

## Featured Story

### Synopsis of the 2024 Colorado Rare Plant Symposium By Savanna Smith and the Colorado Natural Heritage Program Botany and Vegetation Ecology Team

The Twenty-First Annual Rare Plant Symposium was kicked off by a welcome from Dave Anderson, director and chief scientist of the Colorado Natural Heritage Program (CNHP). He provided a brief update on CNHP's recently initiated Statewide Natural Heritage Survey, which aims to survey biodiversity in every Colorado county and will require collaboration from all sectors of the conservation community.

The presentations began with an update on the 2025 Colorado State Wildlife Action Plan (SWAP). Kacie Miller, the SWAP coordinator for Colorado Parks & Wildlife (CPW), outlined the purpose of the plan, its federally required elements, and plans to improve its accessibility and relevance. CPW has been working on identification of the criteria and species to be included in the SWAP through several internal working groups. The 2025 SWAP will incorporate rare plants as Species of Greatest Conservation Need and categorize them into three lists: Tier 1, Tier 2, and Species of Greatest Information Need (SGIN).

Jessica Smith, CNHP's Botany and Vegetation Ecology Team leader, presented the draft list of rare plants to be included in the 2025 SWAP. The team evaluated all species ranked by NatureServe as G1 (globally critically imperiled), G2 (globally imperiled), and a subset of G3 (vulnerable) species. They also used additional criteria such as the Endangered Species Act listing status and the percentage of the species' range in Colorado to ultimately categorize all species into one of the three lists. Several partners

have provided initial feedback on the list and criteria, and there will be more opportunities for public comment in the coming months. The finalized SWAP will guide conservation actions for species of conservation concern in Colorado.

Next, Jessica Smith led a review of 15 rare plant species found in southwestern Colorado. Many are endemic to the region and extremely rare. Each species' identification characteristics, habitat, range, and threats were discussed. Attendees then shared updates on recent sightings, monitoring results, and genetic findings. Many of these species have not been observed in more than 20 years. CNHP welcomes information on all tracked species, especially sightings within historical locations.

After lunch, several partner organizations provided updates on rare plant conservation efforts. Phil Krening, a Bureau of Land Management (BLM) ecologist, highlighted the BLM's plant conservation program, including new rules elevating the role of conservation within the agency's mission. He shared methods and findings from his recent study, which estimated the minimum population size of the federally endangered *Sclerocactus dawsoniae* (Dawson's hookless cactus) at 17,000 individuals.

Mit McGlaughlin, a University of Northern Colorado professor, presented genetic findings on two rare species: *Eutrema penlandii* (Mosquito Range mustard) and *Lygodesmia doloresensis* (Dolores River skeletonplant). The study on *Eutrema penlandii* ►



A few of the plants discussed at the 2024 Rare Plant Symposium. From left: *Physaria pulvinata* (cushion bladderpod) © Jessica Smith, *Ipomopsis polyantha* (Pagosa skyrocket) © Jessica Smith, *Oenopsis puebloensis* (Pueblo goldenplant) © Susan Panjabi.

◀ identified the genetic structure and diversity across its range to prioritize populations for conservation. The research on *Lygodesmia doloresensis* confirmed its status as a unique species and uncovered a hybrid between *L. doloresensis* and *L. grandiflora*.

Jennifer Ackerfield, head curator of Natural History Collections and associate director of Biodiversity Research at Denver Botanic Gardens (DBG), provided updates on DBG's rare plant conservation programs. In 2024, DBG received funding to implement the North American Botanic Garden Strategy for Alpine Plant Conservation, conducted demographic monitoring of *Physaria alpina* (Avery Peak twinpod), collected seeds from several rare species, revisited historical locations of *Frasera coloradensis* (Colorado green gentian), and studied transplant success of *Penstemon penlandii* (Kremmling beardtongue).

Gwen Kittel, retired botanist, updated the group on monitoring efforts for three rare Colorado willow species and highlighted the Adopt-a-Rare-Plant Program, a volunteer initiative between CNHP and the Colorado Native Plant Society (CoNPS) to locate and update information on targeted rare plant species. Mike Kirkpatrick, a US Forest Service botanist, rounded out the partner updates by announcing a newly discovered population of *Erythranthe*

*gemmipara* (Rocky Mountain monkeyflower) in the South Platte River drainage.

In the final session, CNHP staff provided updates and opportunities for engagement. Georgia Doyle, CNHP botanist, discussed updates to CNHP's list of tracked plant species, including additions and those downgraded to watchlist status. CNHP manages a statewide database of rare species locations and status, and accepts data submissions through various platforms, including element-occurrence forms, herbarium collections, and CNHP's iNaturalist project.

Finally, Renee Rondeau, CNHP ecologist, presented on the status of San Juan alpine plants. She discussed monitoring data on *Draba graminea* (San Juan draba) that suggests a decline, likely related to climate-change impacts. She also proposed using botanical niche concepts—such as longevity, reproductive modes, and root characteristics—to standardize rare plant monitoring protocols, seeking feedback from the group.

The 2024 Rare Plant Symposium was an excellent opportunity to learn about rare plants and their conservation efforts, network with individuals and organizations, and highlight many of the important rare species that are key parts of Colorado's biodiversity. 🌀

## Blast from the Past

### Second Annual Colorado Rare Plant Symposium

Help decide the future of rare plant work in Colorado! Join members of the Colorado Rare Plant Technical Committee (RPTC) in the second annual Colorado Rare Plant Symposium. The RPTC is an ad-hoc group of agency and non-government organization botanists that has been working for years to advance rare plant efforts in the state. Your personal knowledge of Colorado field botany makes your contribution to this effort critical. This half-day workshop will be held in collaboration with the CoNPS annual meeting. For their second annual workshop the RPTC has selected 18 plant species that are globally rare (G1), many of which are known only from Colorado. On Friday night the RPTC will present the results of last year's efforts on the federally listed species in our state (see agenda). Please join them and help advance conservation efforts for these globally-rare species.

*From Aquilegia. 2005. 29.3:1. First Symposium advertised in Aquilegia.*

Line drawing of *Penstemon gibbensii* (Gibbon's beardtongue), a G1S2 plant found in northwest Colorado. © Kaye H. Thorne

