

Review of Selected Rare Plants of South-Central/Southeast Colorado

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& Colorado
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Program Botany
Team



Physaria rollinsii
Photo by Steve O'Kane



Conservation Status Definitions

Global (G) and State (S) Ranks

G/S1 —Critically Imperiled

G/S2 —Imperiled

G/S3 —Vulnerable

G/S4 —Apparently Secure

G/S5 —Secure



G#T# Trinomial (T) rank for subspecies or varieties



Ranking Criteria

- Number of occurrences
- Range
- Occupied habitat
- Quality of habitat
- Abundance
- Threats
- Trend
- Number of protected occurrences



Primary References

Ackerfield, Jennifer. 2022. Flora of Colorado. Fort Worth, BRIT Press.

Colorado Natural Heritage Program (CNHP). 2023. Biodiversity Tracking and Conservation System (BIOTICS). Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO.

NatureServe. 2023. NatureServe Network Biodiversity Location Data accessed through NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. <https://explorer.natureserve.org/>.

SEINet Portal Network. 2023. <http://swbiodiversity.org/seinet/index.php>.

USDA, NRCS. 2023. The PLANTS Database (<http://plants.usda.gov>). National Plant Data Team, Greensboro, NC. USA.

Personal communications



Apios americana

American groundnut

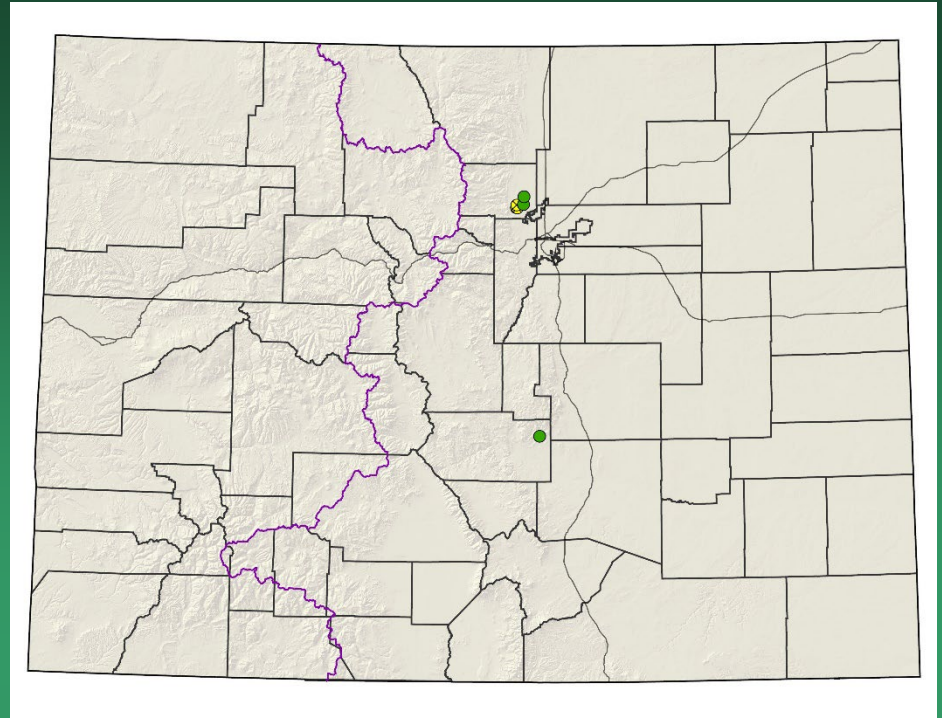
Rank: G5/S1

Status: None

Elevation: 5,100-5,900 ft.

CO occurrences: 6

Historical: 3



- Global distribution: Eastern United States and Canada, Colorado (Boulder & Fremont counties)
- Last observed in Colorado: 2022, Catherine Sounart, iNaturalist
- Primary threats: ditch cleaning, bank erosion, invasion of exotic species, disturbed stream banks, mowing, haying, and grazing.
- Land ownership/management: CPW, local government, private



Apios americana



Artemisia parryi =

Artemisia laciniata ssp. *parryi*

Parry's wormwood

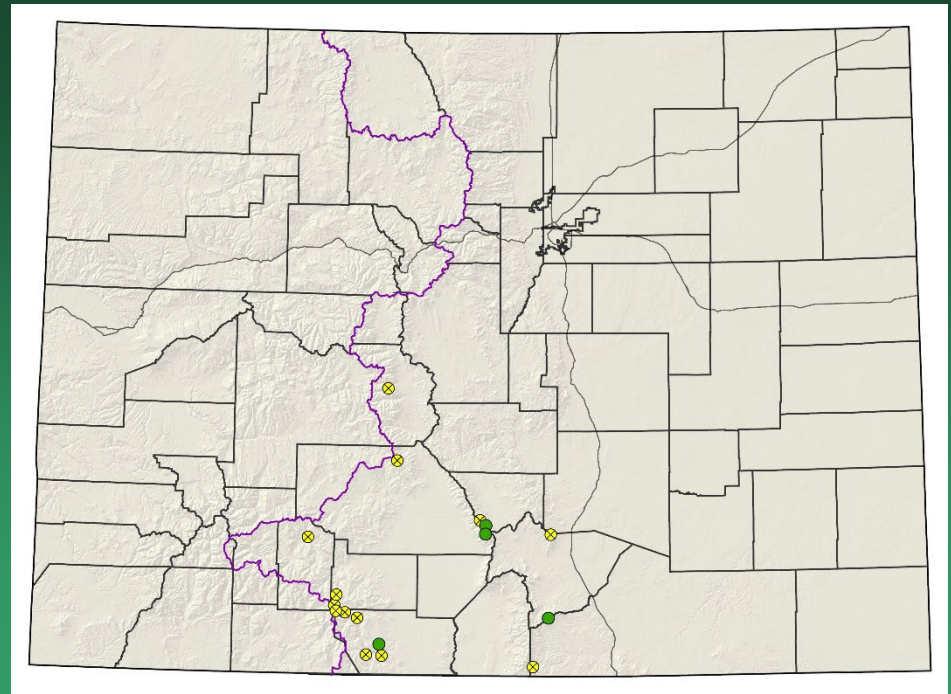
Rank: GNRT3/S2

Status: None

Elev.: 10,000-12,500 ft.

CO occurrences: 17

Historical: 13



- Global distribution: Colorado (Chaffee, Conejos, Custer, Huerfano, Las Animas, Mineral, Rio Grande, & Saguache counties) and northern New Mexico.
- Last observed in Colorado: 2018 (Jennifer Ackerfield, iNaturalist)
- Primary threats: unknown
- Land ownership/management: USFS, NPS, SLB, private



Artemisia parryi



Astragalus anisus

Gunnison milkvetch

Rank: G3/S3

Status: BLM Sensitive
SWAP Tier 2

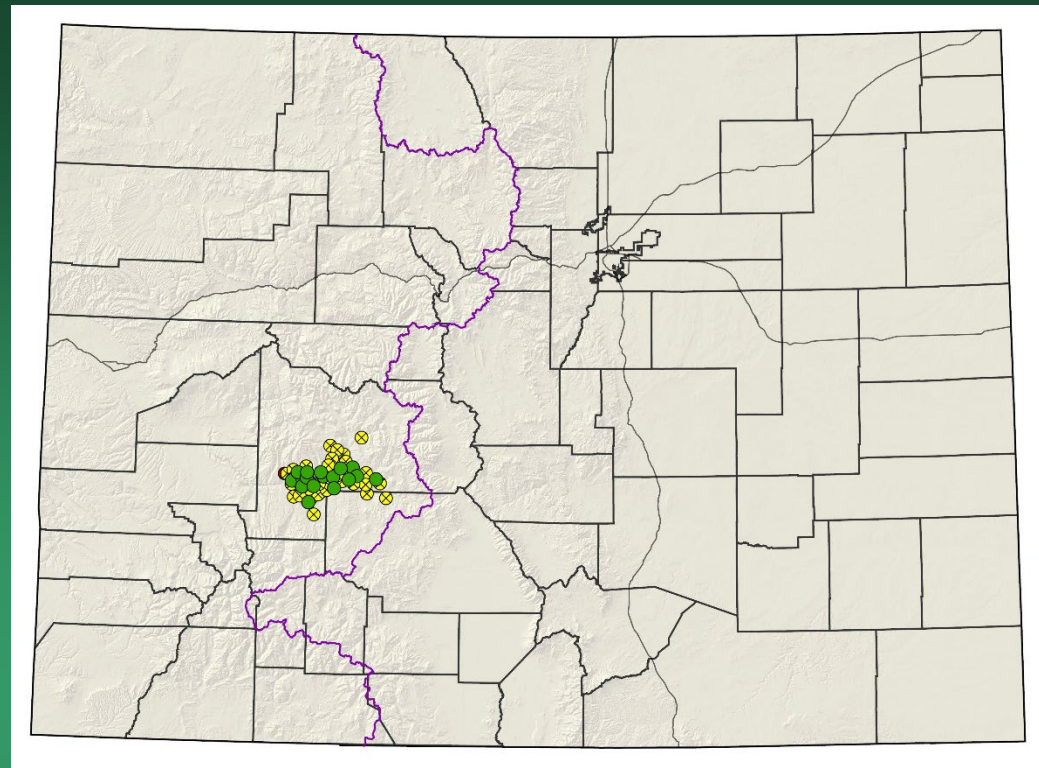
Elev.: 7,500-9,700 ft.

CO occurrences: 50

Historical: 31

#Extirpated: 1

- Global distribution: Colorado endemic (Gunnison & Saguache)
- Last observed in Colorado: 2021, Panjabi – CNHP; Savanna Smith and Lindsey Conrad - CNAP
- Primary threats: off-road vehicle use, non-motorized recreation, invasive species
- Land ownership/management: BLM, USFS, SLB, private, NPS,



Astragalus anisus

a 2004 analysis by the botanical taxonomist [David G. Frodin](#), wikipedia

Rank ↕	Genus ↕	Species ↕	Family ↕	Species list ↕
1	<i>Astragalus</i>	3,270	Fabaceae	List of <i>Astragalus</i> species
2	<i>Bulbophyllum</i>	2,032	Orchidaceae	List of <i>Bulbophyllum</i> species
3	<i>Psychotria</i>	1,951	Rubiaceae	List of <i>Psychotria</i> species
4	<i>Euphorbia</i>	1,836	Euphorbiaceae	List of <i>Euphorbia</i> species
5	<i>Carex</i>	1,795	Cyperaceae	List of <i>Carex</i> species

Astragalus anisus



Astragalus brandegeei

Brandegee milkvetch

Rank: G3G4/S2

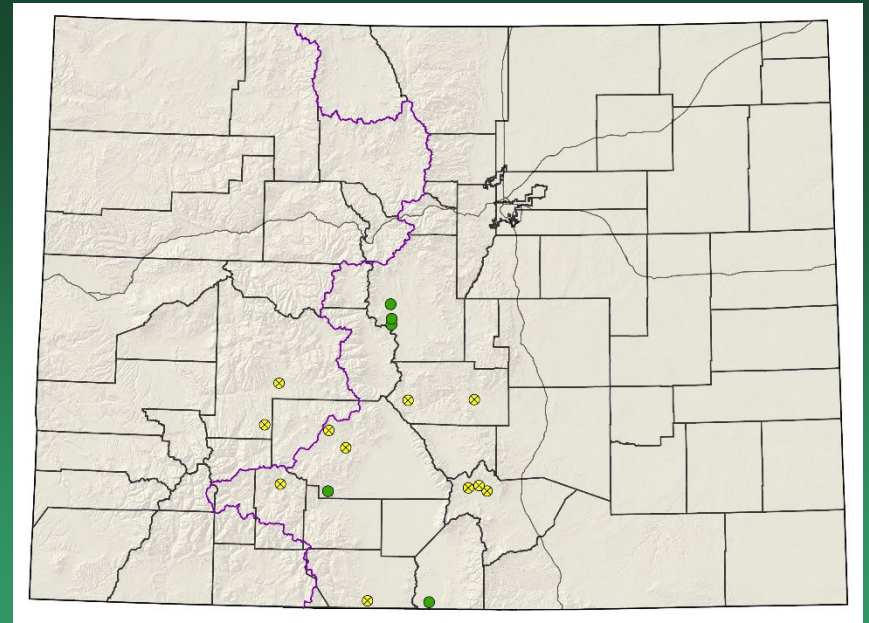
Status: None

Elev.: 7,000-9,200 ft.

CO occurrences: 16

Historical : 11

- Global distribution: Arizona, New Mexico, Utah, Colorado (Conejos, Costilla, Fremont, Gunnison, Huerfano, Mineral, Park, & Saguache).
- Last observed in Colorado: 2023, Matt Langemeier, Scotty Smith
Bob Lagier - iNaturalist
- Primary threats: unknown
- Land ownership/management: private, USFS, BLM, local government, SLB, NGO



Astragalus brandegeei



Astragalus missouriensis

var. *humistratus*

Missouri milkvetch

Rank: G5T2/S2

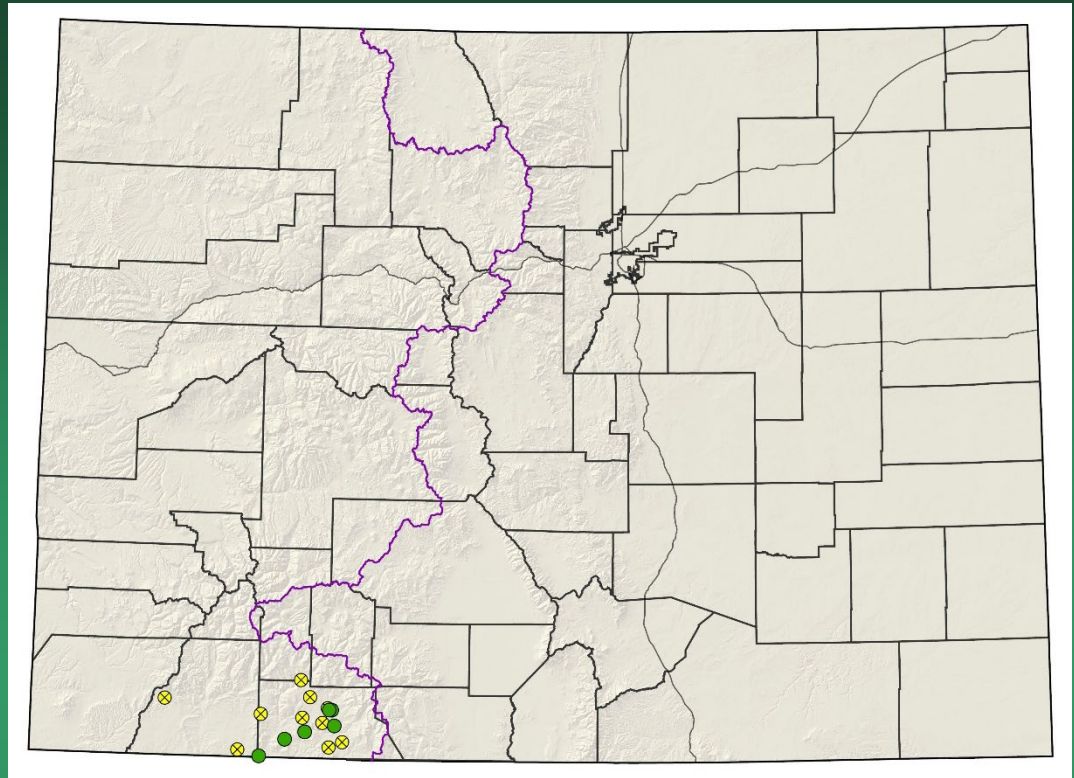
Status: USFS Sensitive

SWAP Tier 2

Elev.: 6,100-8,300 ft.

CO occurrences: 16

Historical: 10



- Global distribution: New Mexico (Rio Arriba county),
- Colorado (Archuleta, Hinsdale, & La Plata)
- Last observed in Colorado: 2021, Ross McCauley - Fort Lewis College specimen
- Primary threats: roads, road maintenance, urban development
- Land ownership/management: private, USFS, Tribal



Astragalus missouriensis
var. *humistratus*



Astragalus ripleyi

Ripley milkvetch

Rank: G3/S2

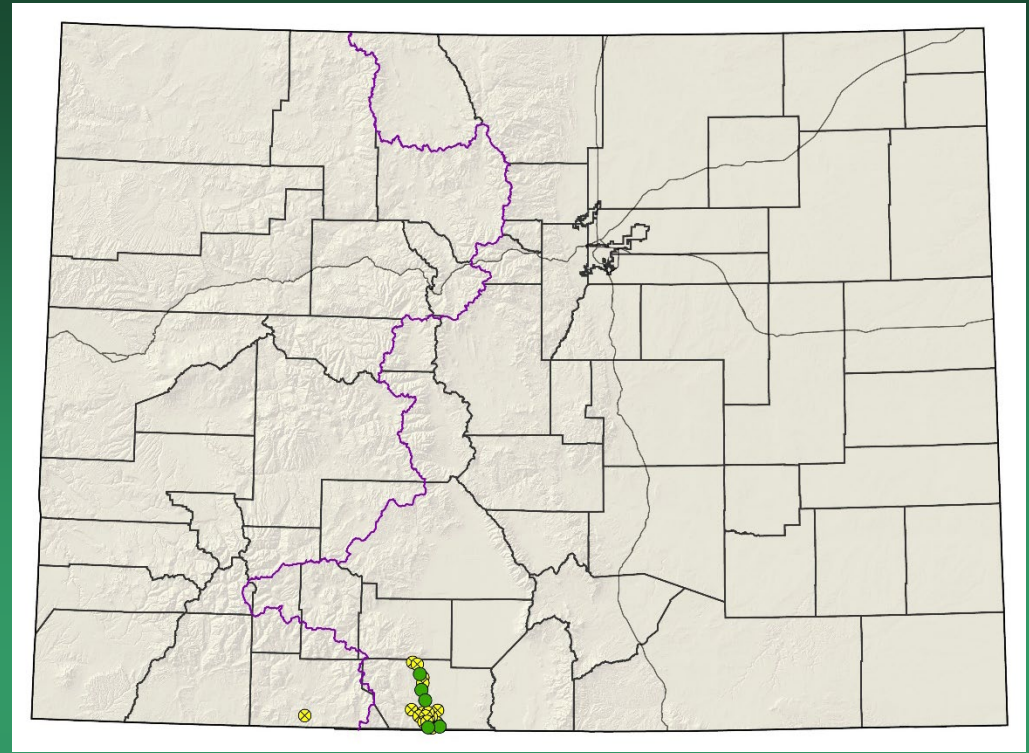
Status: BLM and USFS
Sensitive

Elev.: 8,100-10,200 ft.

CO occurrences: 22

Historical: 17

- Global distribution: New Mexico, Colorado (Conejos & Archuleta)
- Last observed in Colorado: 2021, Jessica Smith - CNHP
- Primary threats: livestock grazing, invasive species
- Land ownership/management: USFS, BLM, private, CPW, SLB



Astragalus ripleyi



Castilleja lineata

Marsh-meadow Indian-paintbrush

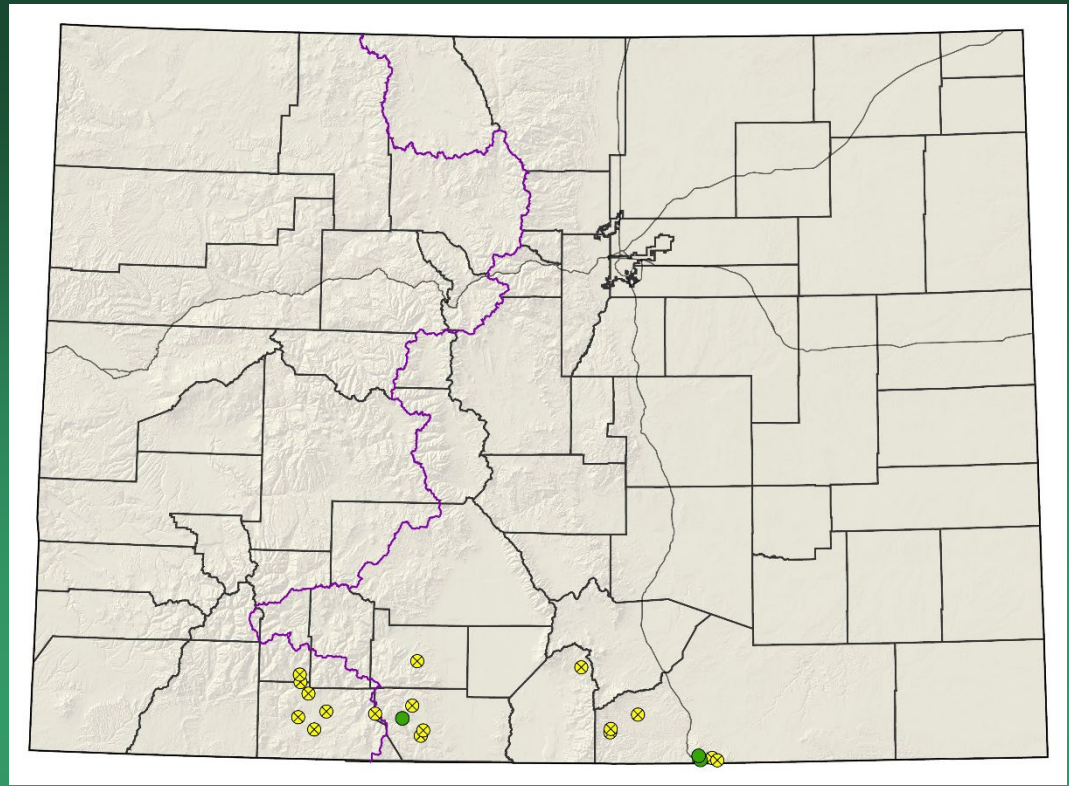
Rank: G4?/S2

Status: None

Elev.: 7,100-8,800 ft.

CO occurrences: 20

Historical: 17



- Global distribution: Arizona, New Mexico, Colorado (Archuleta, Conejos, Costilla, Hinsdale, Las Animas, & Rio Grande)
- Last observed in Colorado: 2020 Rondeau, Anderson – CNHP – Fishers Peak State Park
- Primary threats: recreation, road and trail maintenance, livestock grazing, invasive species
- Land ownership/management: private, USFS, CPW



Castilleja lineata



Cirsium culebraense

Culebra thistle

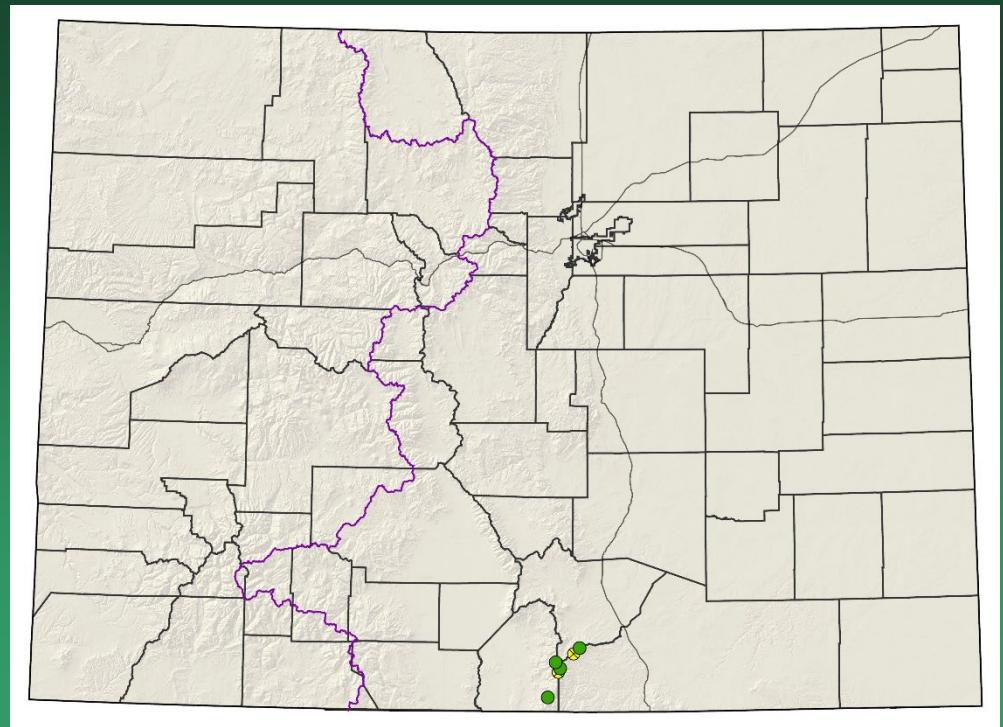
Rank: G2/S2

Status: None

Elev.: 10,500-13,500 ft.

CO occurrences: 6

Historical: 2



- Global distribution: northern New Mexico, Colorado (Costilla, Huerfano, and & Las Animas)
- Last observed in Colorado: 2023, Thomas Green – online field form and iNaturalist
- Primary threats: unknown
- Land ownership/management: USFS – Pike San Isabel, private



Cirsium culebraense

Ackerfield | HEAD TOPICS

The Culebra thistle

The Culebra thistle is endemic to the Culebra Range of the Sangre de Cristo Mountains in southern Colorado and northern New Mexico, where it rises tall against a landscape of tiny alpine plants. Type specimens were made from this very thistle by the author and fellow botanist Lori Brummer.

Ackerfield | HEAD TOPICS

Hiding in plain sight:

Two new species of alpine thistles, *Cirsium culebraensis* and *C. funkiae* (Cardueae) from the southern Rocky Mountains (United States)

Jennifer R. Ackerfield^{1,2} 

¹ Denver Botanic Gardens, 1007 York St., Denver, CO 80206, U.S.A. jenniferackerfield@botanicgardens.org

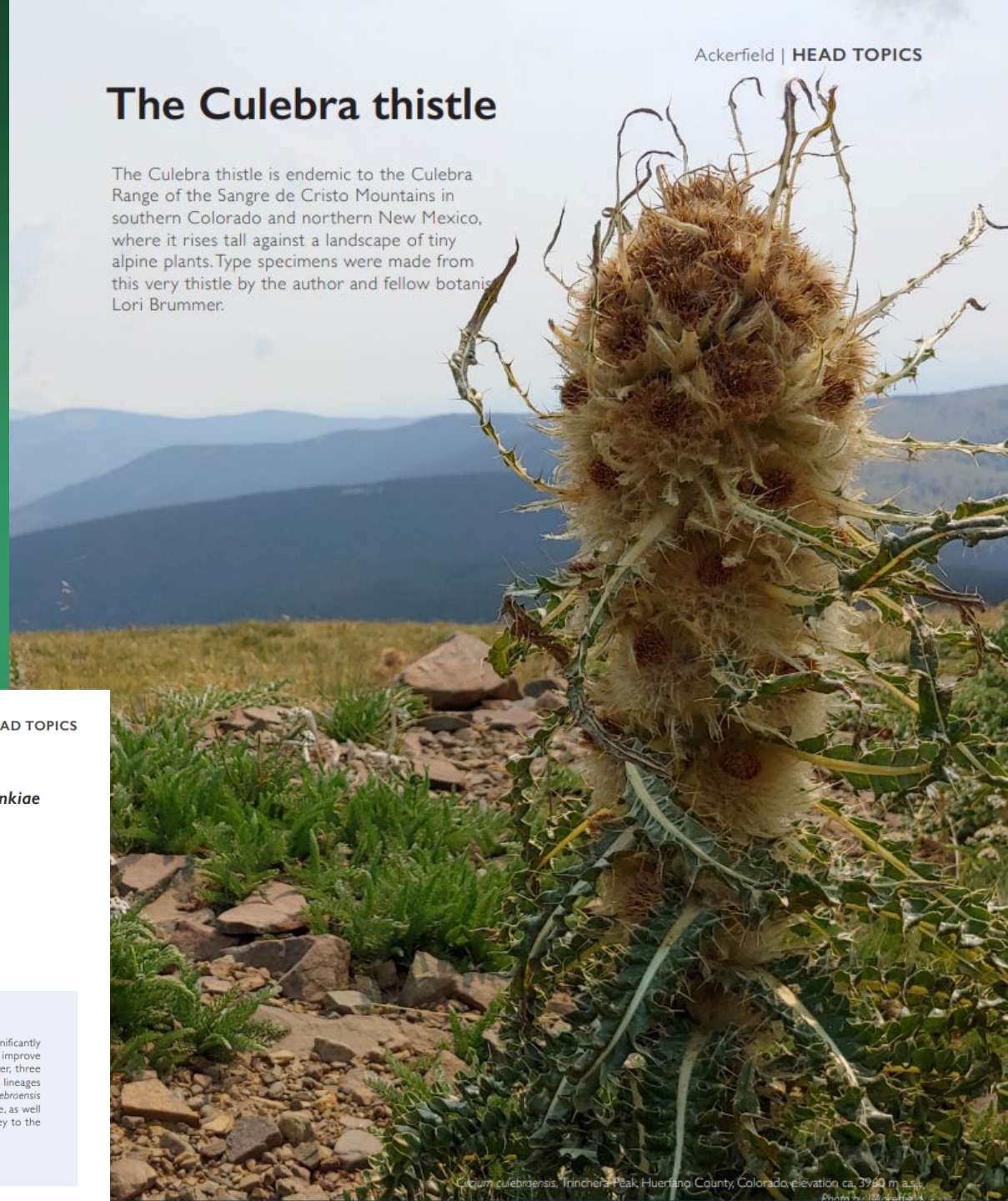
² University of Colorado Denver, 1201 Larimer St, Denver, CO 80204, U.S.A.

DOI: <http://dx.doi.org/10.53875/capitulum.01.2.01>

ABSTRACT

The circumscription of the *Cirsium eatonii* varietal complex of North American alpine thistles has changed significantly given recent molecular phylogenetic studies demonstrating that the complex was not monophyletic. To improve their taxonomy, all varieties within the *C. eatonii* complex were recognized as distinct species. However, three remaining unique evolutionary lineages corresponded to undescribed phenotypic variation. Two of these lineages from the southern Rocky Mountains in the United States are described and illustrated here as *Cirsium culebraensis* sp. nov. and *Cirsium funkiae* sp. nov. A combination of molecular, morphological, and geographical evidence, as well as, a bit of historical detective work was used to sort out the *C. eatonii* varietal complex taxonomy. A key to the recognized species is provided.

Keywords: Funk's thistle, Sangre de Cristo Mountains, Culebra Range



Cirsium culebraensis, Trinchera Peak, Huerfano County, Colorado, elevation ca. 3960 m a.s.l.

Photo by J. Ackerfield

Cleomella multicaulis =

Cleome multicaulis

Slender spider-flower

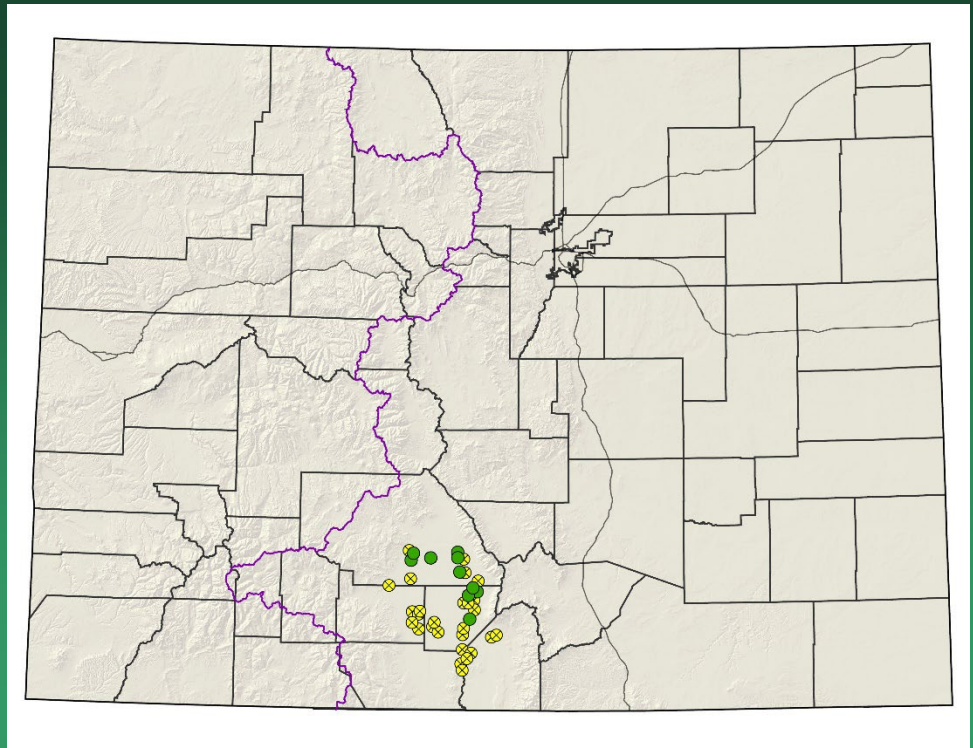
Rank: G2G3/S2S3

Status: BLM Sensitive,
SWAP Tier 2

Elev.: 7,500-8,200 ft.

CO occurrences: 37

Historical: 27



- Global distribution: Mexico, Texas, Arizona, New Mexico, Wyoming, Colorado (Alamosa, Conejos, Costilla, Rio Grande, & Saguache)
- Last Observed in Colorado: 2021, Savanna Smith and Lindsey Conrad - CNAP
- Primary threats: draining of wetlands
- Land ownership/management: BLM, private, NGO/land trust, NPS, FWS, SLB, CPW, BOR





Cleomella multicaulis

Descurainia kenheilii Heil's tansy mustard

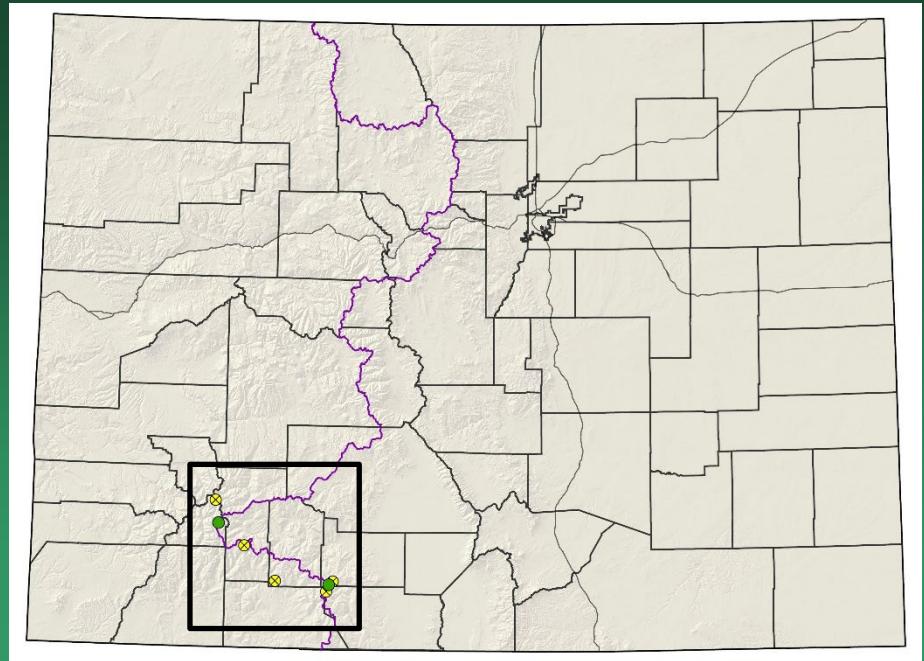
Rank: G2/S2

Status: SWAP Tier 1

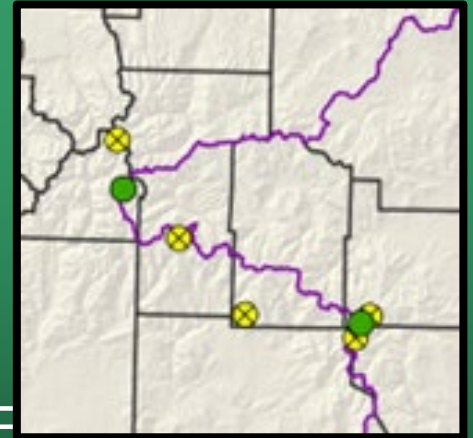
Elev.: 10,000-13,000 ft.

CO occurrences: 7

Historical: 6



- Global distribution: Colorado endemic (Conejos, Hinsdale, Mineral, Rio Grande, & San Juan)
- Last observed in Colorado: 2021, Scotty Smith
- Primary threats: sheep grazing, recreation
- Land ownership: BLM, private, USFS – San Juan NF



Descurainia kenheilii



Draba malpighiacea
Malpighiaceae draba

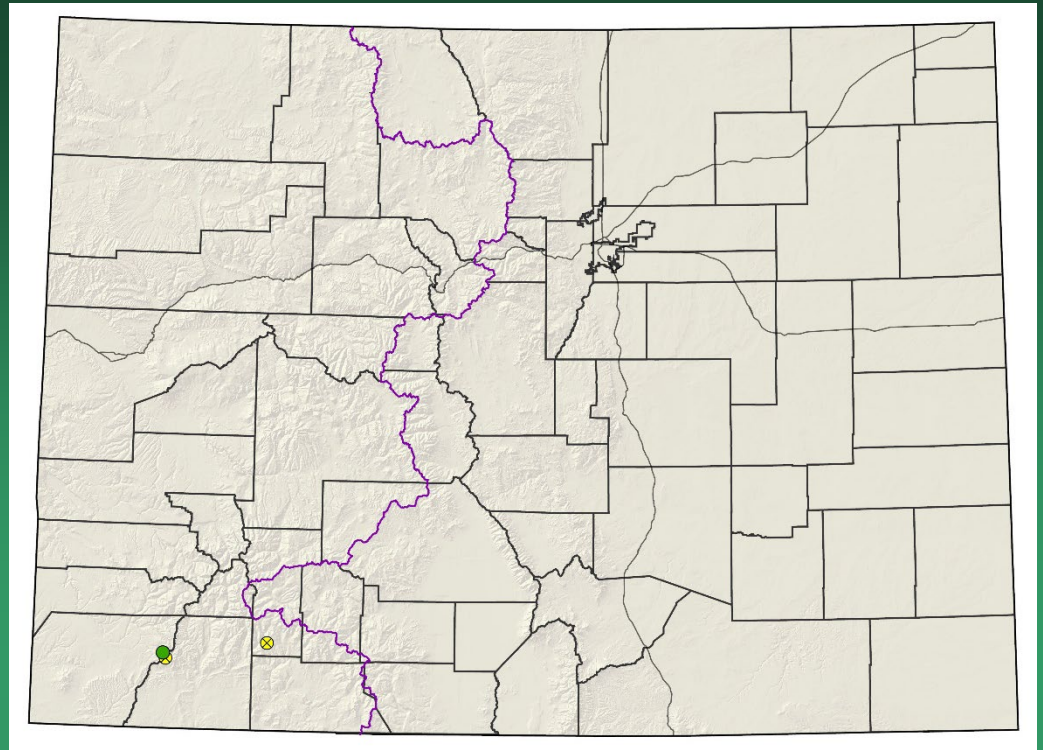
Rank: G1?/S1?

Status: SWAP Tier 1

Elev.: 9,700-13,000 ft.

CO occurrences: 3

Historical: 2



- Global distribution: Colorado endemic (Hinsdale, La Plata, & Montezuma)
- Last observed in Colorado: 2012, Peggy Lyon - CNHP
- Primary threats: unknown
- Land ownership/management: USFS - San Juan NF, private



Draba malpighiacea



Draba smithii

Smith's whitlow-grass

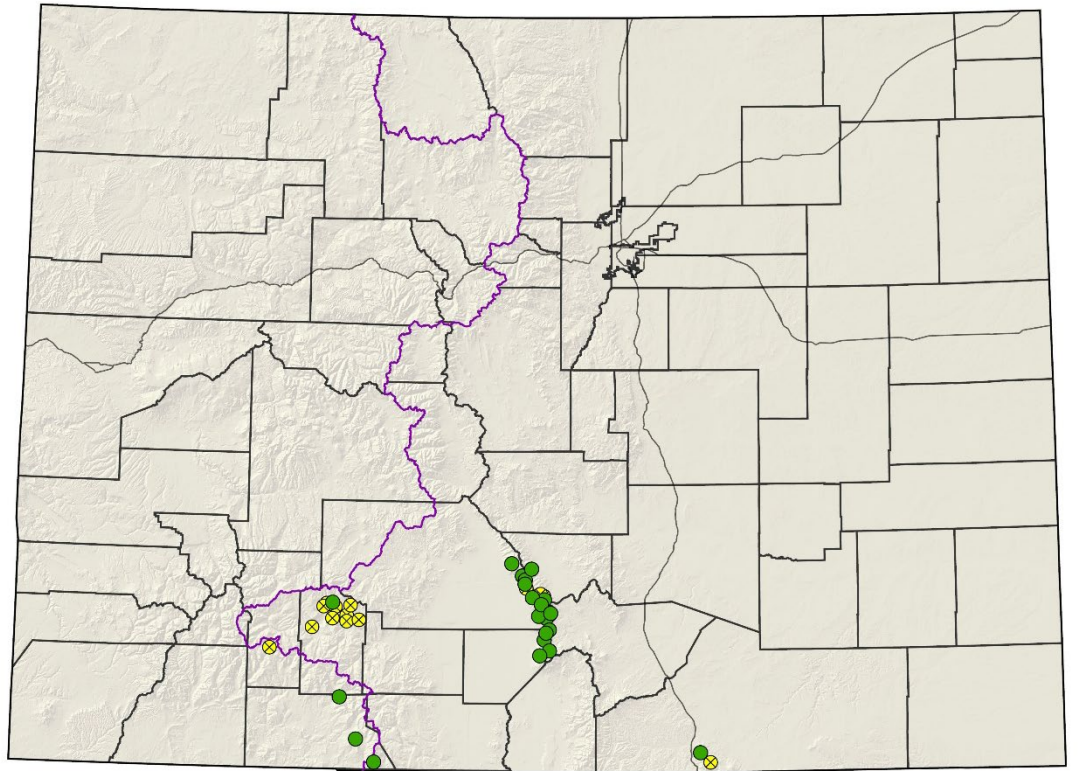
Rank: G3/S3

Status: USFS Sensitive
SWAP Tier 2

Elev.: 7,700-12,700 ft.

CO occurrences: 36

Historical: 14



- Global distribution: New Mexico (Taos County), Colorado (Alamosa, Archuleta, Conejos, Custer, Hinsdale, Las Animas, Mineral, & Saguache)
- Last observed in Colorado: 2022, Carol English – Great Sand Dunes NP
- Primary threats: habitat modification from hiking and construction
- Land ownership/management: USFS, NPS, private



Draba smithii



Hackelia besseyi

Bessey's stickseed

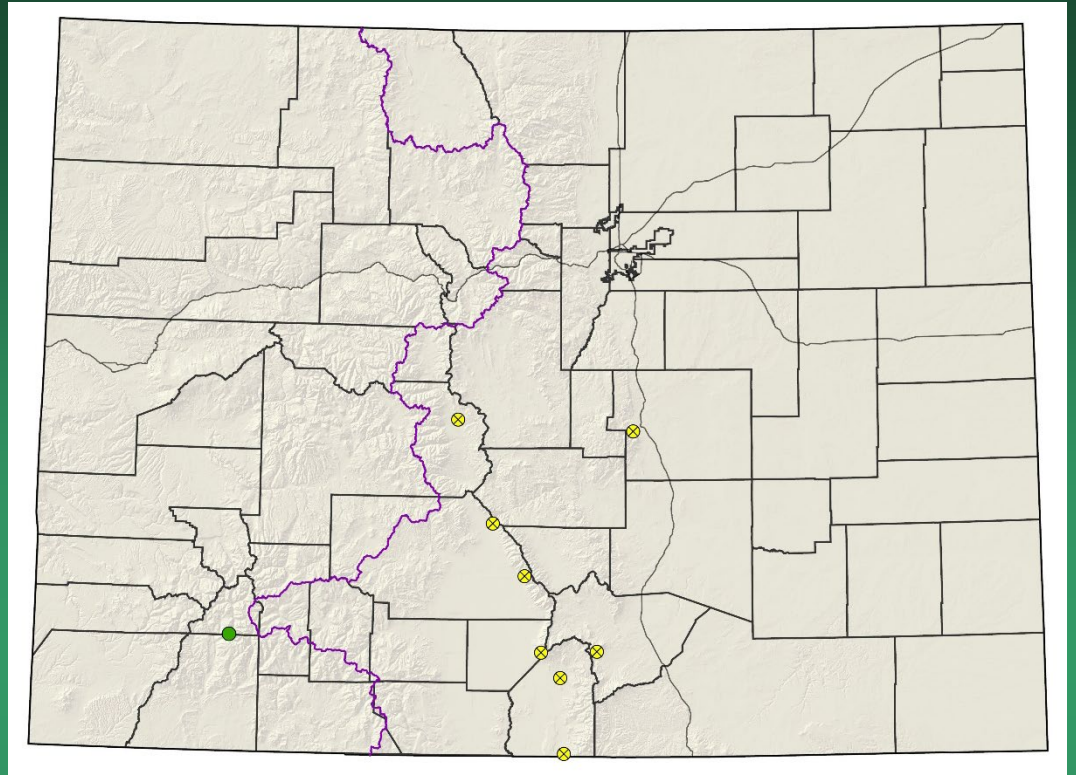
Rank: G2G3/S2

Status: None

Elev.: 8,300-10,800 ft.

CO occurrences: 9

Historical: 8



- Global distribution: Arizona, New Mexico, Texas, Colorado (Alamosa, Chaffee, Costilla, El Paso, Huerfano, Las Animas, Saguache, & San Juan)
- Last observed: 2004, G. Rink – San Juan College Herbarium specimen
- Primary threats: unknown
- Land ownership/management: USFS, private, BLM, local government



Hackelia besseyi

Hackelia besseyi (Bessey's Stickseed)

iNaturalist....

This taxon has no default photo!

Add One Now



Neoparrya lithophila

Aletes lithophilus

Rock-loving Neoparrya

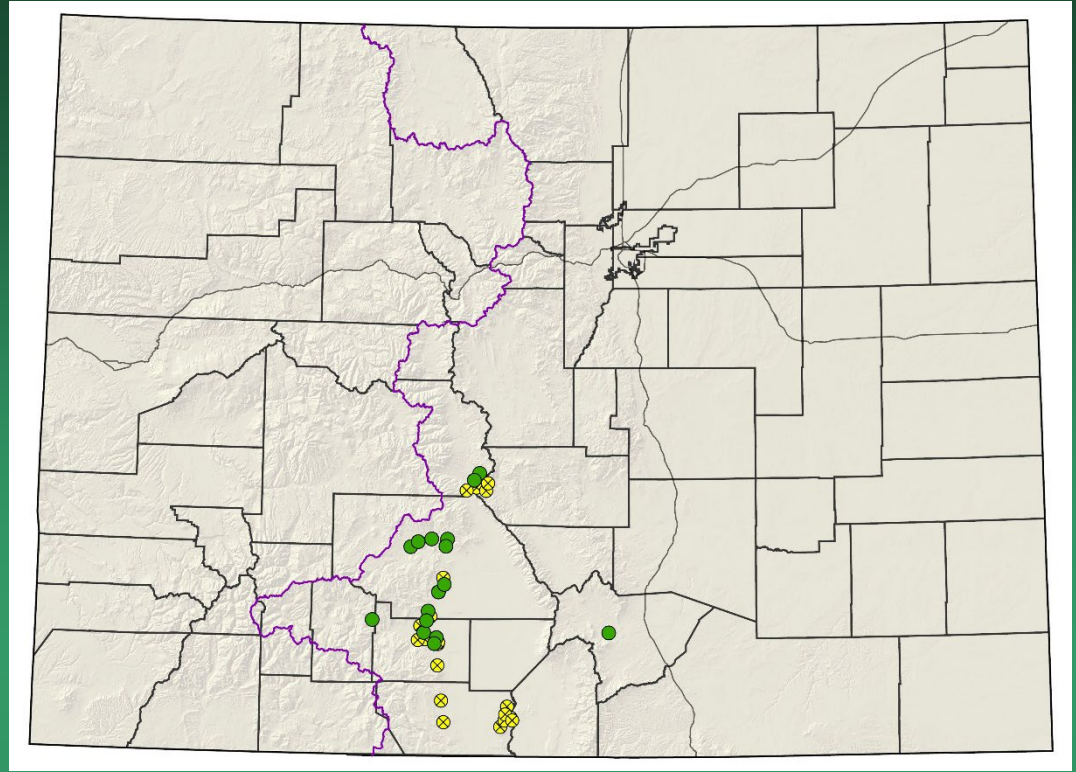
Rank: G3/S3

Status: BLM and USFS
Sensitive

Elev.: 7,200-10,300 ft.

CO occurrences: 38

Historical: 22



- Global distribution: New Mexico, Wyoming (historical), and Colorado (El Paso, Jefferson, Larimer, Las Animas, Mineral, Saguache, Teller)
- Last observed in Colorado: 2021, Jessica Smith - CNHP
- Primary threats: recreation, livestock grazing
- Land ownership: BLM, USFS, private, SLB, CPW



Neoparrya lithophila



Oreocarya pustulosa

Cryptantha cinerea var. *pustulosa*

San Juan Cat's-eye

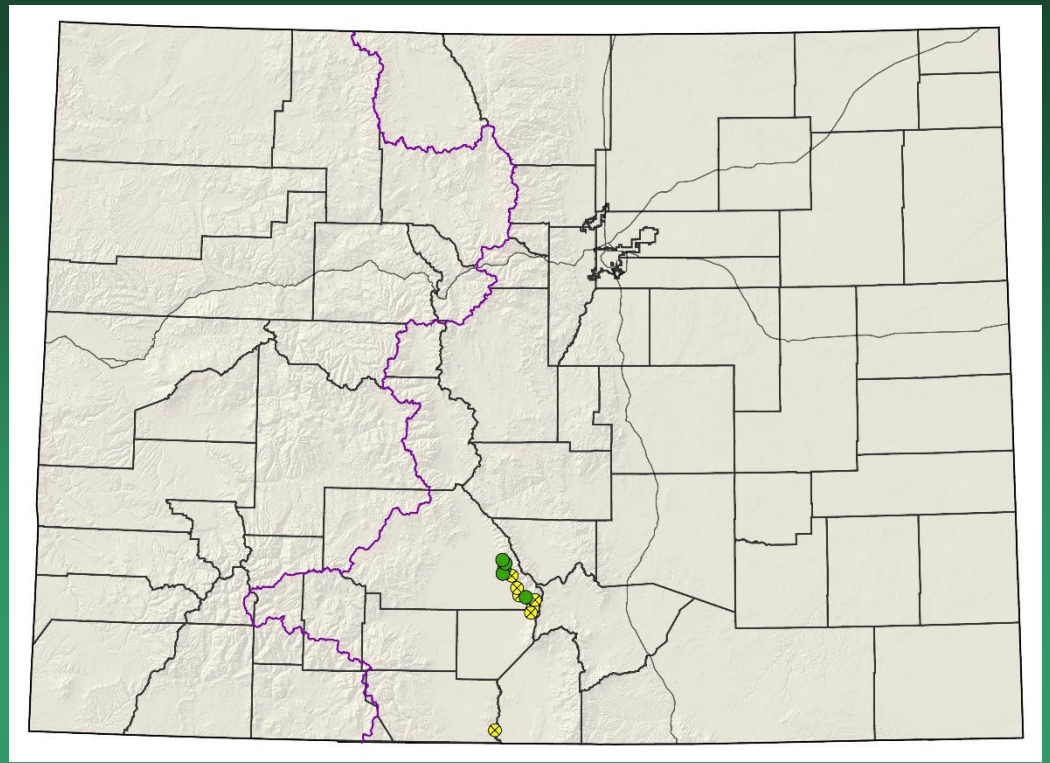
Rank: G5TNR/S1

Status: None

Elev.: 7,400-9,000 ft.

CO occurrences: 13

Historical: 8



- Global distribution: Arizona, New Mexico, Utah, Colorado (Alamosa, Costilla, Saguache)
- Last observed in Colorado: 2017, Handwerk, Pam Smith - CNHP
- Primary threats: ORV, livestock grazing
- Land ownership: NPS, private, USFS, FWS



Oreocarya pustulosa



Oreocarya weberi

Cryptantha weberi

Weber's Cat's-eye

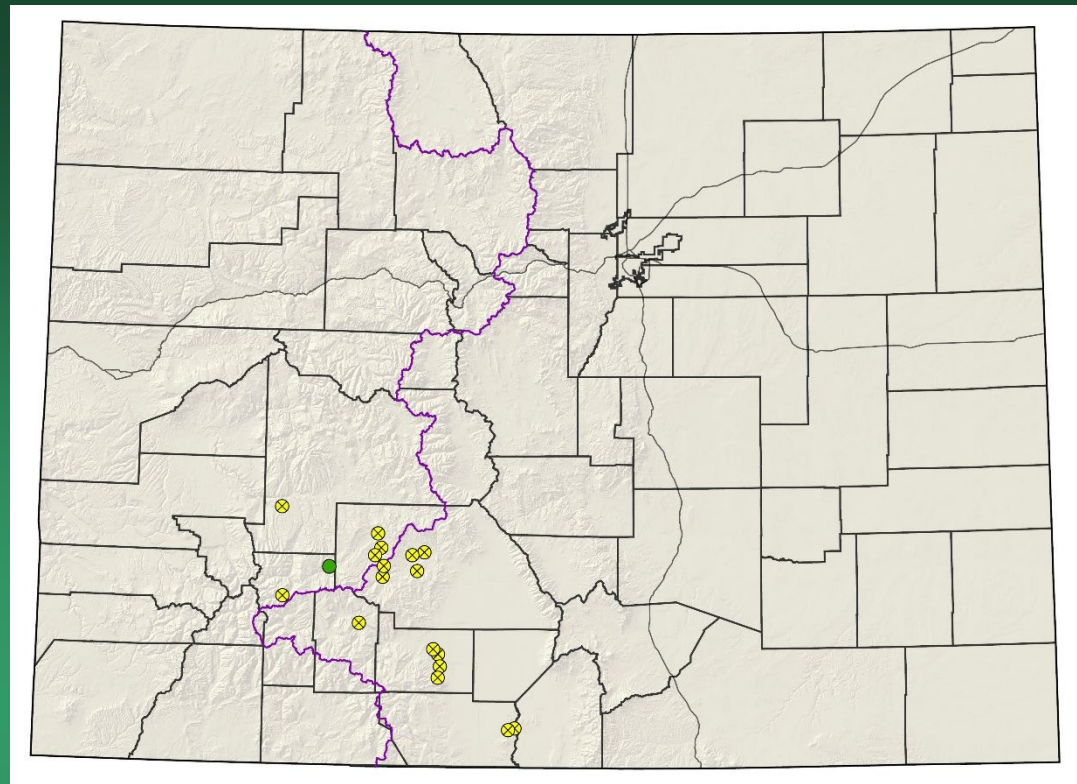
Rank: G3/S3

Status: None

Elev.: 7,700-10,400 ft.

CO occurrences: 18

Historical: 17



- Global distribution: Colorado endemic (Conejos, Gunnison, Hinsdale, Mineral, Rio Grande & Saguache)
- Last observed in Colorado: 2010, Charles Williams – RMBL Herbarium
- Primary threats: ORV (many occurrences are inaccessible)
- Land ownership/management: BLM, USFS, private





Oreocarya weberi

Penstemon bleaklyi

Bleakly penstemon

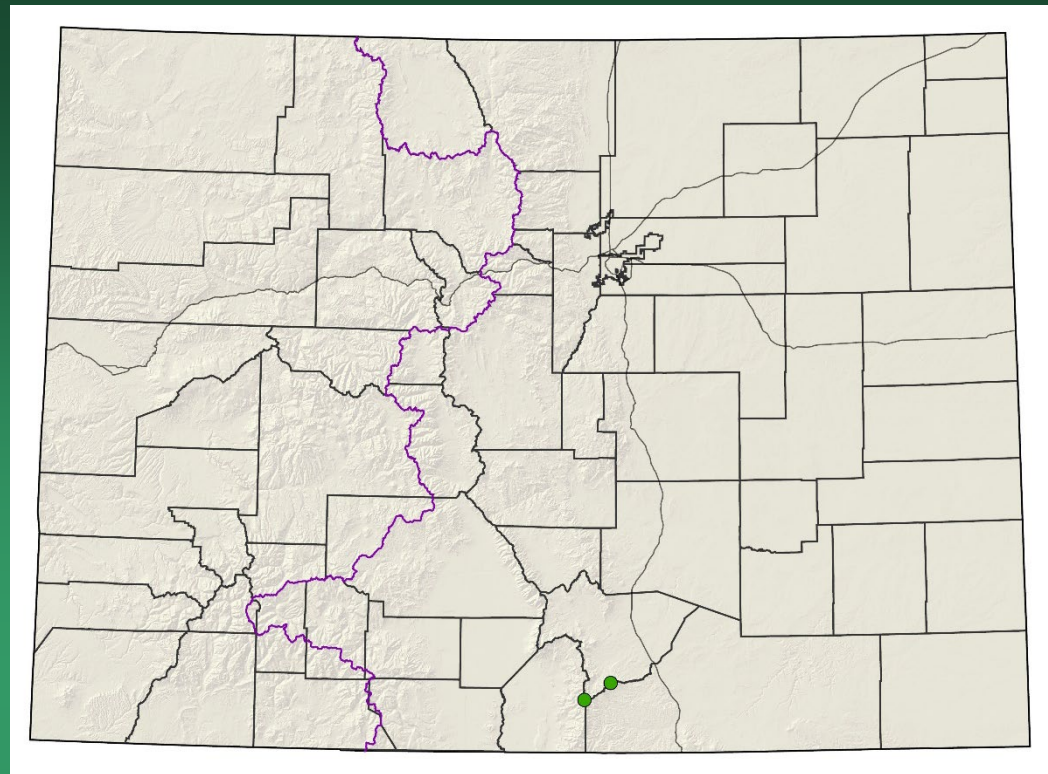
Rank: G1/S1

Status: None

Elev.: 11,000-13,500 ft.

CO occurrences: 2

Historical: 0



- Global distribution: New Mexico, Colorado (Costilla, Huerfano)
- Last observed in Colorado: 2018, Jennifer Ackerfield - iNaturalist
- Primary threats: unknown
- Land ownership/management: USFS - Pike-San Isabel NF



Penstemon bleaklyi



Physaria rollinsii

Rollin's twinpod

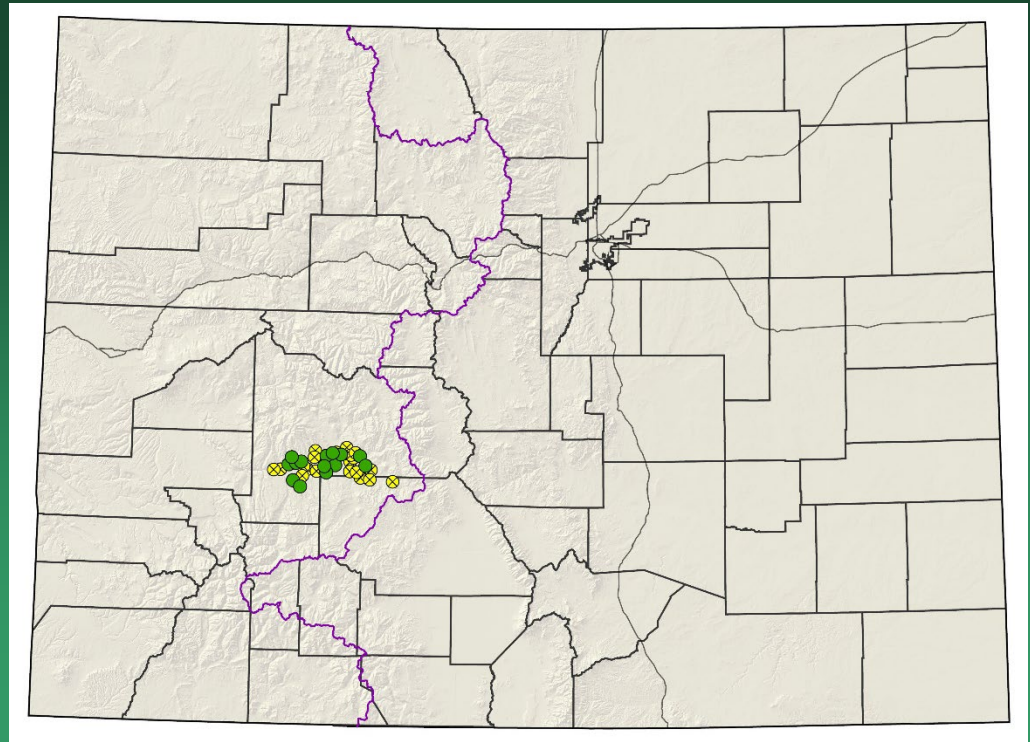
Rank: G2/S2

Status: SWAP Tier 1

Elev.: 7,300-9,300 ft.

CO occurrences: 37

Historical: 23



- Global distribution: Colorado endemic (Gunnison, Saguache)
- Last observed in Colorado: 2022, Savanna Smith and Lindsey Conrad – CO Natural Areas Program
- Primary threats: livestock grazing, recreation, competition from cheatgrass
- Land ownership/management: BLM, private, NPS





Physaria rollinsii

Salix arizonica

Arizona willow

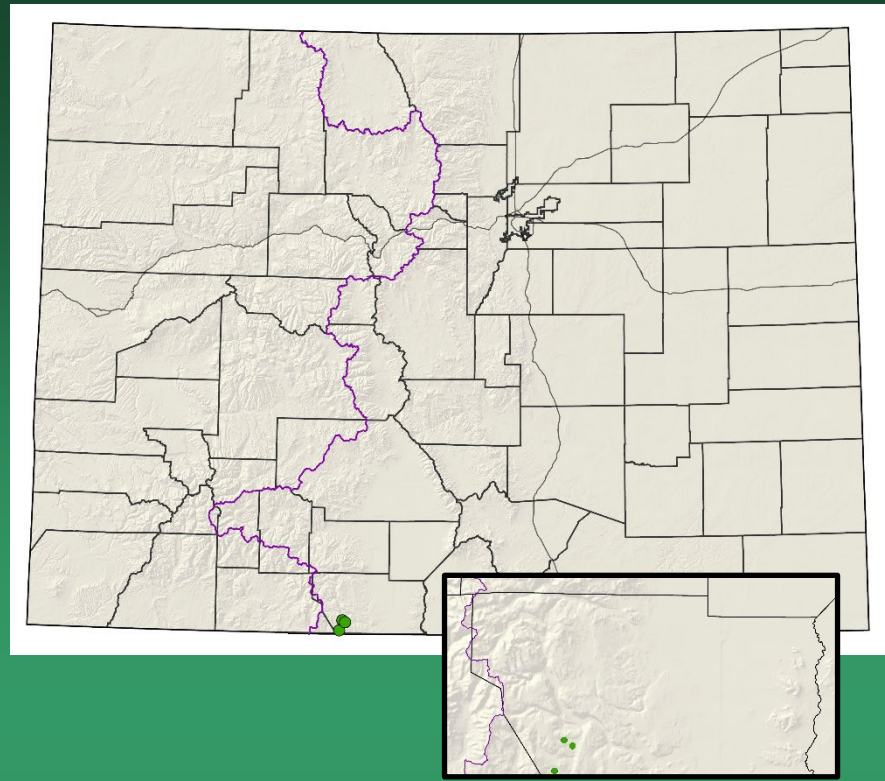
Rank: G2G3/S1

Status: USFS Sensitive
SWAP Tier 2

Elev.: 10,000-10,400 ft.

CO occurrences: 3

Historical: 0



- Global distribution: Arizona, New Mexico, Utah, Colorado (Conejos)
- Last observed in Colorado: 2019, Kelly Garcia - USFS
- Primary threats: livestock grazing, hydrologic alterations, impacts from timber harvesting, railroad
- Land ownership/management: USFS – Rio Grande NF



Salix arizonica



How can you help conserve rare plants?

- Update EORs
- Find new EOs
- Adopt a rare plant
- Learn to recognize rare plant species
- Work with herbaria to document your findings
- Observe pollinators



Taxonomic Uncertainty.....

Taxon	Common Name	G rank	S rank	Endemic	Agency Status
<i>Aletes macedougalii</i> <i>ssp. breviradiatus</i>	Mesa Verde Aletes	G3T2T3	S1	No	SWAP Tier 2
<i>Delphinium robustum</i>	Wahatoya Creek Larkspur	G2G3	S2?	No	SWAP Tier 2
<i>Erigeron wilkenii</i>	Wilken Fleabane	G1	S1	Yes	SWAP Tier 1
<i>Eriogonum saurinum</i> (<i>Eriogonum lonchophyllum</i> var. <i>saurinum</i>)	Dinosaur Buckwheat	G4T3	S1	No	-
<i>Ipomopsis aggregata ssp. weberi</i>	Rabbit Ears Gilia	G5T3Q	S3	Yes	SWAP Tier 2, USFS

