

Review of Previous Meetings

1st Through 6th Annual Colorado Rare Plant Symposia 2004-2009



Steamboat Springs '04 ★
T & E species, statewide

● FORT COLLINS

★ **Loveland '09**
G2G3 species, northern Colorado

Boulder '07

★ **G2G3 species, NE Colorado**

● DENVER

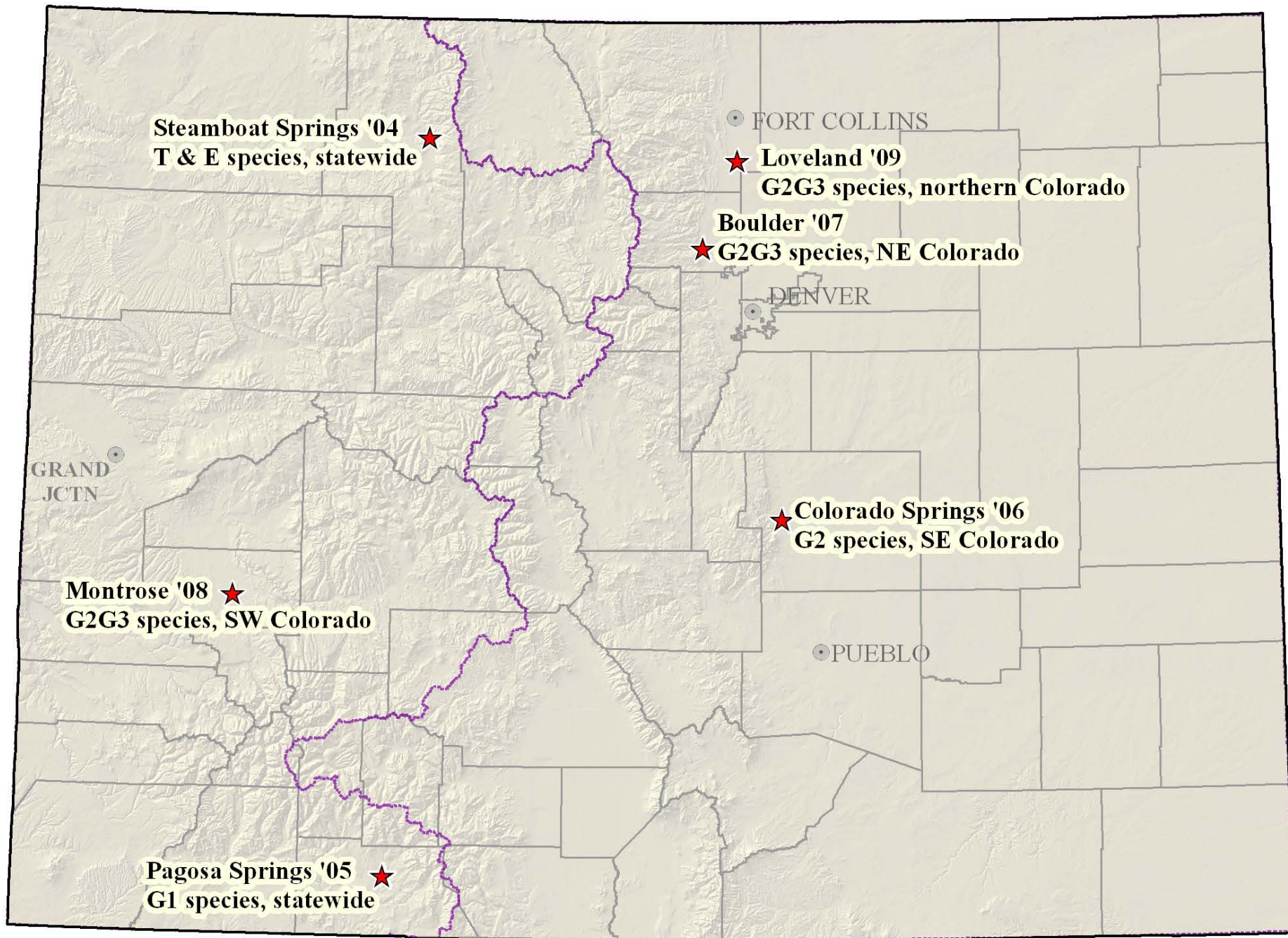
● GRAND
JCTN

Montrose '08 ★
G2G3 species, SW Colorado

★ **Colorado Springs '06**
G2 species, SE Colorado

● PUEBLO

Pagosa Springs '05 ★
G1 species, statewide



Species from previous years

2004 - T & E Species Statewide	2005 - G1 Species Statewide	2006 - G2 Species SE Colo
<i>Astragalus humillimus</i>	<i>Aletes latilobus</i>	<i>Asclepias uncialis</i> ssp. <i>uncialis</i>
<i>Astragalus osterhoutii</i>	<i>Aliciella sedifolia</i>	<i>Cleome multicaulis</i>
<i>Astragalus tortipes</i>	<i>Astragalus lonchocarpus</i> var. <i>hamiltonii</i>	<i>Delphinium ramosum</i> var. <i>alpestre</i>
<i>Botrychium lineare</i>	<i>Astragalus microcymbus</i>	<i>Delphinium robustum</i>
<i>Eriogonum pelinophilum</i>	<i>Astragalus schmolliae</i>	<i>Draba exungiculata</i>
<i>Eutrema edwardsii</i> ssp. <i>penlandii</i>	<i>Cirsium scapanolepis</i>	<i>Draba grayana</i>
<i>Ipomopsis polyantha</i>	<i>Corispermum navicula</i>	<i>Draba smithii</i>
<i>Lesquerella congesta</i>	<i>Cryptantha gypsophila</i>	<i>Grindelia inornata</i>
<i>Oenothera coloradensis</i> ssp. <i>coloradensis</i>	<i>Draba weberi</i>	<i>Herrickia horrida</i>
<i>Pediocactus knowltonii</i>	<i>Erigeron wilkenii</i>	<i>Lesquerella calcicola</i>
<i>Penstemon debilis</i>	<i>Eriogonum brandegeei</i>	<i>Nuttallia chrysantha</i>
<i>Penstemon grahamii</i>	<i>Hackelia gracilentia</i>	<i>Nuttallia densa</i>
<i>Penstemon penlandii</i>	<i>Lygodesmia doloresensis</i>	<i>Oenothera harringtonii</i>
<i>Penstemon scariosus</i> var. <i>albifluvis</i>	<i>Mimulus gemmiparus</i>	<i>Oonopsis foliosa</i> var. <i>monocephala</i>
<i>Phacelia formosula</i>	<i>Oreoxis humilis</i>	<i>Oonopsis puebloensis</i>
<i>Phacelia submutica</i>	<i>Penstemon gibbensii</i>	<i>Oxybaphus rotundifolius</i>
<i>Physaria obcordata</i>	<i>Physaria pulvinata</i>	<i>Penstemon degeneri</i>
<i>Sclerocactus glaucus</i>		<i>Ptilagrostis porteri</i>
<i>Sclerocactus mesae-verdae</i>		<i>Telesonix jamesii</i>
<i>Spiranthes diluvialis</i>		

**2007 - G2G3 Species
NE Colo**

Aletes humilis
Aletes nuttallii
Aquilegia saximontana
Astragalus sparsiflorus
Bolophyta alpina
Carex oreocharis
Draba crassa
Draba globosa
Draba streptobrachia
Eriogonum exilifolium
Heuchera hallii
Nuttallia sinuata
Nuttallia speciosa
Oonopsis wardii
Phacelia denticulata
Physaria bellii
Potentilla ambigens
Potentilla rupincola
Sisyrinchium pallidum

**2008 - G2G3 Species
SW Colo**

Astragalus anisus
Astragalus cronquistii
Astragalus equisolensis
Astragalus iodopetalus
Astragalus naturitensis
Astragalus piscator
Astragalus rafaensis
Boechea crandallii
Camissonia eastwoodiae
Castilleja puberula
Cirsium perplexans
Draba graminea
Erigeron kachinensis
Eriogonum clavellatum
Eriogonum coloradense
Lepidium crenatum
Lesquerella pruinosa
Lesquerella vicina
Lomatium concinnum

Lupinus crassus
Machaeranthera coloradoensis
Oreocarya osterhoutii
Physaria alpina
Physaria rollinsii
Puccinellia parishii
Salix arizonica
Thelypodopsis juniperorum
Townsendia glabella
Townsendia rothrockii

2009 - G2G3 Species Northern Colo

Anticlea vaginatus

Astragalus debequaeus

Boechera glareosa

Botrychium tax. nov. “*furcatum*”

Carex stenoptila

Ipomopsis aggregata ssp. *weberi*

Ipomopsis globularis

Lesquerella parviflora

Limnorchis zothecina

Mentzelia rhizomata

Mertensia humilis

Oenothera acutissima

Oxytropis besseyi var. *obnapiformis*

Penstemon fremontii var. *glabrescens*

Penstemon scariosus var. *cyanomontanus*

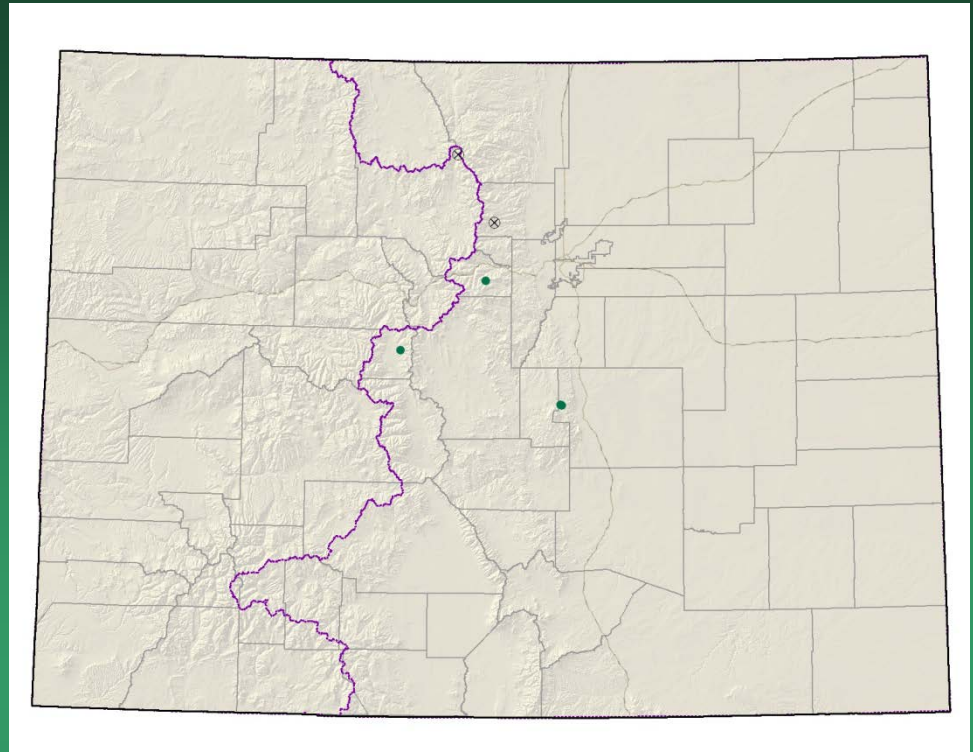
Saussurea weberi

Thelypodium paniculatum

2004
Steamboat Springs
Statewide
T & E Species

Botrychium lineare? Slender moonwort

- Federal status: Removed;
- USFS R2 Sensitive
- Heritage ranks: G2? /S1
- Global distribution: New Brunswick, Quebec, Idaho, Montana, Oregon, California, Wyoming, and Colorado
- Last observed in Colorado: 2005
- Colorado occurrences: 5 or more (2 are historical)
- Colorado individuals: 60
- Primary threats: road maintenance, weeds
- Land ownership/management: USFS, private, city of Denver



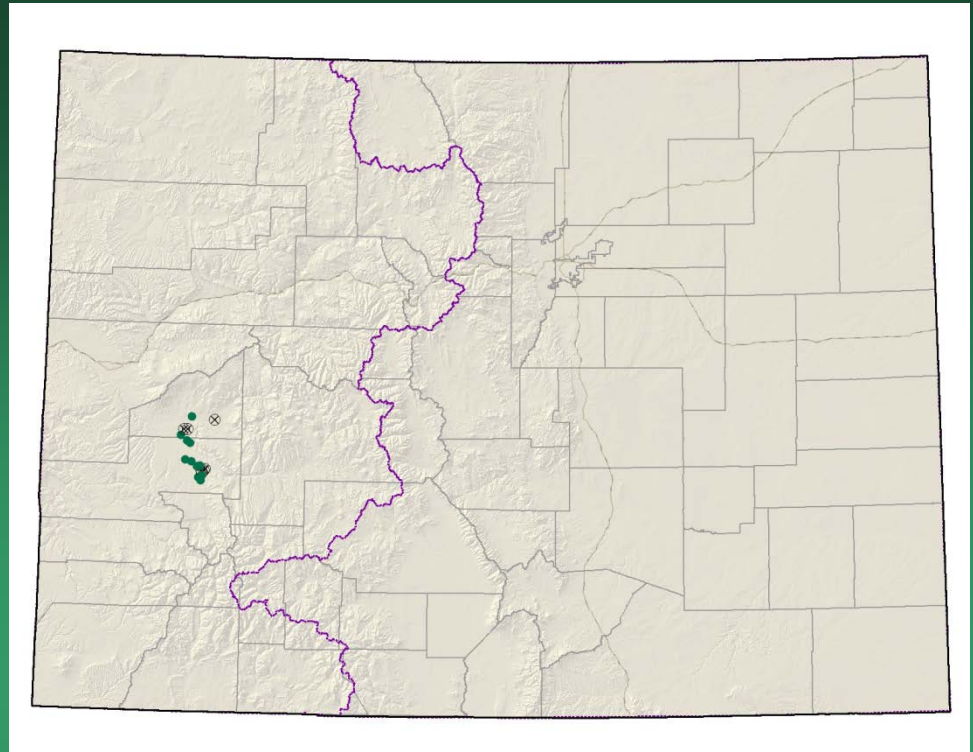
Botrychium lineare



Eriogonum pelinophilum

Clay-loving wild buckwheat

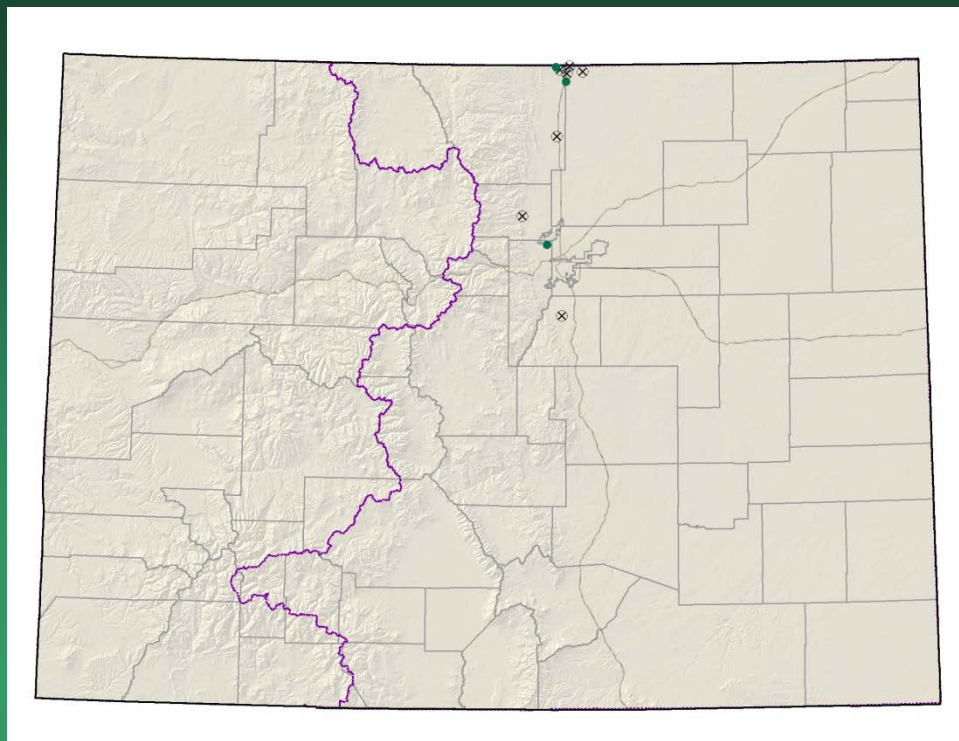
- Federal status: Endangered
- Heritage ranks: G2/S2
- Global distribution: Colorado endemic
- Last observed: 2010
- Occurrences: 22 (7 are historical)
- Individuals: 30,000
- Primary threats: residential and agricultural developments, ORV use, overgrazing, oil and gas exploration
- Land ownership/management: private, BLM
Waker property purchased



Eriogonum pelinophilum



Oenothera coloradensis
ssp. coloradensis
= *Gaura neomexicana* *ssp. coloradensis*
Colorado butterfly plant



- Federal status: Threatened
- Heritage ranks: G3T2/S1
- Global distribution: Wyoming, Nebraska, and Colorado
- Last observed in Colorado: 2010
- Colorado occurrences: 14 (10 are historical)
- Colorado individuals: 11,000
- Primary threats: grazing, hydrological alterations, weeds, Interstate 25
- Land ownership: City of Fort Collins, private, state



Gaura neomexicana ssp. *coloradensis*

Pediocactus knowltonii

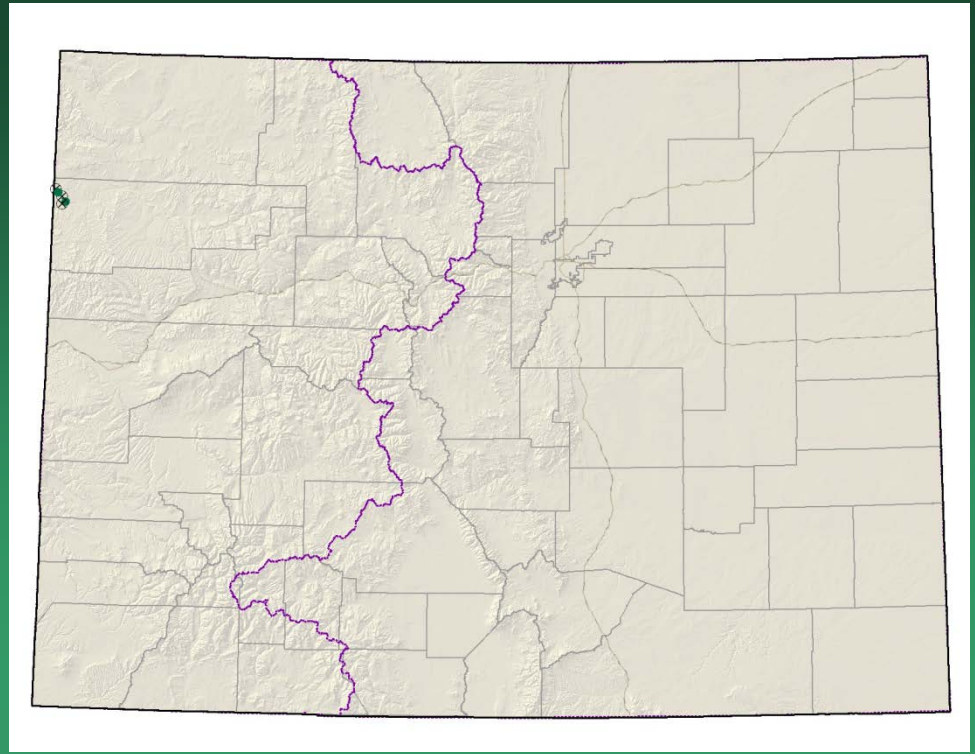
Knowlton's cactus

GIS analysis determined that the species does not actually occur in Colorado.

- Federal status: Endangered
- Heritage ranks: G1/SNA
- Global distribution: New Mexico
- Last observed in Colorado:
- Colorado occurrences: 0
- Individuals: 9,000 in NM
- Primary threats: cactus collection
- Land ownership: private, Ute

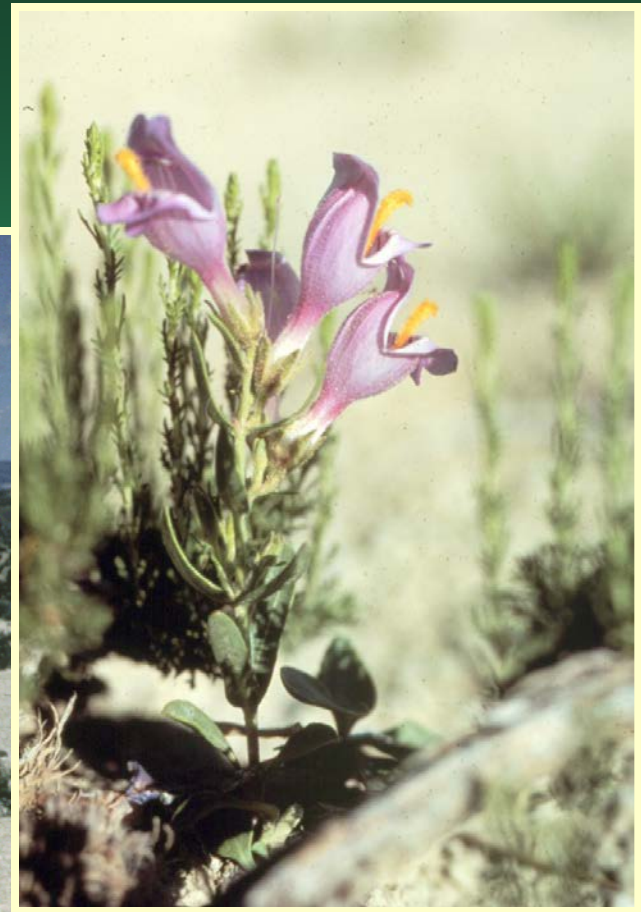
Penstemon grahamii

Graham beardtongue

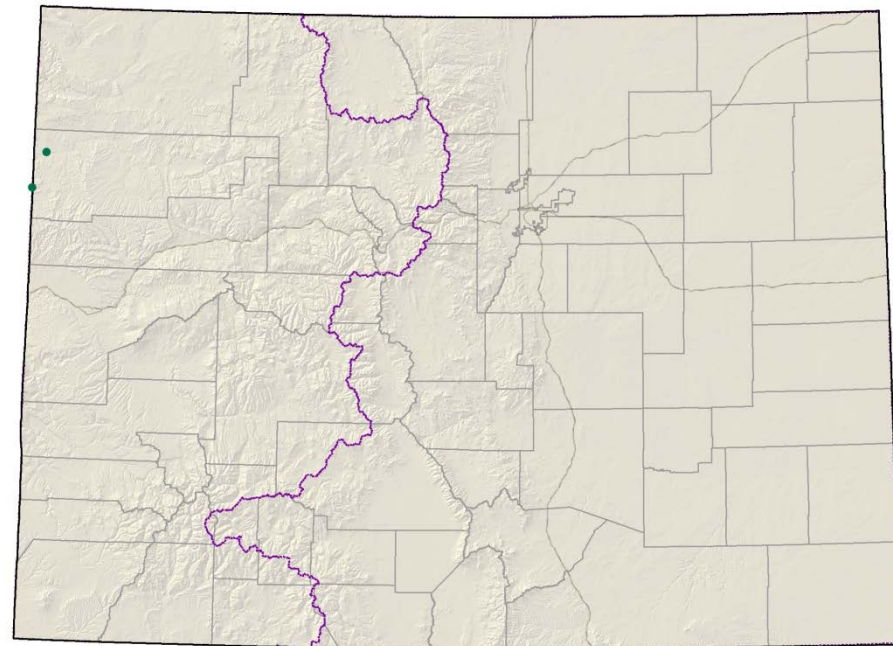


- Federal status: Removed from candidate list
- Heritage ranks: G2/S1
- Global distribution: Utah and Colorado (Rio Blanco County)
- Last observed in Colorado: 2009
- Colorado occurrences: 5 (3 are historical)
- Colorado individuals: 5,000
- Primary threats: oil and gas development, overgrazing
- Land ownership/management: BLM

Penstemon grahamii



Penstemon scariousus var.
albifluvis
White River penstemon



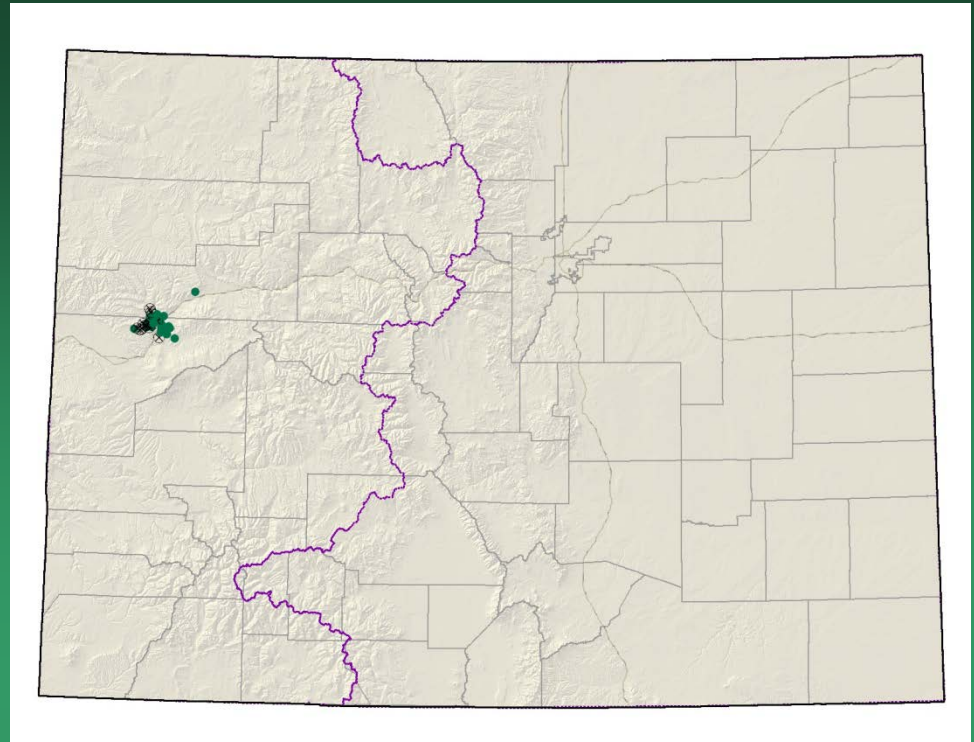
- Federal status: Candidate
- Heritage ranks: G4T1/S1
- Global distribution: Utah and Colorado
- Last observed in Colorado: 1999
- Colorado occurrences: 2
- Colorado individuals: 50-100
- Primary threats: overgrazing, oil and gas development, ORV use
- Land ownership/management: BLM, private



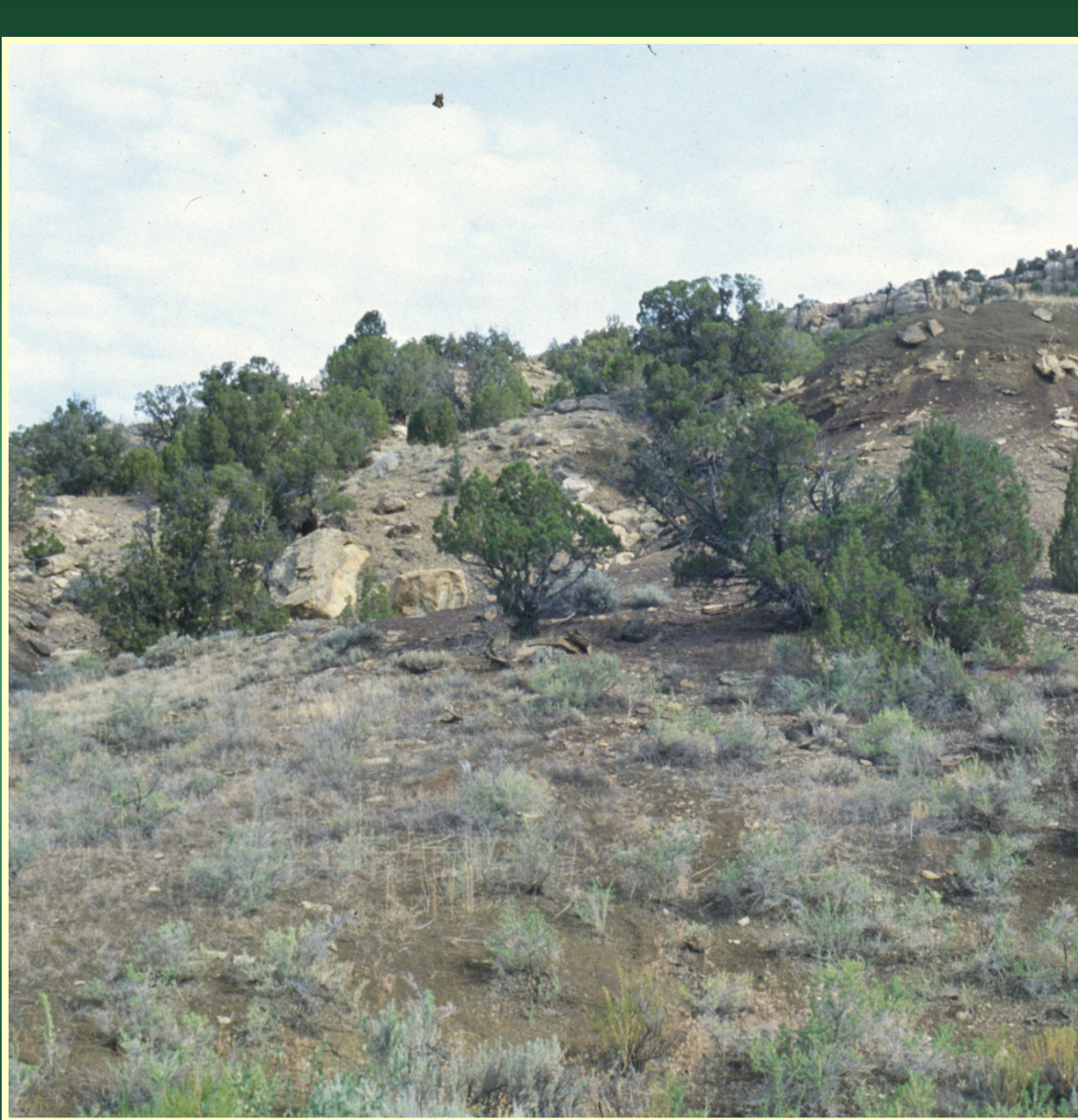
Penstemon scariosus var. *albifluvis*

Phacelia submutica

DeBeque phacelia



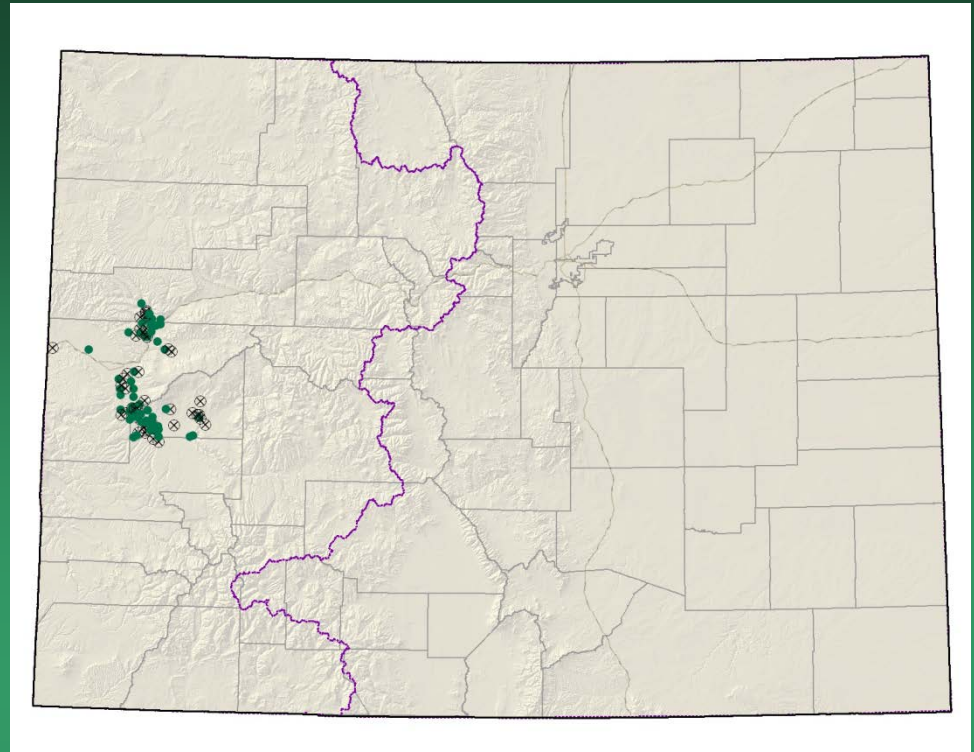
- Federal status: Candidate
- Heritage ranks: G4T2/S2
- Global distribution: Colorado endemic
- Last observed: 2010
- Occurrences: 24 (9 are historical)
- Individuals: 25,000
- Primary threats: oil and gas development, ORV use, overgrazing, oil shale mining
- Land ownership/management: BLM, private, USFS



Phacelia submutica

Sclerocactus glaucus

Uinta Basin hookless cactus



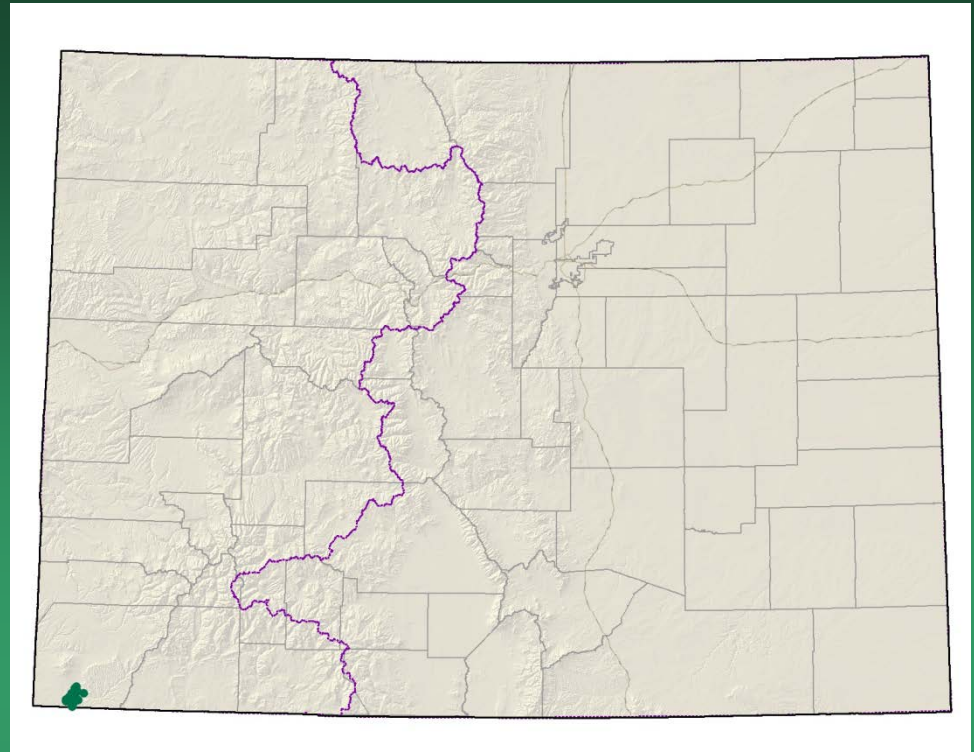
- Federal status: Threatened
- Heritage ranks: G3/S3
- Global distribution: Colorado
- Last observed in Colorado: 2010
- Colorado occurrences: 97 (52 are historical or unrankable)
- Colorado individuals: 7600
- Primary threats: oil and gas development, residential development, cactus collecting
- Land ownership/management: BLM, state, private, USFS



Sclerocactus glaucus

Sclerocactus mesae-verdae

Mesa Verde cactus



- Federal status: Threatened
- Heritage ranks: G2/S2
- Global distribution: New Mexico and Colorado
- Last observed in Colorado: 2005
- Colorado occurrences: 22 – probably a single large occurrence
- Colorado individuals: 2,000-10,000
- Primary threats: cactus collecting, oil and gas development, ORV use
- Land ownership/management: Ute Mountain Ute

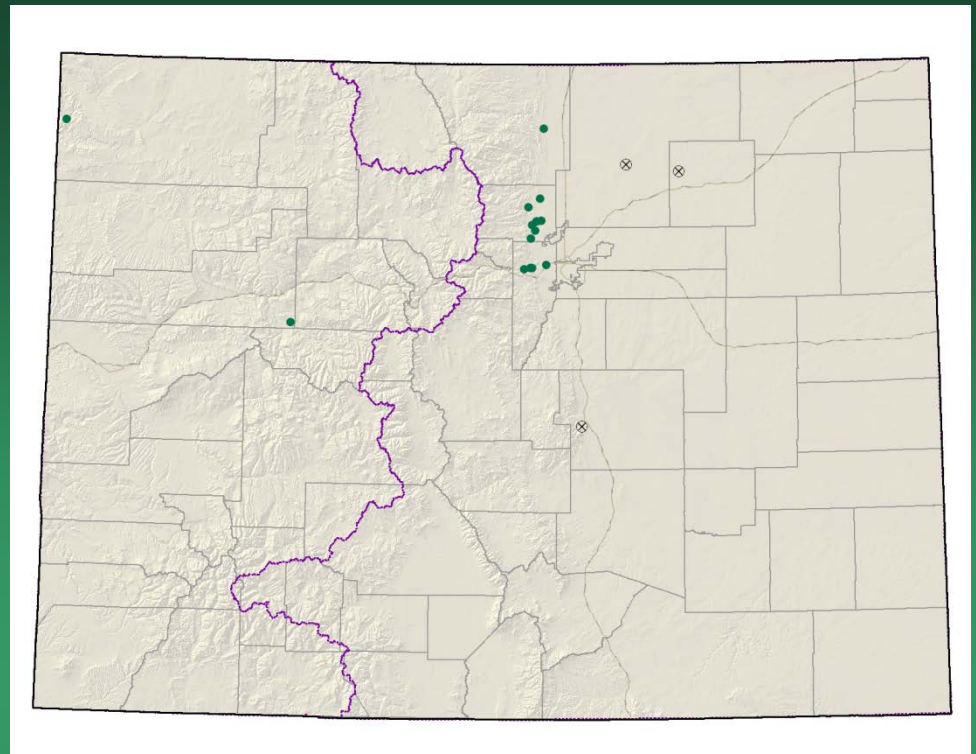


Sclerocactus mesae-verdae

Spiranthes diluvialis

Ute ladies'-tresses

- Federal status: Threatened
- Heritage ranks: G2G3/S2
- Global distribution: Washington, Idaho, Montana, Wyoming, Nevada, Utah, Nebraska, and Colorado
- Last observed in Colorado: 2010
- Colorado occurrences: 16 (2 are historical)
- Colorado individuals: 5,000-10,000
- Primary threats: weeds, residential development, hydrological alterations
- Land ownership/management: NPS, City of Fort Collins, City of Boulder, City of Wheat Ridge, Jefferson County, USFWS, Private, BLM, City of Carbondale



Spiranthes diluvialis



New taxa petitioned for listing under ESA as of Aug 18, 2009
(Federal Register 74:158 pp 41649-41662)

Scientific name	Common name	Distribution	CO counties
<i>Astragalus hamiltonii</i> (<i>Astragalus lonchocarpus</i> var. <i>hamiltonii</i>)	Hamilton milkvetch	CO, UT	Moffat
<i>Astragalus microcymbus</i>	Skiff milkvetch	CO	Gunnison & Saguache
<i>Astragalus schmolliae</i>	Schmoll milkvetch	CO	Montezuma
<i>Corispermum navicula</i>	Boat-shaped bugseed	CO	Jackson
<i>Draba weberi</i>	Weber whitlowgrass	CO	Summit
<i>Eriogonum brandegeei</i>	Brandegee's wild buckwheat	CO	Chaffee & Fremont
<i>Lomatium latilobum</i> * (<i>Aletes latilobus</i>)	Canyonlands lomatium	CO, UT	Mesa
<i>Lygodesmia doloresensis</i> *	Dolores River	CO, UT	Mesa
<i>Penstemon gibbensii</i>	Gibben's beardtongue	CO, UT, WY	Moffat

* Petition does not present sufficient information to indicate listing is warranted.

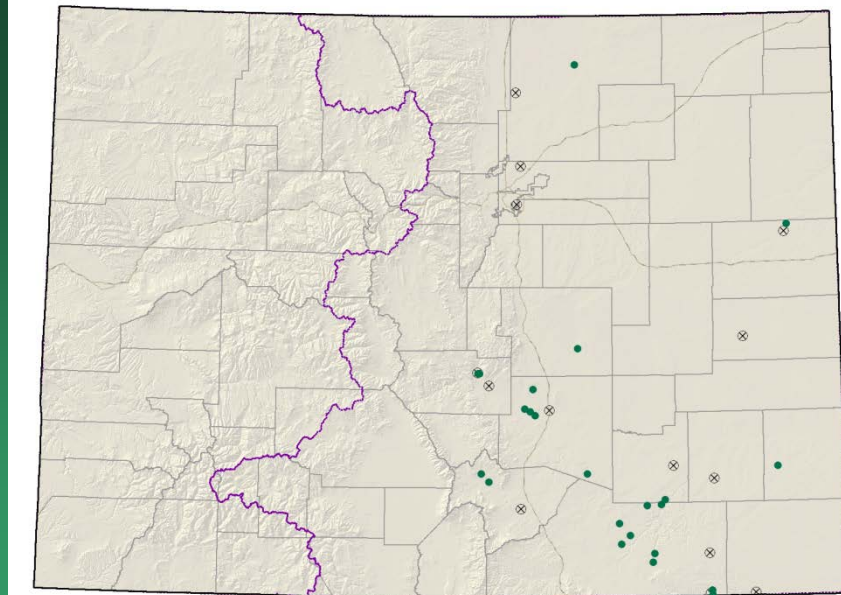
2005
Pagosa Springs
Statewide
G1 species

2006
Colorado Springs
SE Colorado
G2 species

Asclepias uncialis ssp. *uncialis*

Dwarf milkweed

- Federal status: BLM/USFS sensitive
- Heritage ranks: G3G4T2T3/S2
- Global distribution: Arizona, Texas, New Mexico, Wyoming, Oklahoma and Eastern Colorado (Las Animas, Weld, Kit Carson, Huerfano, Pueblo, Otero, Prowers, Fremont, and El Paso counties)
- Last observed in Colorado: 2009
- Colorado occurrences: 37 (11 are historical or extirpated)
- Colorado individuals: ~500
- Primary threats: Population limitation by unknown biological requirements, altered disturbance regime, habitat loss, spread of exotic species, global climate change
- Land ownership/management: BLM, Military, Forest Service, Private, and State lands



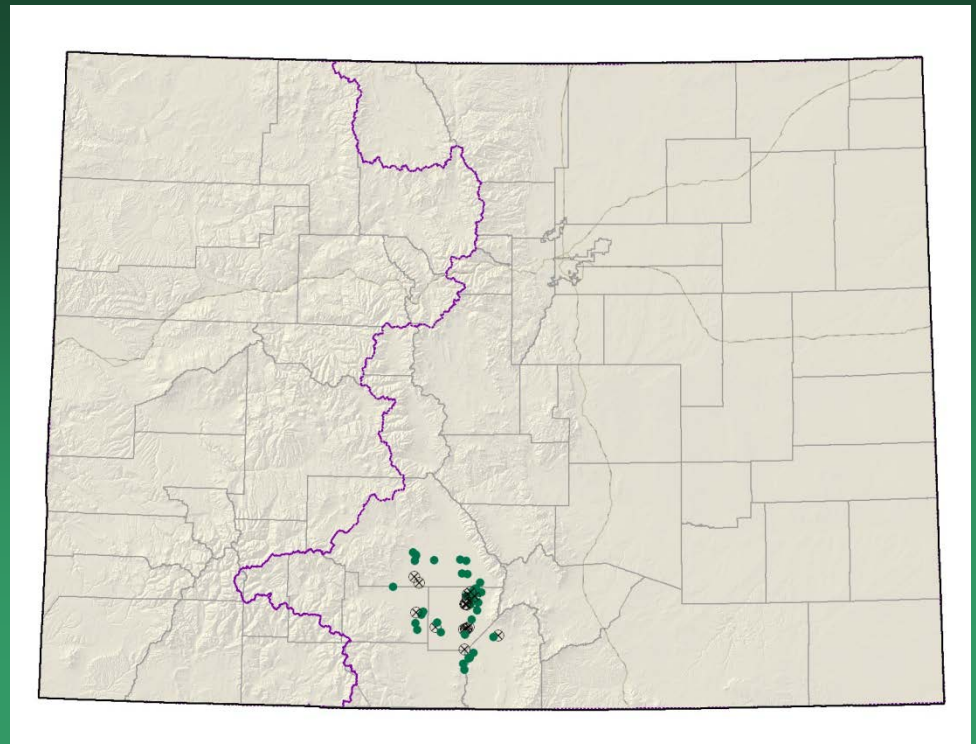


Asclepias uncialis ssp. *uncialis*

Cleome multicaulis

Many-stemmed spider-flower

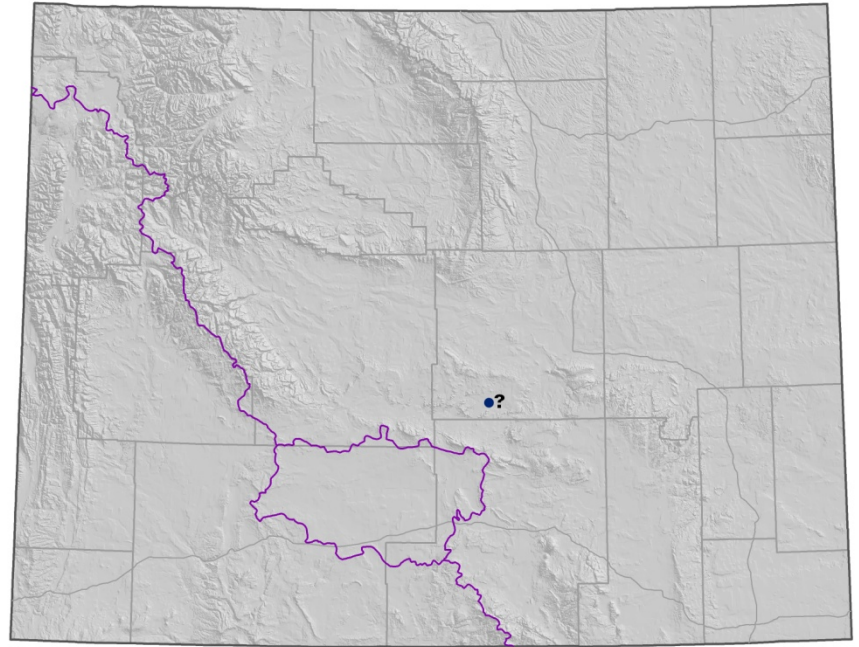
- Federal status: BLM sensitive
- Heritage ranks: G2G3/S2S3
- Global distribution: Mexico, Texas, Arizona, New Mexico, Wyoming and Colorado (Alamosa, Conejos, Costilla, Rio Grande, and Saguache counties)
- Last observed in Colorado: 2009
- Colorado occurrences: 39 (11 are historical)
- Colorado individuals: ~5,132,000
- Primary threats: draining of wetlands
- Land ownership/management: BLM, National Wildlife Refuge, Private, State, and Wilderness



Cleome multicaulis

Many-stemmed spider-flower

- o Federal status: BLM Sensitive
- o Heritage ranks: G2G3/S1
- o Last observed in Wyoming: 2009
- o Wyoming occurrences: 2 (1 failed to find)
- o Primary threats: exotic species, energy developments
- o Land ownership/management: Pathfinder NWR, BLM Casper FO

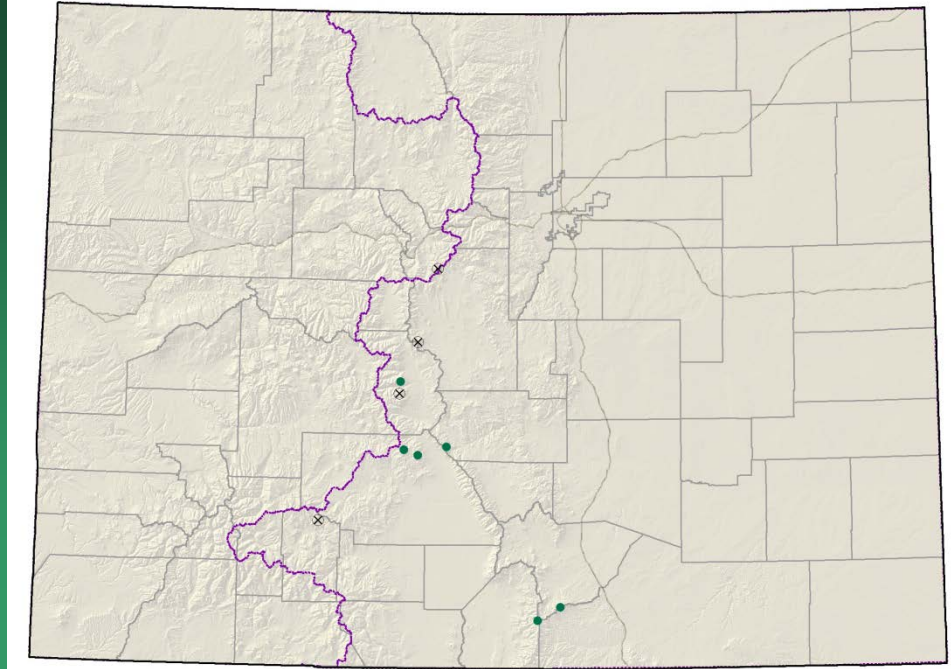


Cleome multicaulis



Delphinium ramosum
var. *alpestre*
= *Delphinium alpestre*
Colorado larkspur

- Federal status: none
- Heritage ranks: G2/S2
- Global distribution: New Mexico and Colorado (Costilla, Chaffee, Fremont, Huerfano, Las Animas, Mineral, Park, Saguache, and Summit counties)
- Last observed in Colorado: 2005
- Colorado occurrences: 10 (4 are historical)
- Colorado individuals: ~75
- Primary threats: Trampling from recreational activities
- Land ownership/management: Forest Service, Private and Wilderness Areas



Delphinium ramosum var. *alpestre*

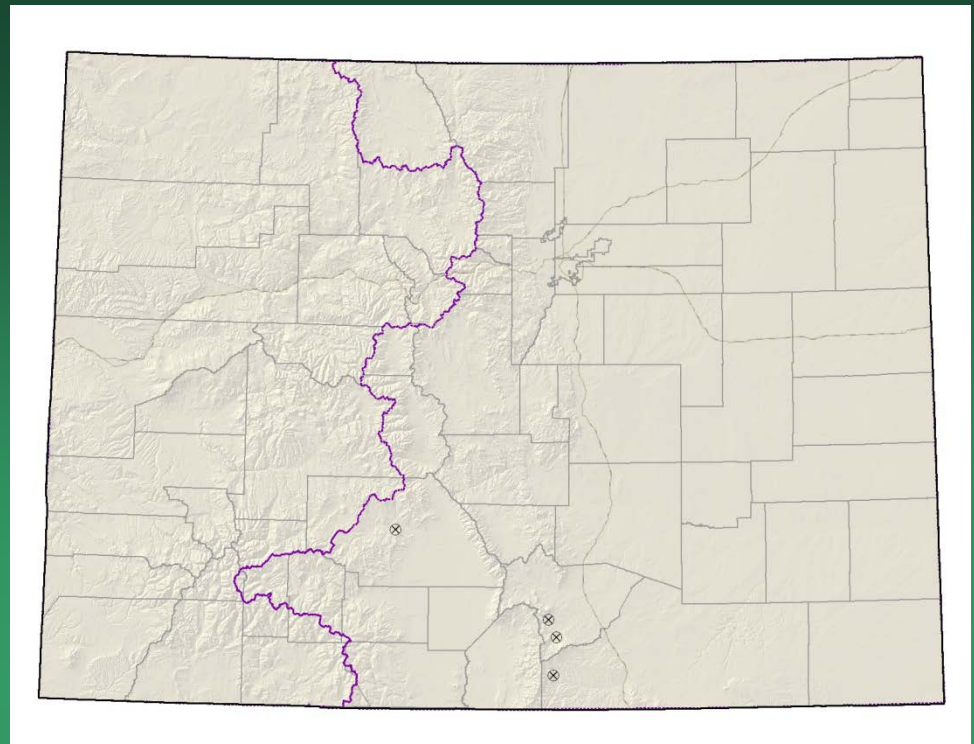


T. Todsen

Delphinium robustum

Wahatoya Creek larkspur

- Federal status: none
- Heritage ranks: G2?/S2?
- Global distribution: New Mexico and Colorado (Huerfano, El Paso, Las Animas, and Saguache counties)
- Last observed in Colorado: 1969
- Colorado occurrences: 4 – all historical
- Colorado individuals: unknown
- Primary threats: Some species of *Delphinium* are poisonous to cattle, so the genus as a whole is sometimes targeted for poisonous weed control
- Land ownership/management: BLM, Forest Service, Private and State



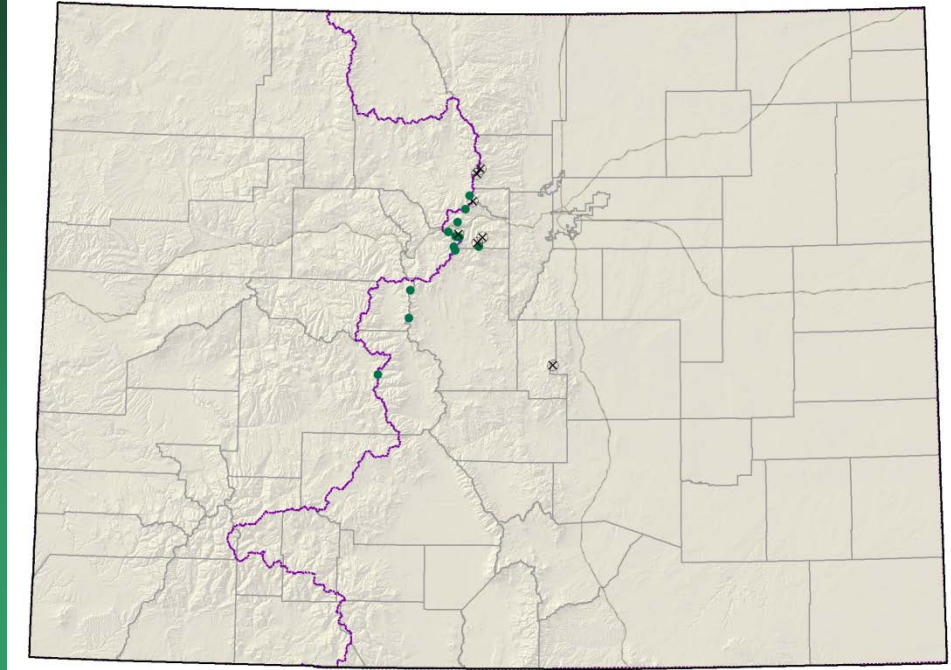
Delphinium robustum



Draba exunguiculata

Clawless draba

- Federal status: USFS sensitive
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Boulder, Chaffee, Clear Creek, El Paso, Gilpin, Grand, Lake, Park and Summit counties)
- Last observed in Colorado: 2006
- Colorado occurrences: 19 (7 are historical)
- Colorado individuals: ~250
- Primary threats: Trampling from hikers and mountain goats, over-collection for gardens, acid rain, air pollution, and global warming
- Land ownership/management: BLM, Forest Service, Private, State and Wilderness Areas



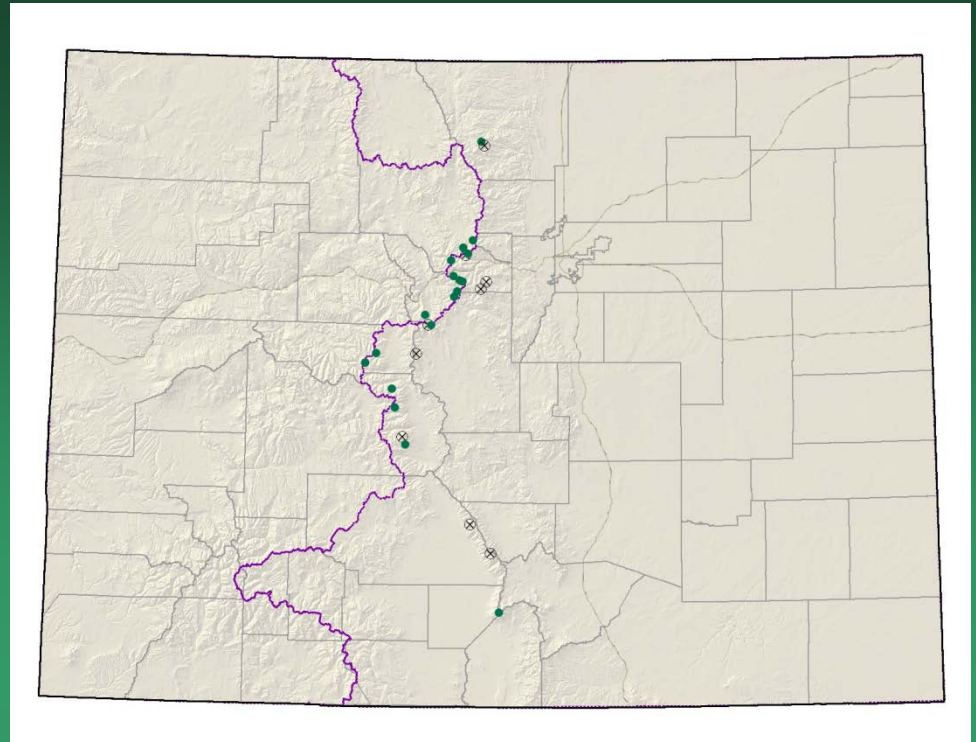


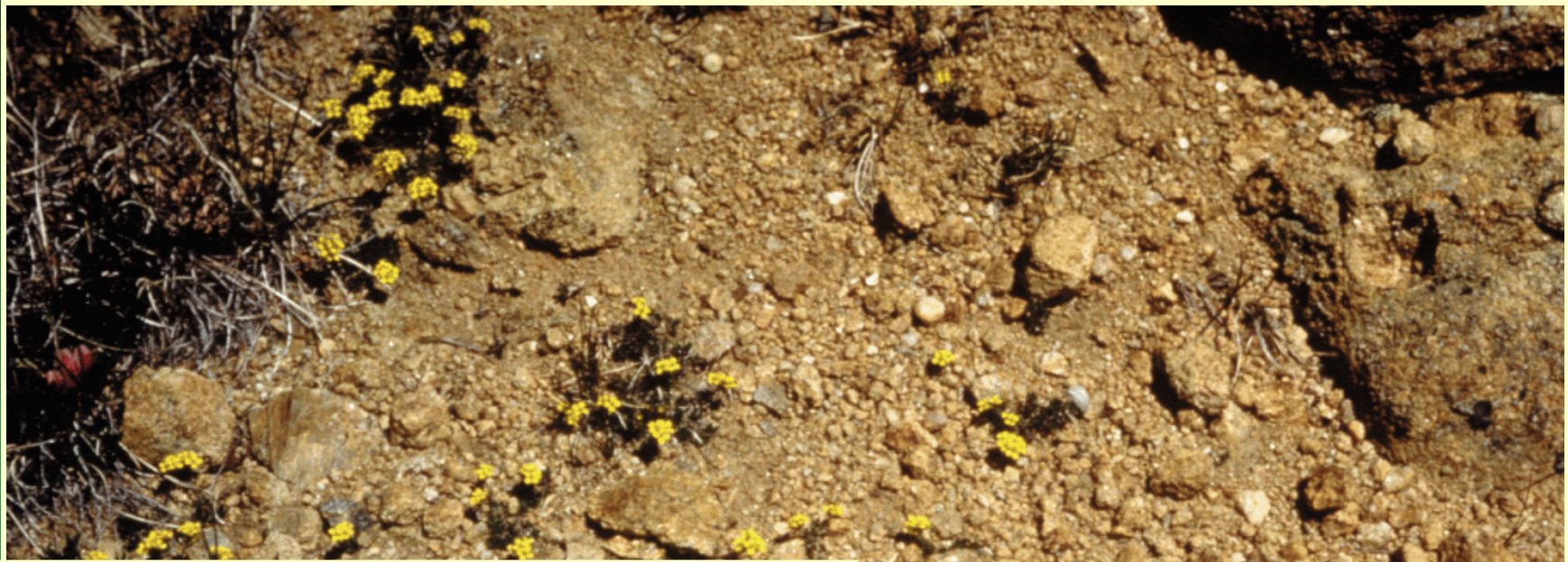
Draba exunguiculata

Draba grayana

Gray's Peak whitlow-grass

- Federal status: USFS sensitive
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Chaffee, Clear Creek, Grand, Huerfano, Larimer, Park, Pitkin, Saguache, and Summit counties)
- Last observed in Colorado: 2006
- Colorado occurrences: 27 (9 are historical)
- Colorado individuals: ~200
- Primary threats: Trampling from hikers and mountain goats, over-collection for gardens and global warming
- Land ownership/management: Forest Service, National Parks and Monuments, Private and Wilderness Areas

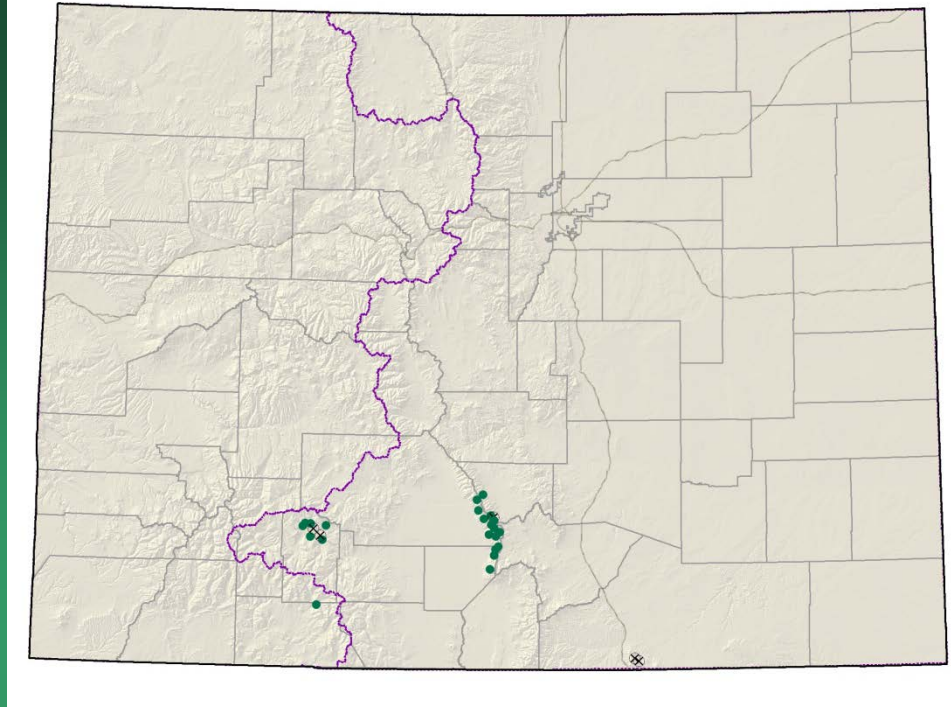




Draba grayana

Draba smithii

Smith's whitlow-grass



- Federal status: USFS sensitive
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Alamosa, Archuleta, Custer, Las Animas, Mineral, and Saguache counties)
- Last observed in Colorado: 2009
- Colorado occurrences: 27 (5 are historical)
- Colorado individuals: ~3200
- Primary threats: Habitat modification from hiking and construction
- Land ownership/management: Forest Service, Private and State

Draba smithii



Grindelia inornata

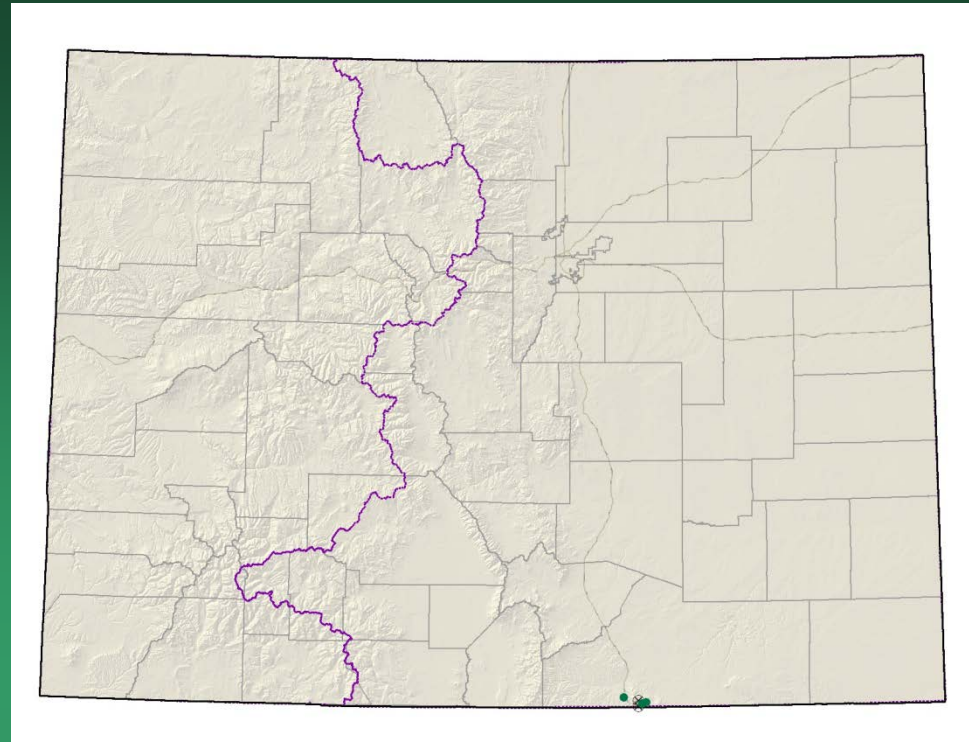
Colorado gumweed

No longer tracked; found to be common

- Federal status: none
- Heritage ranks: G4/S4
- Global distribution: endemic to Colorado (Baca, Denver, Fremont, Las Animas, Otero, Prowers, and Pueblo counties)
- Last observed in Colorado: 6/15/2003
- Colorado occurrences: 8, but found to be much more common
- Colorado individuals: unknown
- Primary threats: Residential and commercial development, and road maintenance activities
- Land ownership/management: BLM, Military, Forest Service, Private and State

Herrickia horrida
= *Eurybia horrida*

Canadian River spiny aster or
Horrid herrickia



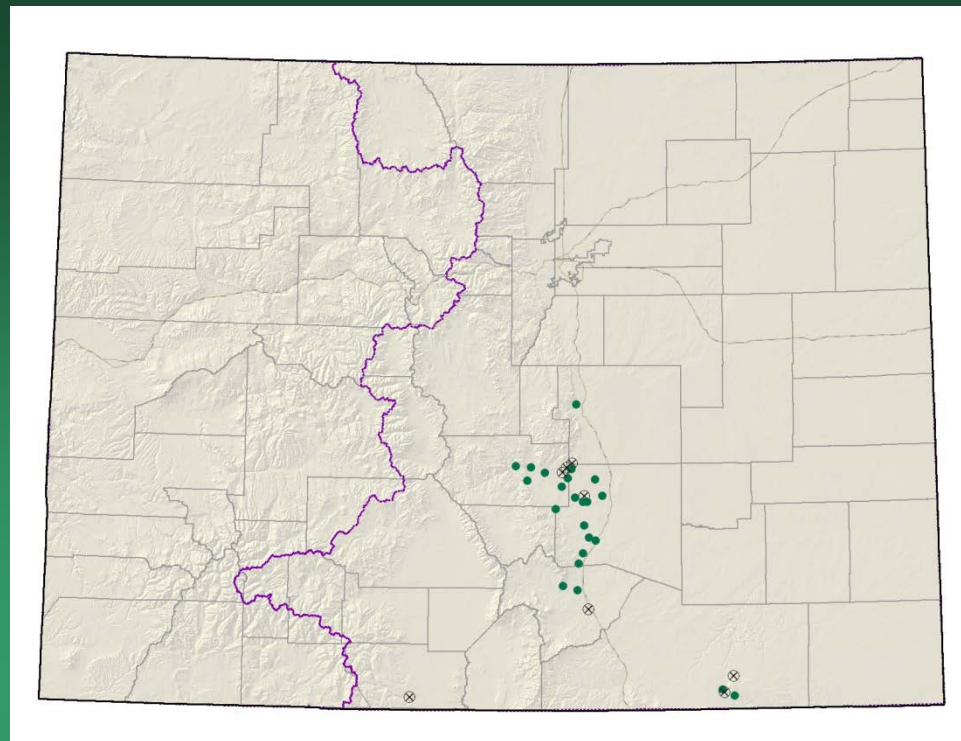
- Federal status: none
- Heritage ranks: G2?/S1
- Global distribution: New Mexico and Colorado (Las Animas County)
- Last observed in Colorado: 2010
- Colorado occurrences: 3
- Colorado individuals: 500+
- Primary threats: unknown
- Land ownership/management: Private, State



Herrickia horrida

Lesquerella calcicola

Rocky Mountain bladderpod



- Federal status: none
- Heritage ranks: **G3/S3**
- Global distribution: New Mexico and Colorado (Conejos, El Paso, Fremont, Huerfano, Las Animas, and Pueblo counties)
- Last observed in Colorado: **2009**
- Colorado occurrences: **36** (8 are historical)
- Colorado individuals: **24,000**
- Primary threats: This species occurs in areas that are experiencing rapid development pressures
- Land ownership/management: BLM, Military, Private, and State

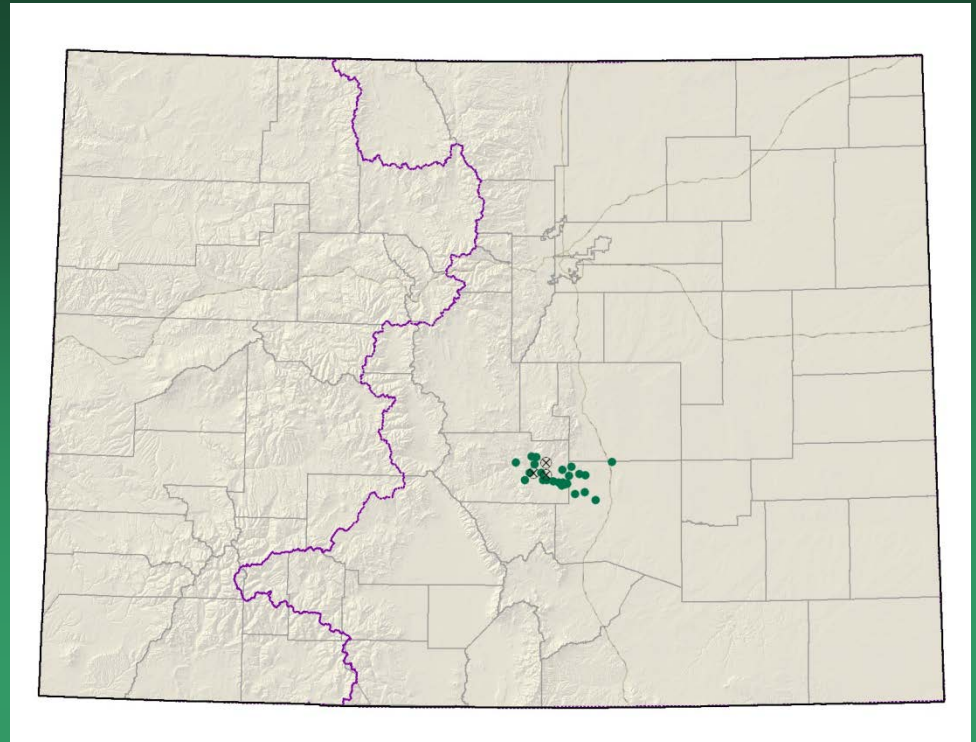


Lesquerella calcicola

Nuttallia chrysantha
= *Mentzelia chrysantha*
Golden blazing star

Conservation Action Plan

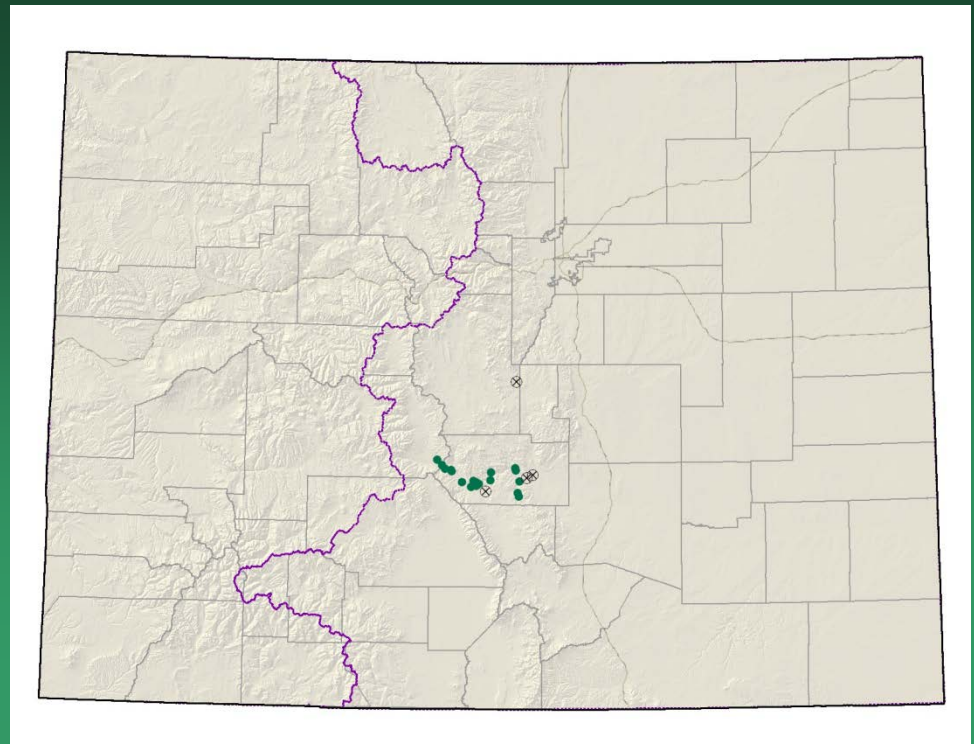
- Federal status: BLM sensitive
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Fremont, El Paso, and Pueblo counties)
- Last observed in Colorado: 2007
- Colorado occurrences: 27 (3 are historical)
- Colorado individuals: ~4100
- Primary threats: Grazing, quarry activities, and subdivision and road construction
- Land ownership/management: BLM, Military, Private and State





Nuttallia chrysantha

Nuttallia densa
= *Mentzelia densa*
Arkansas Canyon
stickleaf



- Federal status: BLM sensitive
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Fremont County)
- Last observed in Colorado: 2009
- Colorado occurrences: 25 (4 are historical)
- Colorado individuals: ~13,500
- Primary threats: Recreational development and road construction
- Land ownership/management: BLM, Forest Service, Private and State

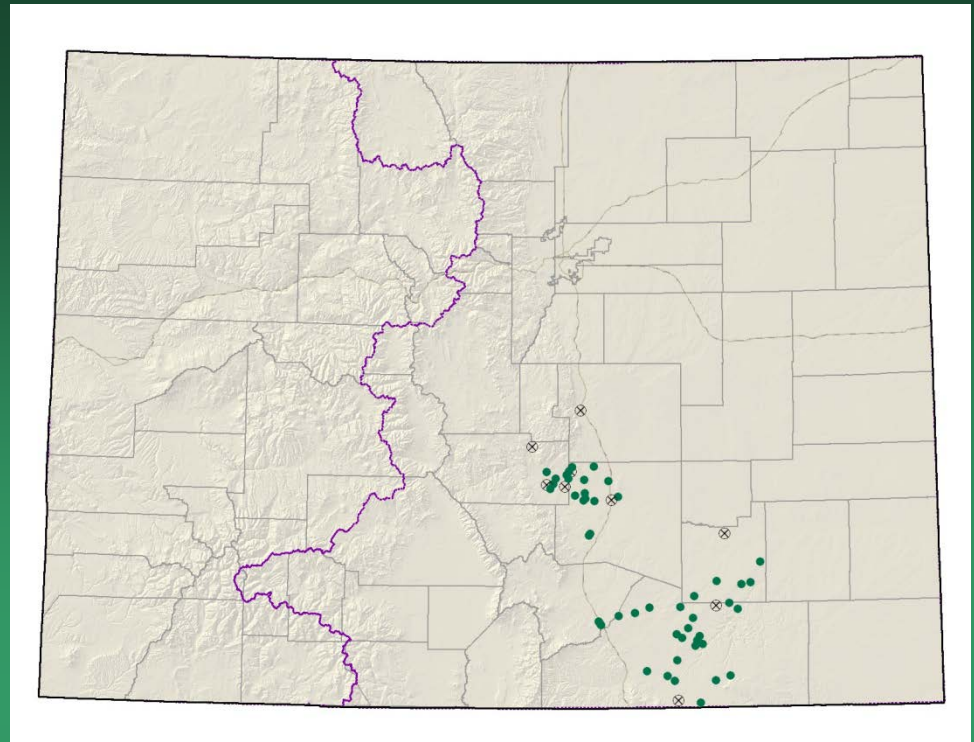


Nuttallia densa

Oenothera harringtonii

Arkansas Valley evening primrose

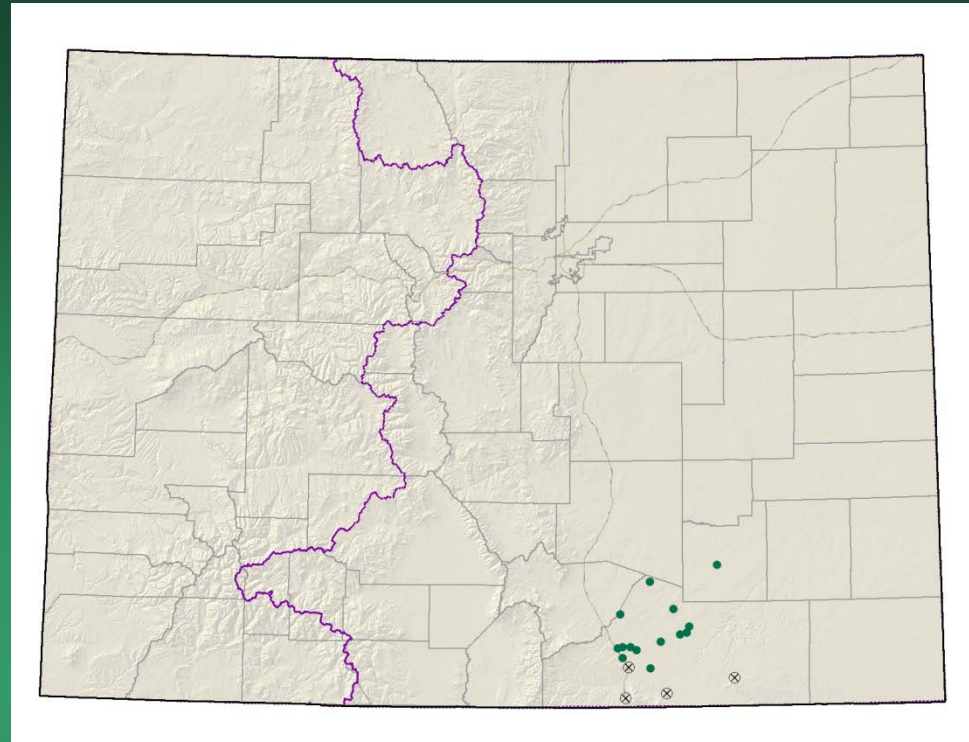
- Federal status: USFS sensitive
- Heritage ranks: **G3/S3**
- Global distribution: endemic to Colorado (El Paso, Fremont, Huerfano, Las Animas, Otero, and Pueblo counties)
- Last observed in Colorado: **2010**
- Colorado occurrences: **62** (9 are historical)
- Colorado individuals: 12,000+
- Primary threats: Habitat loss due to urbanization, road development projects, and resource extraction activities, especially quarrying and surface mining
- Land ownership/management: BLM, Military, Forest Service, Private and State



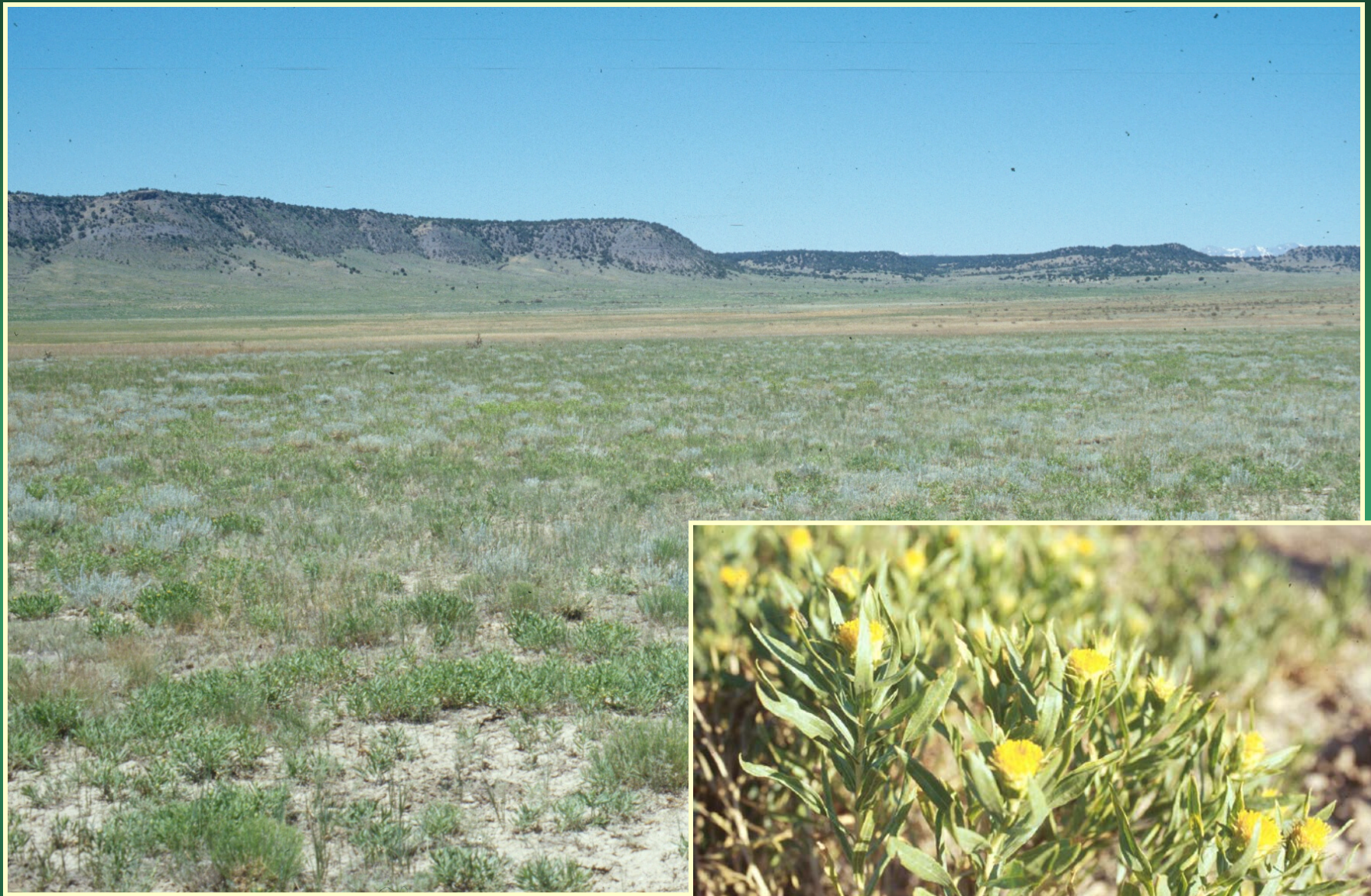


Oenothera harringtonii

Oenopsis foliosa var.
monocephala
Rayless goldenweed



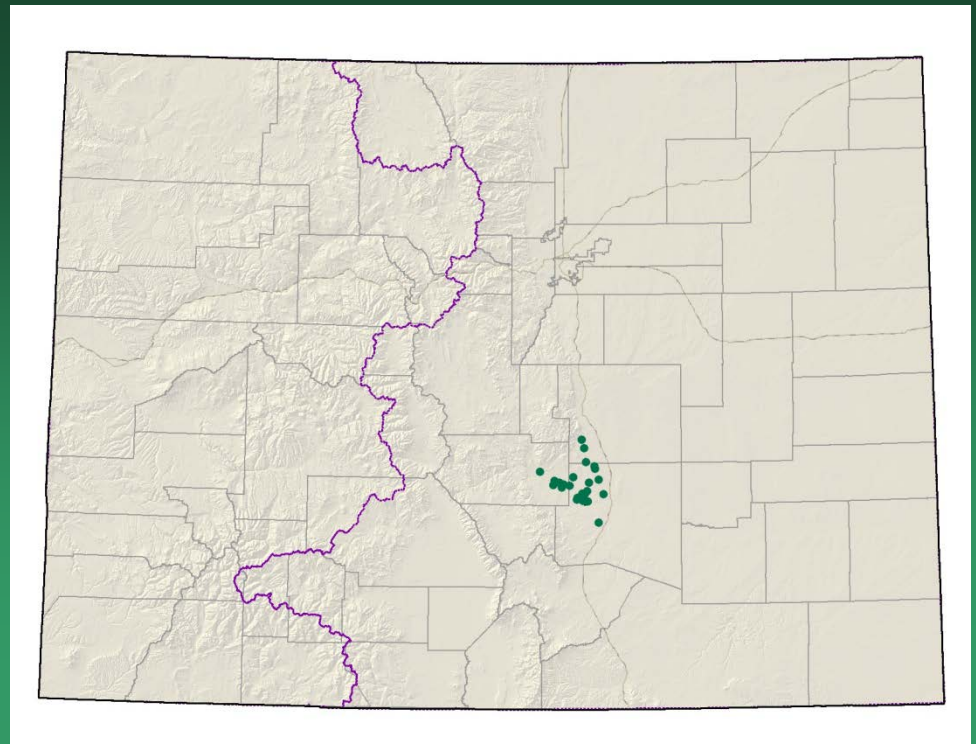
- Federal status: none
- Heritage ranks: G3G4T2/S2
- Global distribution: endemic to Colorado (Las Animas, Pueblo, and Fremont counties)
- Last observed in Colorado: 2009
- Colorado occurrences: 13 (4 are historical)
- Colorado individuals: 400,000+
- Primary threats: Maintenance on current roads or further developments may disturb or destroy individuals
- Land ownership/management: BLM, Military, Private and State



Oonopsis foliosa var. *monocephala*

Oenopsis “*puebloensis*” = *Oenopsis* sp. 1 Pueblo goldenweed

Conservation Action Plan



- Federal status: none
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (El Paso, Fremont and Pueblo counties)
- Last observed in Colorado: 2009
- Colorado occurrences: 28
- Colorado individuals: ~11,000 or more
- Primary threats: Shale extraction by cement plants
- Land ownership/management: Private, State and Military

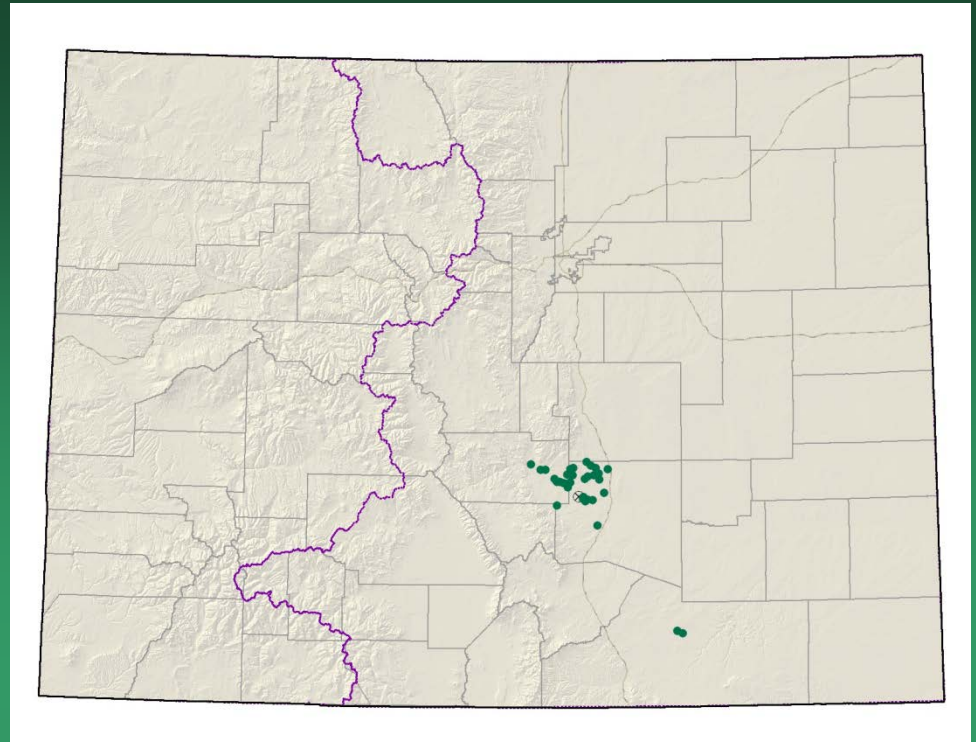


Oenopsis "puebloensis"

Oxybaphus rotundifolius
= *Mirabilis rotundifolia*
Round-leaf four-o'clock

Conservation Action Plan

- Federal status: none
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Fremont, Las Animas, El Paso and Pueblo counties)
- Last observed in Colorado: 2009
- Colorado occurrences: 37 (1 is historical)
- Colorado individuals: ~6200
- Primary threats: Highly threatened by residential and recreational development
- Land ownership/management: BLM, Military, Private and State



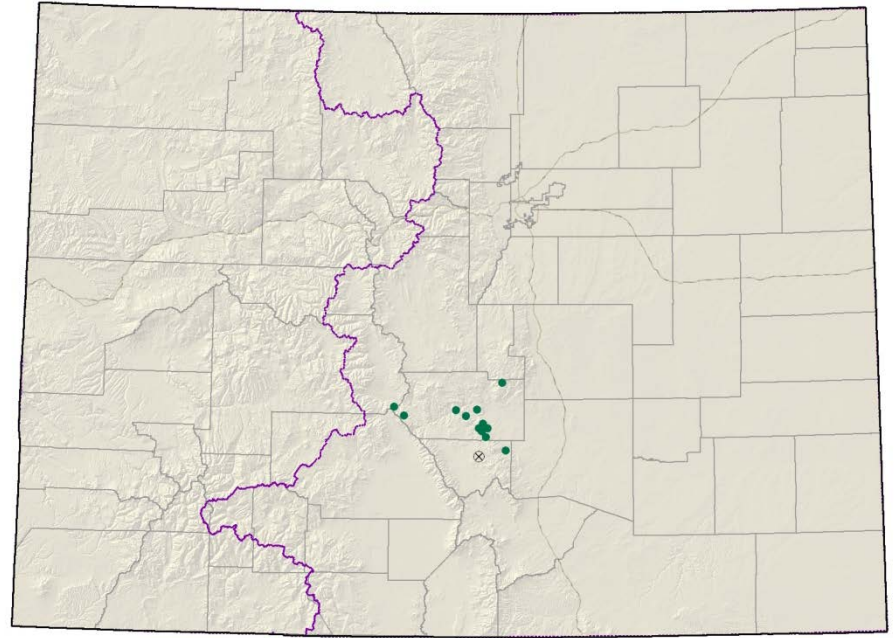


Oxybaphus rotundifolius

Penstemon degeneri

Degener beardtongue

- Federal status: USFS & BLM sensitive
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Chaffee, Custer and Fremont counties)
- Last observed in Colorado: 2009
- Colorado occurrences: 16 (2 historical)
- Colorado individuals: ~1500
- Primary threats: Motorized and non-motorized recreation, non-native plant invasion, grazing and trampling, extensive herbivory, succession, and global environmental changes
- Land ownership/management: BLM, Forest Service, Private and State

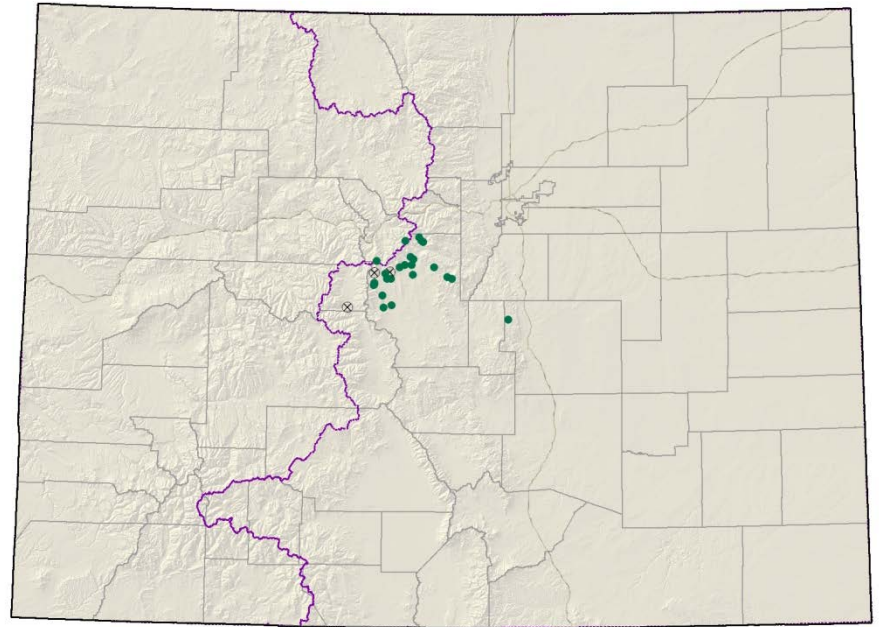




Penstemon degeneri

Ptilagrostis porteri

Porter feathergrass



- Federal status: USFS & BLM sensitive
- Heritage ranks: G2/S2
- Global distribution: Colorado (El Paso, Lake, Park and Summit counties);
northern NM
- Last observed in Colorado: 2009
- Colorado occurrences: 25 (3 are historical)
- Colorado individuals: ~408,000
- Primary threats: Alterations to the water table resulting from increased diversion and pumping for the metropolitan front range
- Land ownership/management: BLM, Forest Service, and Private

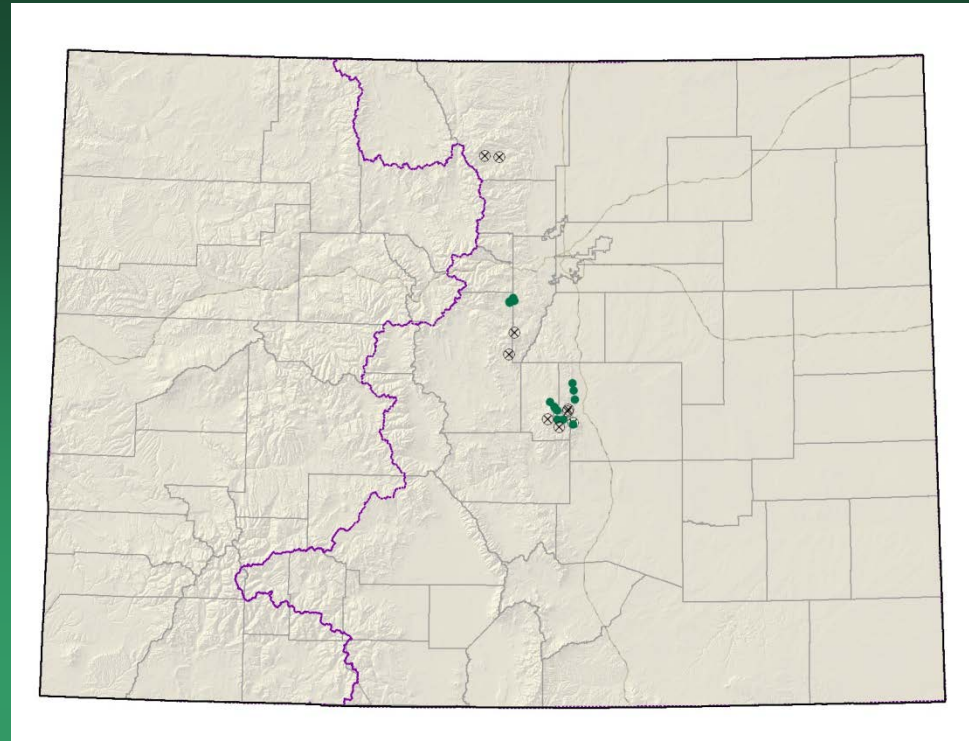


Ptilagrostis porteri

Telesonix jamesii

James' telesonix

- Federal status: none
- Heritage ranks: G2/S2
- Global distribution: New Mexico and Colorado (El Paso, Jefferson, Larimer, Park, and Teller counties)
- Last observed in Colorado: 2009
- Colorado occurrences: 22 (9 are historical)
- Colorado individuals: ~15,200
- Primary threats: Motorized and non-motorized recreation, trail or road construction and maintenance, invasive species introduction, and horticultural collection
- Land ownership/management: BLM, Military, Forest Service, Private and State





Telesonix jamesii