A CSU grad student has been working on research of Espalade herbicide for cheatgrass. D7, a biopesticide, is also being investigated for potential use in cheatgrass control.

Jennifer Kessler: Experimental treatments of cheatgrass are happening at Rabbit Mountain in the Boulder area.

Pam Smith: I spent 16 hours searching and didn't find it at the Farish site in the Air Force Academy.

Dave Anderson: We need to do more work to see if this species needs increased grazing to improve population size. Is it because it's getting outcompeted? Is it too shrubby? Is the Farish site getting too wet?

***Telesonix jamesii* (G2/S2)**

Denise Wilson: I saw this species at Staunton State Park. There were at least 3 sites there. Rock climbing in the area might be a concern, but it was hard to count because we were using binoculars.

NE Colorado G2G3 Species

Session facilitated by Melissa Islam (DBG)

***Aletes humilis* (G2G3/S2S3)**

No new information reported.

***Aletes nuttallii* (G3/S1)**

No new information reported.

***Aquilegia saximontana* (G3/S3)**

Tamara Nelson: We did work on the north side of the Twin Sisters near Longs Peak area a few years ago.

***Astragalus sparsiflorus* (G2/S2)**

No new information reported.

***Bolophyta alpina* (G3/S3)**

No new information reported.

***Carex oreocharis* (G3/S2)**

Jill Handwerk: There is a specimen from 2012 in the CU Herbarium.

***Draba globosa* (G3/S1)**

Callie Edwards: I'm not sure if I saw it this summer or not. I need to look at the list.

***Draba streptobrachia* (G3/S3)**

Callie Edwards: MRHI found this species in Park County in Silver Hills and Mosquito Gulch.

Lori Brummer: We observed it in Grand Mesa in Delta County. We need to send it in for verification, so it might be a new distribution. The collection was made in 2012.

***Eriogonum exilifolium* (G3/S2)**

Jill Handwerk: There is concern over oil and gas development for this species.

***Nuttallia sinuata* (G3/S3)**

No new information reported.

***Nuttallia speciosa* (G3/S3)**

No new information reported.

***Oonopsis wardii* (G3/S1)**

No new information reported.

***Phacelia denticulata* (G3/SU)**

Jessica Smith: I saw only two plants at Saddle Mountain in Park County.

***Physaria bellii* (G2G3/S2S3)**

Jessica Smith: CNAP observed and took voucher in Jefferson County on Dakota hogback of a hybrid (*P. bellii* x *vitulifera*).
Linda Smith observed at the Park Creek Hogback.

Jennifer Kelsner: Pine Ridge and Coyote Ridge Open Spaces have populations, and I have other populations that need to be submitted as EOs. Boulder County owns a new property on Highway 36 from St. Vrain to Nelson Roads; it is also on the west side of 36 on a dairy farm. We might have a hybrid near our south property. I did some quick plots and I think cheatgrass is pushing it out.

***Potentilla ambigens* (G3/S2)**

Melissa Islam: Are there collections in Mineral County?

***Potentilla rupincola* (G2/S2)**

Dave Anderson: We didn't see it at Ben Deltaor Boy Scout Ranch.

***Sisyrinchium pallidum* (G3/S2)**

Jessica Smith: We need to submit our data from the High Creek Fen and Jimmy Creek in western Larimer County to CNHP. We found a small, new population on State Land Board land.

NW and Central Colorado G2G3 Species

Session facilitated by Rebecca Hufft (DBG)

***Anticlea vaginatus* (G2/S2)**

No new information reported.

***Astragalus debequaeus* (G2/S2)**

Rebecca Hufft: We visited three EOs and collected seeds.

***Carex stenoptila* (G3/S2)**

No new information reported.

***Ipomopsis aggregata ssp. weberi* (G5T2/S2)**

Jill Handwerk: Should these be subsumed into a higher species?

***Ipomopsis globularis* (G2/S2)**

Callie Edwards: MRHI and CNAP observed this species in a few different locations such as Hoosier Ridge.

***Limnorchis zothecina* (G2/S1)**

No new information reported.

***Mertensia humilis* (G2/S1)**

No new information reported.

***Nuttallia rhizomata* (G2/S2)**

Jessica Smith: CNAP found a couple plants outside an EO, so the polygon needs to be updated.

***Oenothera acutissima* (G2/S2)**

No new information reported.

***Oxytropis besseyi* var. *obnapiformis* (G5T2/S2)**

No new information reported.

***Penstemon fremontii* var. *glabrescens* (G3G4T2/S2)**

No new information reported.

***Penstemon scariosus* var. *cyanomontanus* (G3T2/S2)**

No new information reported.

***Physaria parviflora* (G2/S2)**

No new information reported.

***Saussurea weberi* (G2G3/S2)**

Callie Edwards: We saw this species all over the Mosquito Range, Hoosier Ridge and Weston Pass.

***Thalictrum heliophilum* (G2/S2)**

Rebecca Hufft: A volunteer scouted several EOs but didn't find any.

***Thelypodium paniculatum* (G2/SH)**

No new information reported.

Field Season Highlights

Mimulus Gemmiparus

Steve Popovich (USFS) introduced the team of people working on *Mimulus gemmiparus*; Kevin Chu, Dyan Harden and Mark Beardsley.

Kevin Chu's, M.S. work on *Mimulus gemmiparus* bulbil production: I worked on a *Mimulus gemmiparus* greenhouse study. Reproduction is exclusively vegetative by bulbils, not fruits and seeds. My experiment was manipulating resource allocation by continuous removal of floral buds as they were initiated, removal of floral buds, and a control. Bulbil production is much higher in treatments than control. There was an approximate 2/3 increase in bulbils in treatments versus the control. My conclusion is that we could use removal of floral buds to increase bulbil production in natural populations.

Dyan Harden, Propagation of *Mimulus gemmiparus*: *Mimulus gemmiparus* bulbils are analogous to seeds, they look like two seeds but they are genetic clones. I got bulbils from St. Vrain, Hankins Gulch, Guanella Pass, and Elk Creek. The highest elevation site is at Guanella Pass. Hankins Gulch had very clustered bulbils. I created propagation protocols for *Mimulus gemmiparus*. Ex Situ propagation can be a model for *Mimulus* propagation because it is easily propagated. The next step is to figure out how to store bulbils without losing viability.

Mark Beardsley, Assisted Migration and New Populations of *Mimulus gemmiparus*: There are 8 *Mimulus gemmiparus* sites in CO, but the Horseshoe Park site has not been seen for years, so there are about 7 sites left. This species grows in

dense patches. I looked for places to plant and discovered a new population near the parking area below the Middle St. Vrain site. I found a new site at Hankins Gulch that is huge.

USFS Brown's Canyon Bioblitz

Steve Olson USFS: There was a Bioblitz at Brown's Canyon including the Arkansas River. 70 people joined in June, and 20 people in August. *Asclepias hallii* and *Townsendia fendleri* were present. We found an interesting *Thalictrum* at a dry site. We found 224 plant species, 3 herps, 96 bird species, and 22 mammal species. Working on a management plan for the monument using this data.

BLM Rare Plant Monitoring

Carol Dawson BLM: Currently, 150 million dollars a year are spent on rangeland monitoring, but we get very little consistent and useful data. AIM is a new monitoring methodology used in upland sites. We spend 4 or 5 hours at a site to collect data on vegetation. Data is soon to be available to the public. Gay Austin is working on the AIM project, collecting data in the Gunnison area.

There is a lot of rare plant monitoring going on with my group. *Physaria congesta* may be impacted by dust. Vince Tepedino has looked at pollinators. So far, no effects from dust to pollinators have been found.

Eriogonum pelinophilum, down around Montrose, faces potential impacts from grazing and recreation. We are trying to get landscape level plots.

The BLM has very little habitat for *Eutrema penlandii* at higher elevations, with potential impacts from recreational use and climate change within habitat. Monitoring is happening at 6 sites total. We are setting up Modified-Whittaker Plots to look at species richness. Changes in Washington D.C. have allowed us to use more quantitative methods to approach management decisions regarding rare plant species.

Pagosa Skyrocket

Al Pfister CoNPS: The majority of Pagosa skyrocket populations are on City of Pagosa Springs land. They need to come up with a management plan meeting the species and community's need. CDOT did a transplant project and was successful. CPW combined with USFWS to buy a 77 acre parcel of occupied habitat. CNAP is managing the site and will be writing a management plan later this fall. Geothermal Greenhouse partnership has learned from DBG and cultivated the skyrocket successfully at their facilities. Private landowners are happy to house populations of Pagosa skyrocket. The Historic Society at Pagosa Springs has offered to help.

Adjourn

2016 Meeting Attendees

Last Name	First Name	Affiliation
Ackerfield	Jennifer	Colorado State University Herbarium
Allison	Larry	CoNPS
Anderson	David	Colorado Natural Heritage Program
Austin	Gay	Bureau of Land Management
Ball	Chuck	CoNPS
Ball	Leslie	CoNPS
Boag	Audrey	CoNPS
Bousselot	Jennifer	CoNPS
Brummer	Lori	CoNPS
Colter	Connie	CoNPS
Dawson	Carol	Bureau of Land Management
DeNoble	Chelsea	CoNPS
DePrenger-Levin	Michelle	Denver Botanic Gardens
Duran	Lara A	Bureau of Land Management
Edwards	Callie	Mosquito Range Heritage Initiative
Estes	Kelsey	CoNPS
Ginley	Lucy	CoNPS
Gottsegen	Mindy	Colorado State Land Board
Grant	Ann	CoNPS
Handwerk	Jill	Colorado Natural Heritage Program
Hannon	Rebecca	CoNPS
Heil	Ken	CoNPS
Hjelmroos-Koski	Mervi	CoNPS
Hogan	Tim	University of Colorado Herbarium
Hufft	Rebecca	Denver Botanic Gardens
Islam	Melissa	Denver Botanic Gardens
Johnson	Tyler	US Forest Service
Kesler	Jennifer	Boulder County Open Space
Kittel	Gwen	NatureServe
Klafehn	Brad	CoNPS
Koski	John	CoNPS
Koski	Ronda	CoNPS
Kratz	Andrew	CoNPS
Kuhn	Bernadette	Colorado Natural Heritage Program
La Rosa	Raffica	CoNPS
Lamson	Michael	CoNPS
Lindauer	Ivo	CoNPS
Lyon	Peggy	Colorado Natural Heritage Program
Majack	Mari	UC Denver
Mastin	Jared	CoNPS
McCauley	Ross	Fort Lewis College
Merkhofer	Lisa	Colorado Natural Areas Program
Murphy	Pat	CoNPS
Neale	Jenny	Denver Botanic Gardens
Nelson	Tamara	CoNPS

Last Name	First Name	Affiliation
Olson	Steve	US Forest Service
Orthner Wrobel	Andrea	Western Ecological Resource
Pfister	Al	CoNPS
Ramaley	Jaclyn	CoNPS
Sanders	Kristen	CoNPS
Schweich	Tom	CoNPS
Skigen	Sarah	CoNPS
Smith	Jane	CoNPS
Smith	Jessica	Colorado Natural Areas Program
Smith	Pam	Colorado Natural Heritage Program
Spackman-Panjabi	Susan	Colorado Natural Heritage Program
Steinman	David	Colorado State University
Strouse	Crystal	City of Fort Collins
Tasker	Lisa	CoNPS
Tatroe	Randy	CoNPS
Topper	Ian	CoNPS
Turner	Charlie	CoNPS
Turner	Jan	CoNPS
von Ahlefeldt	Judy	CoNPS
Weber	Irene	CoNPS
Wertsbaugh	Raquel	Colorado Natural Areas Program
Wheeler	Mindy	CoNPS
Wilson	Denise	CoNPS
Wing	Ru	CoNPS
Yarbrough	Steve	CoNPS
Zeiner	Tom	CoNPS