

Featured Story

Synopsis of the Twentieth Annual Colorado Rare Plant Symposium

By Brenda L. Wichmann and the Colorado Natural Heritage Program Botany and Vegetation Ecology Team

The 2023 Annual Colorado Rare Plant Symposium event celebrated the twentieth anniversary of the symposium. Commemorative mugs were gifted to the attendees by the [Colorado Natural Heritage Program \(CNHP\)](#). The mugs were decorated with an illustration by Leslie Crosby depicting Rocky Mountain monkeyflower (*Erythranthe gemmipara*),

The symposium began with welcomes by Jessica Smith, CNHP Botany and Vegetation Ecology Team Leader, and Dave Anderson, CNHP Director. Presentations began with the CNHP review of select rare plants known from south-central and southeast Colorado, led by Dave. Summary information was presented on 19 taxa (Table 1), including a distribution map, photos of each plant and its habitat, last observation data, population size estimates, management concerns, and land ownership. Meeting attendees participated in the discussion of each taxon, adding information on recent observations, including population viability. Herbarium specimens from the University of Colorado Herbarium were available throughout the meeting for observation by attendees.

Following a break, partner updates from the Bureau of Land Management (BLM), Colorado Natural Areas Program (CNAP), and Denver Botanic Gardens (DBG) were presented. Carol Dawson, BLM lead for the Threatened and Endangered Species Program and the Plant Conservation and Restoration Program discussed the BLM Strategic Plan for the Threatened

and Endangered Species Program (2022-2027) and outlined BLM policy changes. Carol also discussed the 2023 revision of the Colorado BLM Sensitive Species List and plants on that list with ongoing research and/or inventory efforts.

Raquel Wertsbaugh, CNAP coordinator, provided a summary of the program, the program's work with rare plants of Colorado, and the interactive Colorado Natural Areas and Significant Features Map. She also discussed the upcoming 2025 Revision of the Colorado State Wildlife Action Plan (SWAP) before yielding the floor to Jessica Smith to present updates on CNHP's review of plants associated with the SWAP. The SWAP 2025 revision has begun, and a final draft revision is due for approval by the US Fish and Wildlife Service (USFWS) by September 30, 2025. The revision will be led by CPW with contracted help from CNHP that includes opportunities for stakeholder input. As part of this revision process, CNHP is reviewing the ranks of the plants listed in the SWAP, those known as Plants of Greatest Conservation Need. Jessica outlined the details of CNHP's 2022–23 review, including rank changes to both Tier 1 and Tier 2 plants and taxonomic updates that may both add or remove taxa from the SWAP list, depending on criteria chosen in the upcoming revision.

Updates from DBG were presented by Jennifer Neale, director of research and conservation, and Jennifer Ackerfield, head curator of natural history collections and associate director of biodiversity research. ►



A few of the plants discussed at the 2023 Rare Plant Symposium. From left: *Astragalus anisus* (Gunnison milkvetch) © Lori Brummer, *Draba smithii* (Smith's whitlow grass) seed pods © Sara Brinton, *Physaria rollinsii* (Rollins' twinpod) © Steve O'Kane.

◀ Jennifer Neale discussed ongoing rare plant conservation efforts at DBG, including demographic monitoring, population genomics, restoration efforts, ex situ seed collections, and alpine climate-related research. Jennifer Ackerfield, with assistance from Sami Naibauer (population genetics lab coordinator and field botanist at the University of Northern Colorado's (UNC's) School of Biological Sciences), updated the group on a collaborative effort to elucidate the taxonomic status of a plant referred to as *Physaria X 1*, a suspected hybrid of Bell's twinpod (*Physaria bellii*) and fiddleleaf twinpod (*Physaria vitulifera*). The suspected hybrid has now been determined to be within the species concept of *Physaria vitulifera*. Jennifer Ackerfield also updated the group on field-based floristic research she recently conducted with Alissa Iverson, DBG floristics coordinator, and Dina Clark, University of Colorado Museum of Natural History (COLO) Herbarium.

Mit McGlaughlin, UNC professor and chair of the department of biological sciences, provided conservation recommendations for three rare plants that his Population Genetics Lab has been studying. These were *Erythranthe gemmipara* (Rocky Mountain monkeyflower), *Penstemon acaulis* (stemless beardtongue), and *Penstemon yampaensis* (Yampa beardtongue). Concerns were raised about the lack of genetic diversity in Rocky Mountain monkeyflowers; the study found 33 total genetic individuals for the entire species. Results from the study of the penstemons indicate that the range of the Yampa beardtongue extends into northeastern Utah, and one recent hybrid between the two species was found.

Next, Dina Clark, curator of the COLO Herbarium, provided information on select Colorado plants occurring in Southeastern Colorado that are considered "peripheral species" because they occur at the edge of the species' range. Dina highlighted eight taxa, including a discussion of biological and ecological factors that may contribute to these species

occurring in Colorado. Dina also discussed the value of herbarium specimens in providing guidance as to where to look for occurrences of these and other species in Colorado, and the need to review type specimens to confirm identification of "peripheral" or otherwise challenging taxa.

Jake Gottschalk, USFWS biologist with the Colorado Ecological Services Field Office in Grand Junction, reviewed the USFWS's mission and reminded the group that the USFWS administers the Endangered Species Act, which is accomplished with the help of partners. Colorado harbors 16 USFWS-listed plant taxa, most of which exhibit narrow endemism with an affinity for exposed soil types and/or places with arid or semi-arid climates. Jake updated the group on the service's current work, including evaluation of a proposed delisting, ongoing Species Status Assessments (SSA), a five-year review, and developing a recovery plan.

After a break, author and botanist/vegetation ecologist Gwen Kittel introduced her new book entitled *Willows (Salix) of Colorado: Their Ecology & Identification*. She detailed the contents of the book and how to use it.

The final section of the symposium included updates from the CNHP's Jessica Smith, who reviewed some of the publicly available tools and resources provided on the CNHP website, including the CO Rare Plant Guide, the CO Conservation Data Explorer (CODEX), and the CO Floristic Quality Assessment Species List (CO-FQA). CNHP welcomes feedback and input on these tools, especially the submission of photos that could be added to the Rare Plant Guide. CNHP Botanist Georgia Doyle presented an update on the CNHP Tracking List, including those taxa added and those removed from the list. Doyle also made a call for rare plant data submissions and reviewed options for contributing data to CNHP via the online submission form and/or the CNHP Project on iNaturalist. Last, Jessica led a wrap-up session in which the group discussed insights from the meeting. 🌀



Additional plants discussed at the 2023 Rare Plant Symposium. From left: *Neoparrya lithophila* (Rock-loving neoparrya) © Jim McCain; *Erythranthe gemmipara* (Rocky Mountain monkeyflower) © Susan Spackman Panjabi; *Salix arizonica* (Arizona willow) © Gwen Kittel; CNAP.

Table 1. Plant Species Reviewed at the Twentieth Annual Rare Plant Symposium, 2023.

Scientific Name	State Common Name	G Rank ¹	S Rank ¹	SWAP ²	USFS/BLM ³
<i>Apios americana</i>	American groundnut	G5	S1		
<i>Artemisia parryi</i> (<i>Artemisia laciniata</i> ssp. <i>parryi</i>)	Parry's wormwood	GNRT3	S2		
<i>Astragalus anisus</i>	Gunnison milkvetch	G3	S3	Tier 2	BLM
<i>Astragalus brandegeei</i>	Brandegee's milkvetch	G3G4	S2		
<i>Astragalus missouriensis</i> var. <i>humistratus</i>	Missouri milkvetch	G5T2	S2	Tier 2	USFS
<i>Astragalus ripleyi</i>	Ripley's milkvetch	G3	S2		BLM/USFS
<i>Castilleja lineata</i>	Marsh-meadow Indian paintbrush	G4?	S2		
<i>Cirsium culebraense</i>	Culebra thistle	G2	S2		
<i>Cleomella multicaulis</i>	Slender spiderflower	G2G3	S2S3	Tier 2	BLM
<i>Descurainia kenheili</i>	Heil's tansy mustard	G2	S2	Tier 1	
<i>Draba malpighiacea</i>	Malpighiaceae draba	G1?	S1?	Tier 1	
<i>Draba smithii</i>	Smith's whitlowgrass	G3	S3	Tier 2	USFS
<i>Hackelia besseyi</i>	Bessey's stickseed	G2G3	S2		
<i>Neoparrya lithophila</i>	Rock-loving neoparrya	G3	S3		BLM/USFS
<i>Oreocarya pustulosa</i> (<i>Cryptantha cinerea</i> var. <i>pustulosa</i>)	San Juan cat's-eye	G5TNR	S1		
<i>Oreocarya weberi</i> (<i>Cryptantha weberi</i>)	Weber's cat's-eye	G3	S3		
<i>Penstemon bleaklyi</i>	Bleakly's penstemon	G1	S1		
<i>Physaria rollinsii</i>	Rollins' twinpod	G2	S2	Tier 1	
<i>Salix arizonica</i>	Arizona willow	G2G3	S1	Tier 2	USFS

1: G rank is the global imperilment rank; S rank is the state imperilment rank; T = infraspecific taxon rank (subspecies or variety); 1 = critically imperiled; 2 = imperiled; 3 = vulnerable; 4 = apparently secure; 5 = secure

2: SWAP = Colorado State Wildlife Action Plan, Plant of Greatest Conservation Need Rank

3: USFS/BLM: USFS = US Forest Service sensitive species; BLM = Bureau of Land Management Special Status Species



Compilation of photos from the San Luis Valley. From left: *Cleomella multicaulis* (slender spiderflower); San Luis Valley habitat; unknown; the Colorado Natural Heritage Program Botany and Vegetation Ecology Team on survey; *Mentzelia speciosa* (jeweled blazingstar). © CNAP