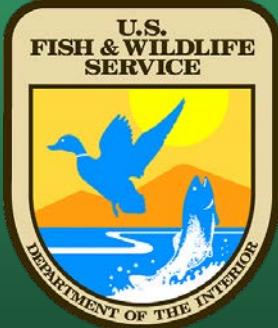
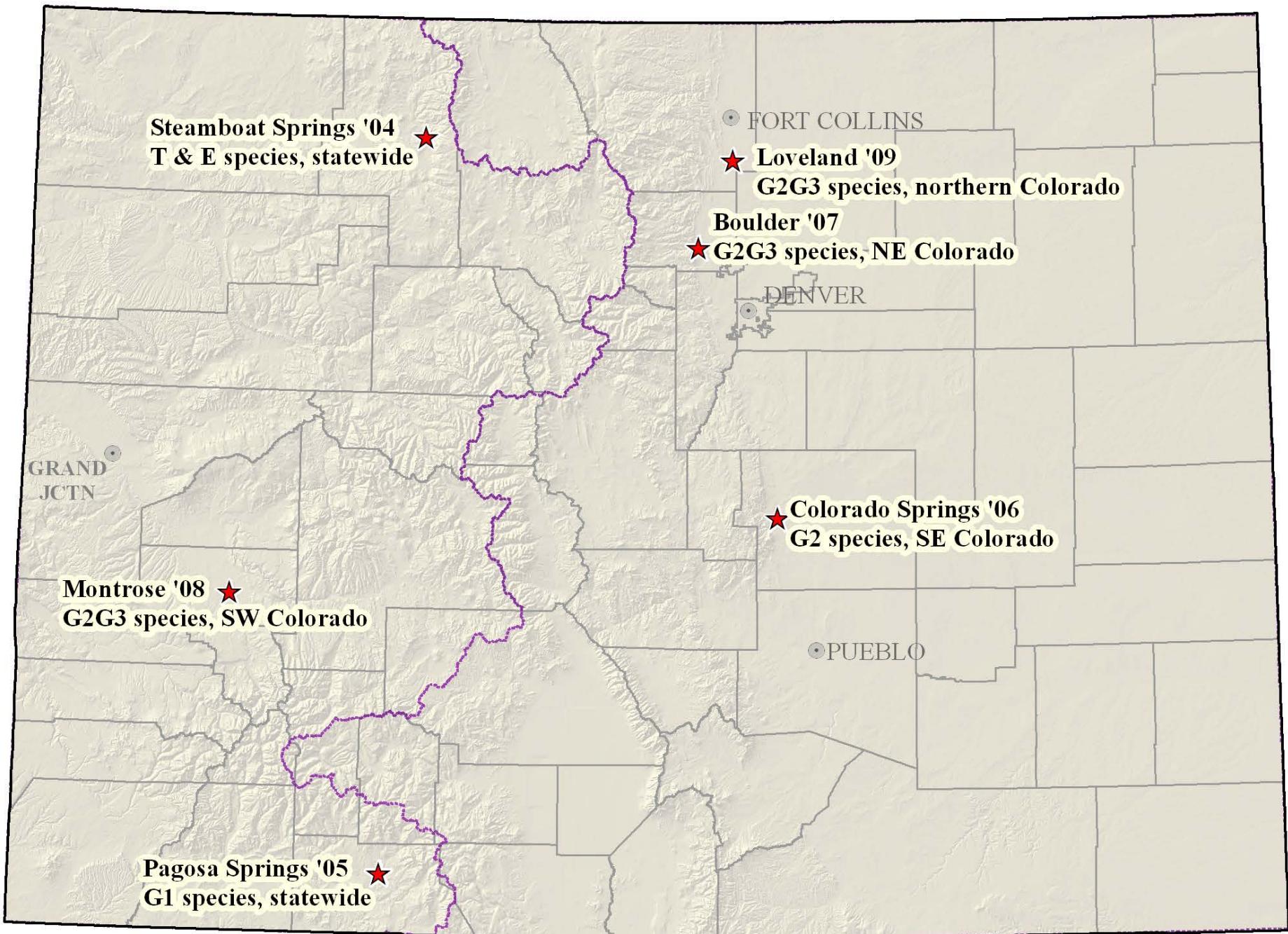


Review of Previous Meetings

1st Through 5th Annual
Colorado Rare Plant Symposia
2004-2008





Species from previous years

2004 - T & E Species

Statewide

Astragalus humillimus

Astragalus osterhoutii

Astragalus tortipes

Botrychium lineare

Eriogonum pelinophilum

Eutrema edwardsii ssp *penlandii*

Ipomopsis polyantha

Lesquerella congesta

Oenothera coloradensis ssp *coloradensis*

Pediocactus knowltonii

Penstemon debilis

Penstemon grahamii

Penstemon penlandii

Penstemon scariosus var *albifluvis*

Phacelia formosula

Phacelia submutica

Physaria obcordata

Sclerocactus glaucus

Sclerocactus mesae-verdae

Spiranthes diluvialis

2005 - G1 Species

Statewide

Aletes latilobus

Aliciella sedifolia

Astragalus lonchocarpus var. *hamiltonii*

Astragalus microcymbus

Astragalus schmolliae

Cirsium scapanolepis

Corispermum navicula

Cryptantha gypsophila

Draba weberi

Erigeron wilkenii

Eriogonum brandegeei

Hackelia gracilenta

Lygodesmia doloresensis

Mimulus gemmiparus

Oreoxis humilis

Penstemon gibbensii

Physaria pulvinata

2006 - G2 Species

SE Colo

Asclepias uncialis ssp. *uncialis*

Cleome multicaulis

Delphinium ramosum var. *alpestre*

Delphinium robustum

Draba exunguiculata

Draba grayana

Draba smithii

Grindelia inornata

Herrickia horrida

Lesquerella calcicola

Nuttallia chrysantha

Nuttallia densa

Oenothera harringtonii

Oonopsis foliosa var. *monocephala*

Oonopsis puebloensis

Oxybaphus rotundifolius

Penstemon degeneri

Ptilagrostis porteri

Telesonix jamesii

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

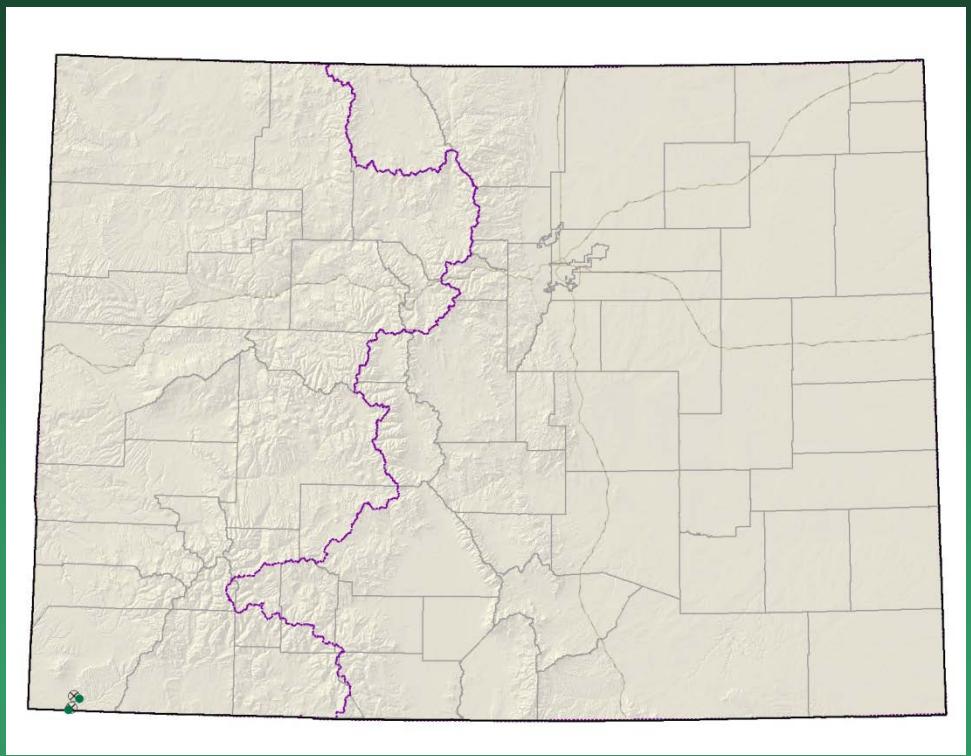
2008 - G2G3 Species
SW Colo

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

2004
Steamboat Springs
Statewide
T & E Species

Astragalus humillimus Mancos milkvetch

- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: New Mexico and Colorado
- Last observed in Colorado: CNAP 1998
- Colorado occurrences: 4 (3 are historical)
- Colorado individuals: 25,000
- Primary threats: mineral, oil, and gas development, seismic exploration
- Land ownership/management: Ute Mountain Ute

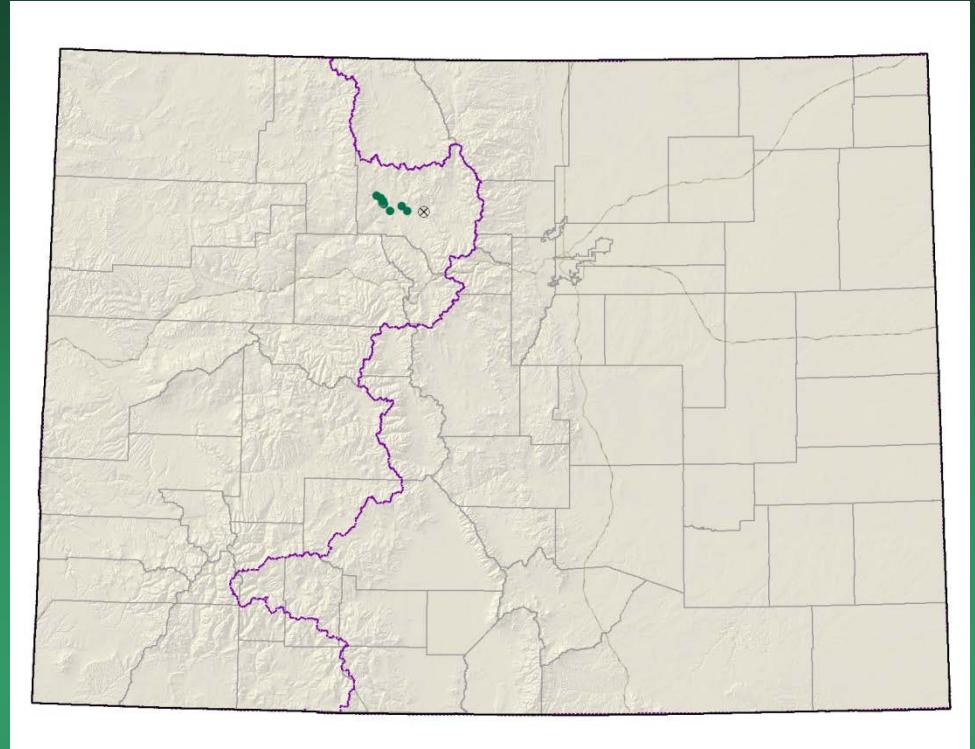


Astragalus humillimus



Astragalus osterhoutii

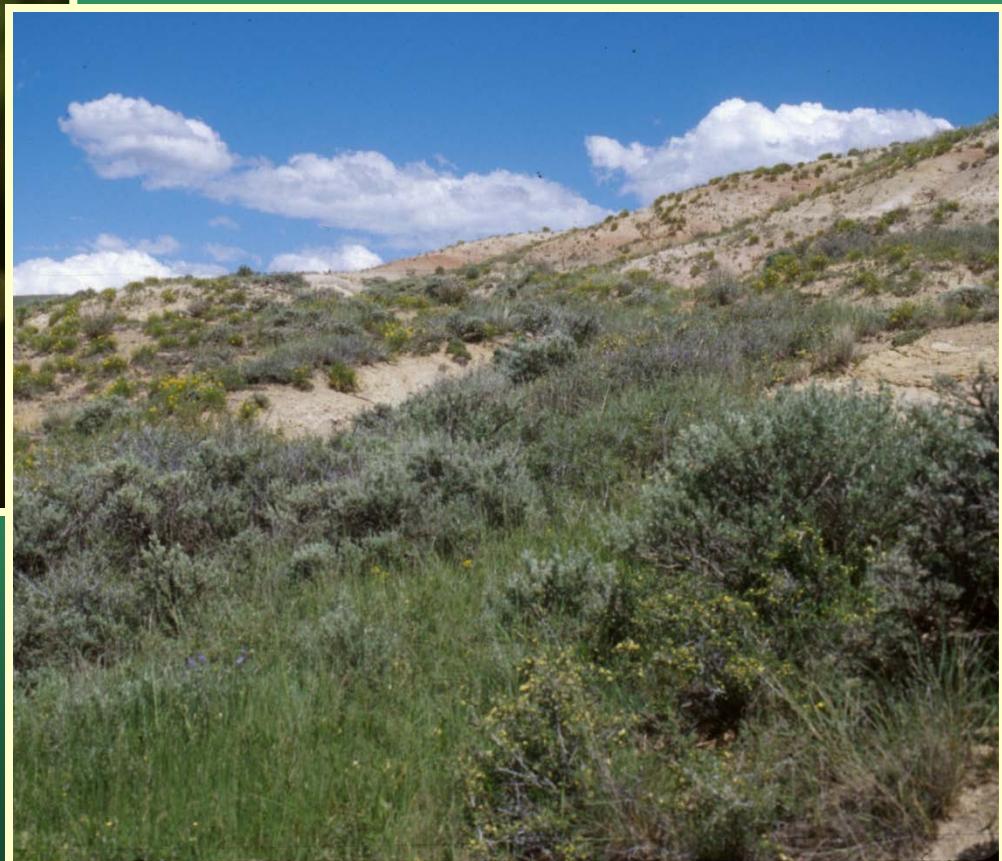
Osterhout milkvetch



- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2009
- Occurrences: 6 (1 is historical)
- Individuals: 25,000-50,000
- Primary threats: recreation, mining, oil and gas development
- Land ownership/management: BLM, private, state

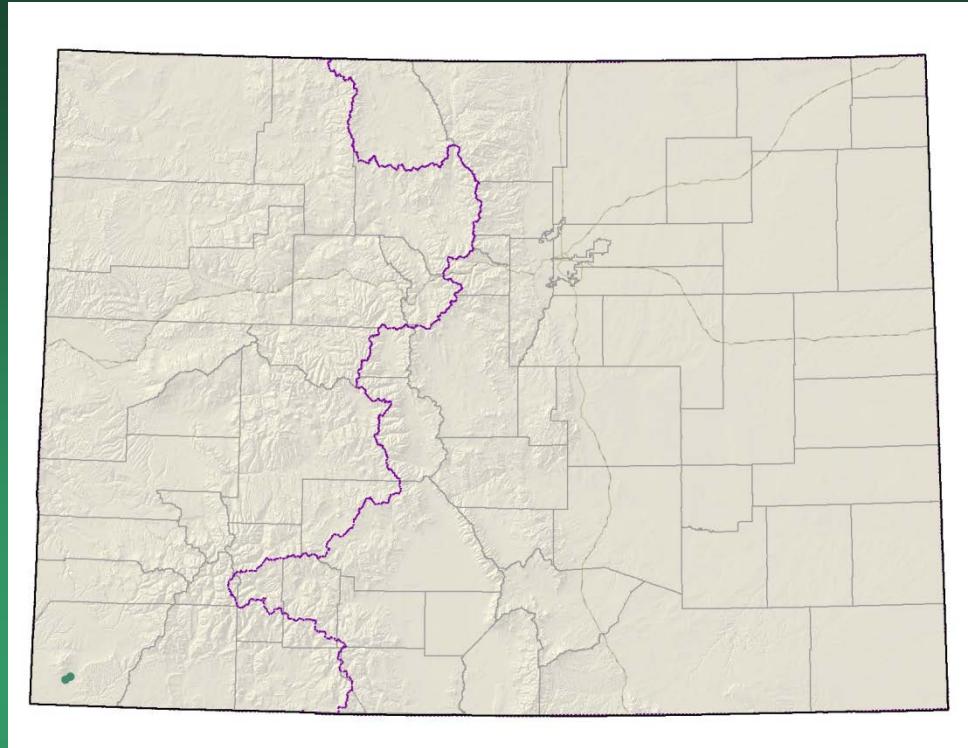


Astragalus osterhoutii



Astragalus tortipes Sleeping Ute milkvetch

- Federal status: Candidate
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2000
- Occurrences: 2
- Individuals: 2,000-3,000
- Primary threats: McPhee Reservoir canals, agricultural development
- Land ownership/management: Ute Mountain Ute

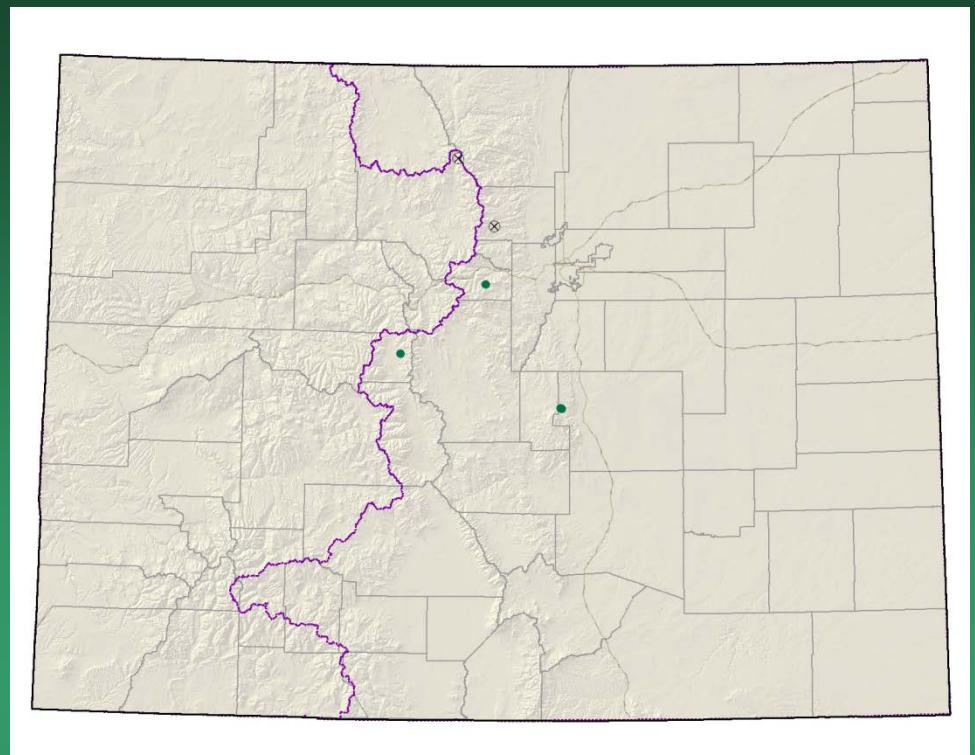


Astragalus tortipes



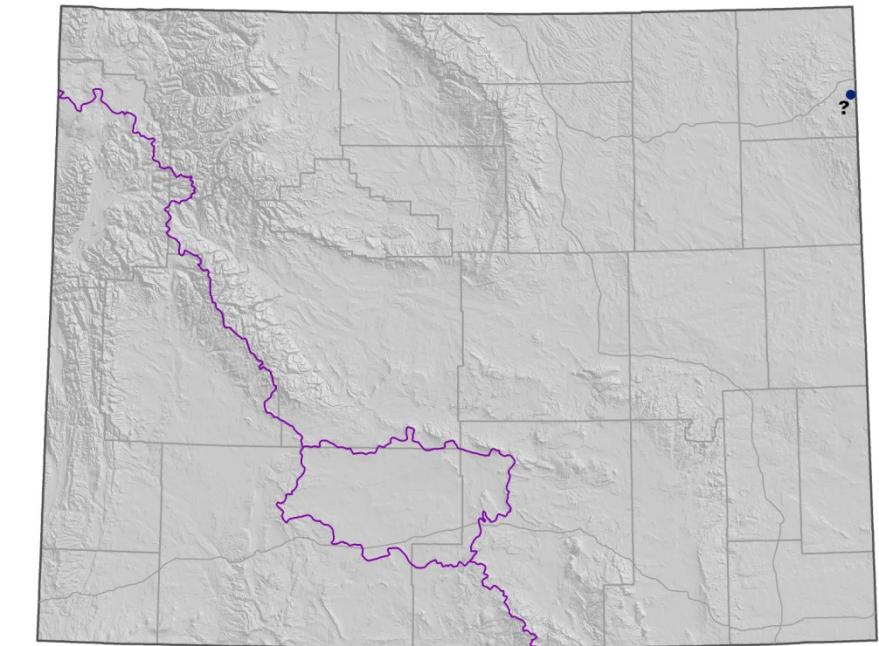
Botrychium lineare? Slender moonwort

- 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?

Slender moonwort



- Federal status: Removed; USFS R2 Sensitive
- Heritage ranks: G2?/S1
- Last observed in Wyoming: 2007
- Wyoming occurrences: 2 (1 possibly extirpated)
- Primary threats: prescribed burn practices, logging, grazing
- Land ownership/management: Black Hills NF

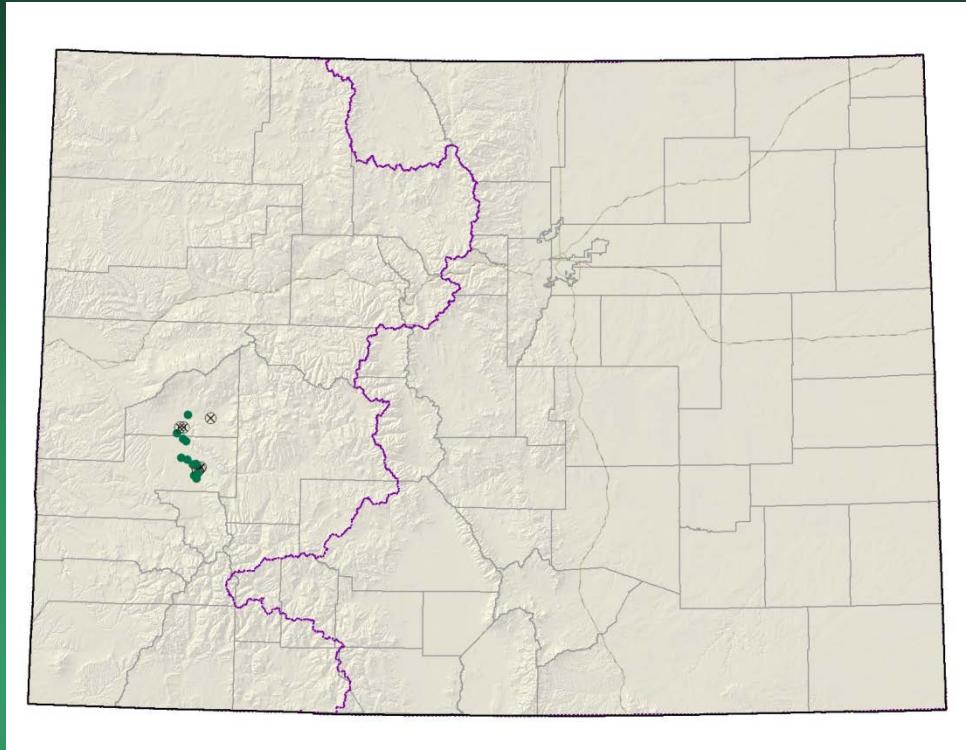
Botrychium lineare



Eriogonum pelinophilum

Clay-loving wild buckwheat

- Federal status: Endangered
- Heritage ranks: G2/S2
- Global distribution: Colorado endemic
- Last observed: 2007
- occurrences: 20 (4 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

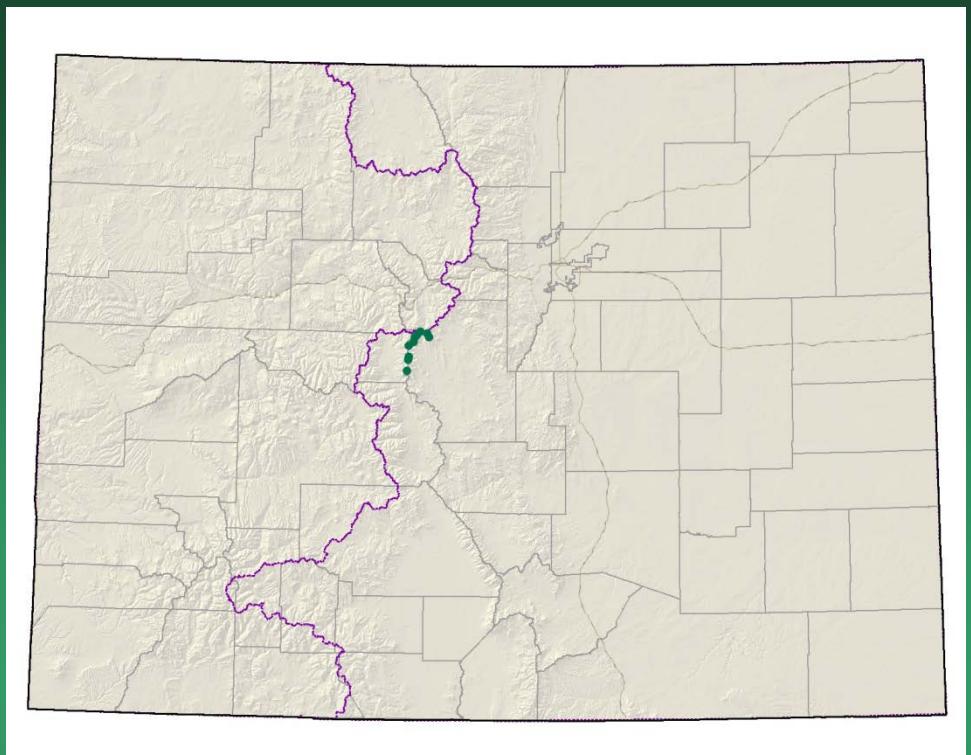


Eriogonum pelinophilum



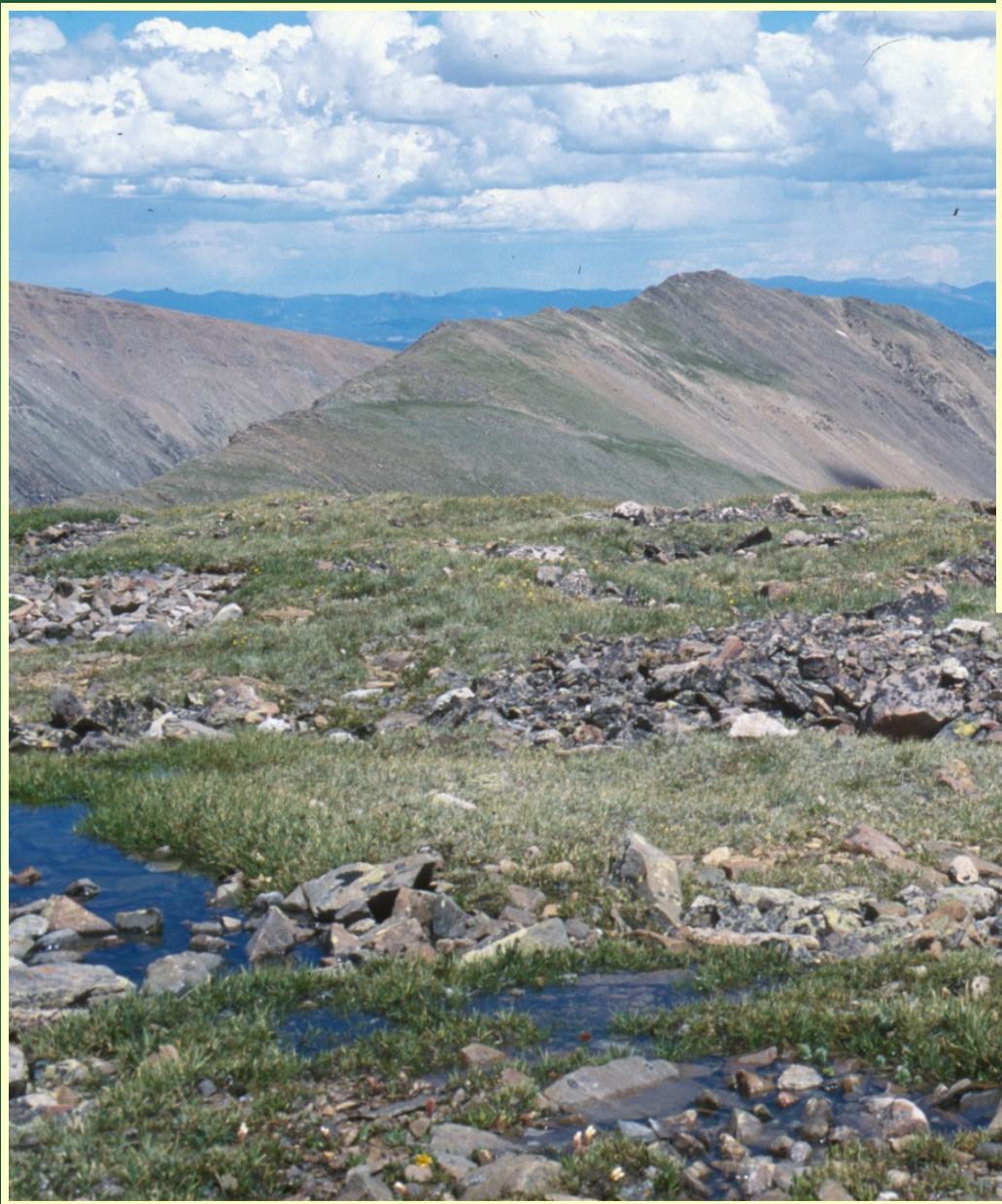
Eutrema penlandii

Penland alpine fen mustard



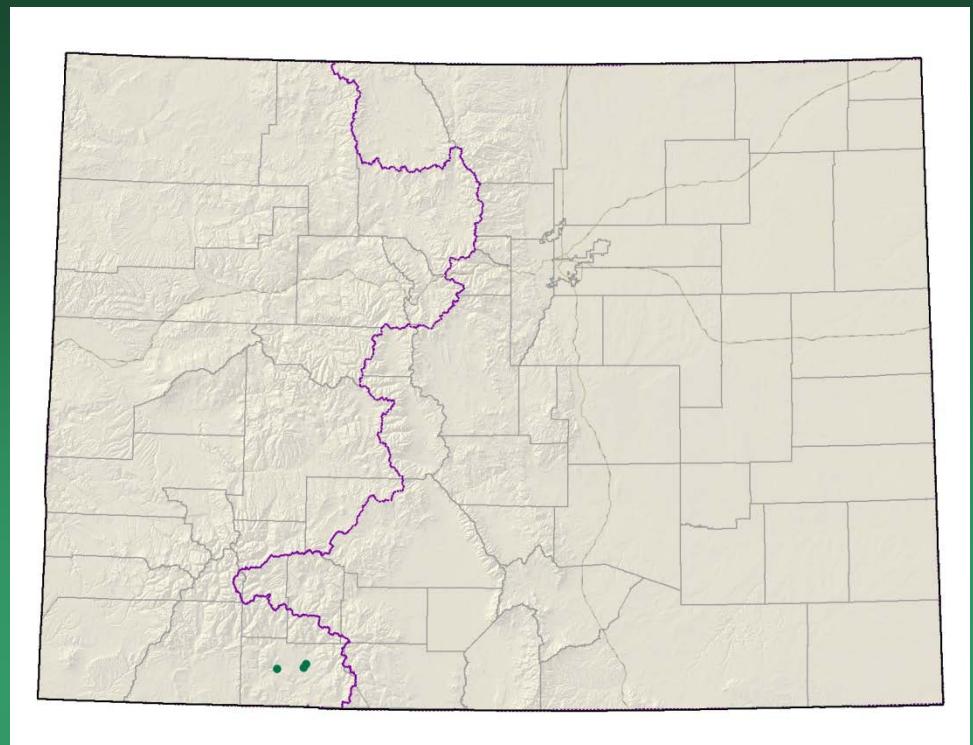
- Federal status: Endangered
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic
- Last observed: 2008
- Occurrences: 11
- Individuals: 10,000-12,000
- Primary threats: mining, recreation
- Land ownership/management: private, USFS, BLM

Eutrema penlandii



Ipomopsis polyantha Pagosa gilia

- Federal status: Candidate
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2009
- Individuals: 10,000
- Occurrences: 3
- Primary threats: residential development, road construction and maintenance, overgrazing
- Land ownership/management: private, highway right of way



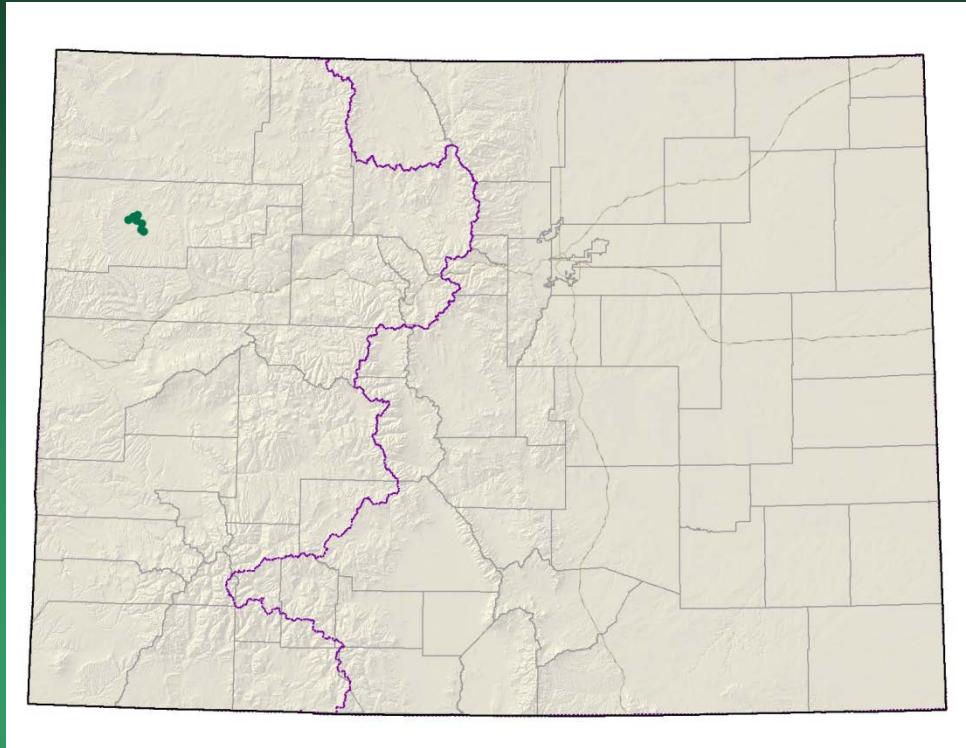
Ipomopsis polyantha



Lesquerella congesta

Dudley Bluffs bladderpod

- Federal status: Threatened
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2008
- Occurrences: 7
- Individuals: 100,000-500,000
- Primary threats: oil and gas development, oil shale and nahcolite mining, ORV use, overgrazing, trampling by wild horses
- Land ownership/management: BLM, state, private



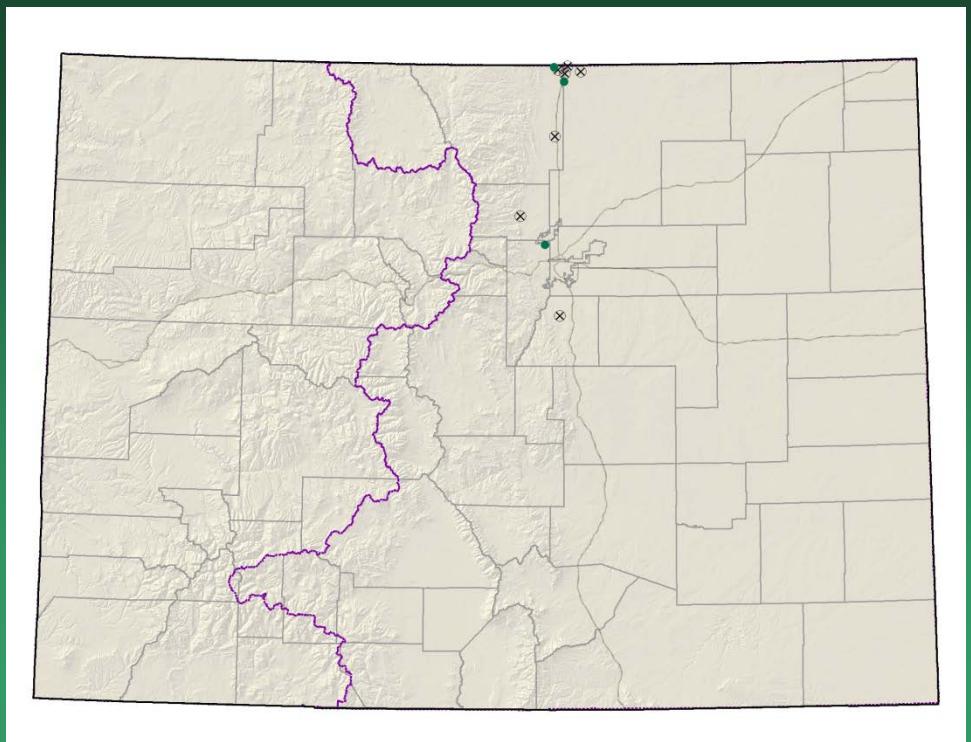
Lesquerella congesta



Oenothera coloradensis ssp. *coloradensis*

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

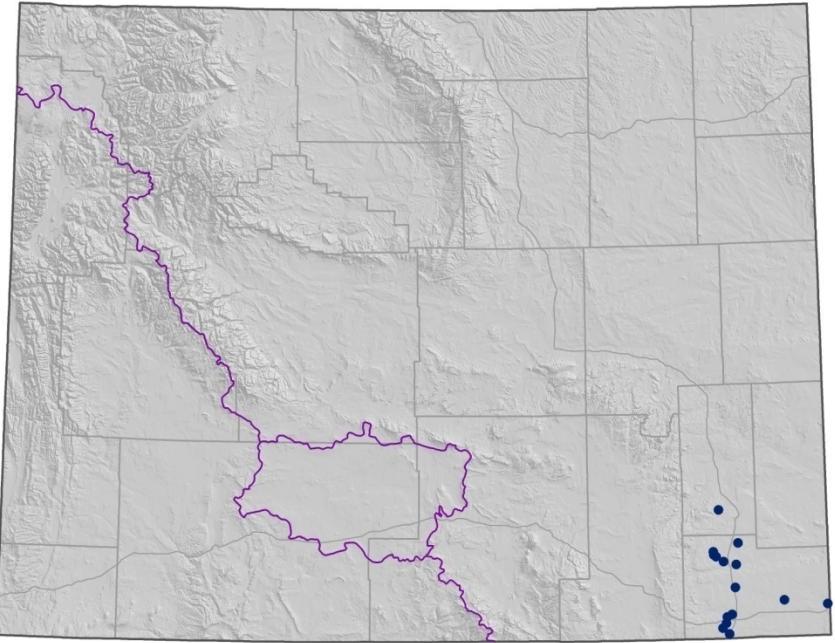
- Federal status: Threatened
- Heritage ranks: G3T2/S1
- Global distribution: Wyoming, Nebraska, and Colorado
- Last observed in Colorado: 2008
- Colorado occurrences: 14 (10 are historical)
- Colorado individuals: 11,000
- Primary threats: grazing, hydrological alterations, weeds, Interstate 25
- Land ownership: City of Fort Collins, private, state



Oenothera coloradensis ssp. *coloradensis*

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

- Federal status: Threatened
- Heritage ranks: G3T2/S2
- Last observed in Wyoming: 2009
- Wyoming occurrences: 15
- Primary threats: subdivisions, water developments, exotic species
- Land ownership/management: F.E. Warren Air Force Base, State, Private





Gaura neomexicana ssp. *coloradensis*

Pediocactus knowltonii

Knowlton's cactus

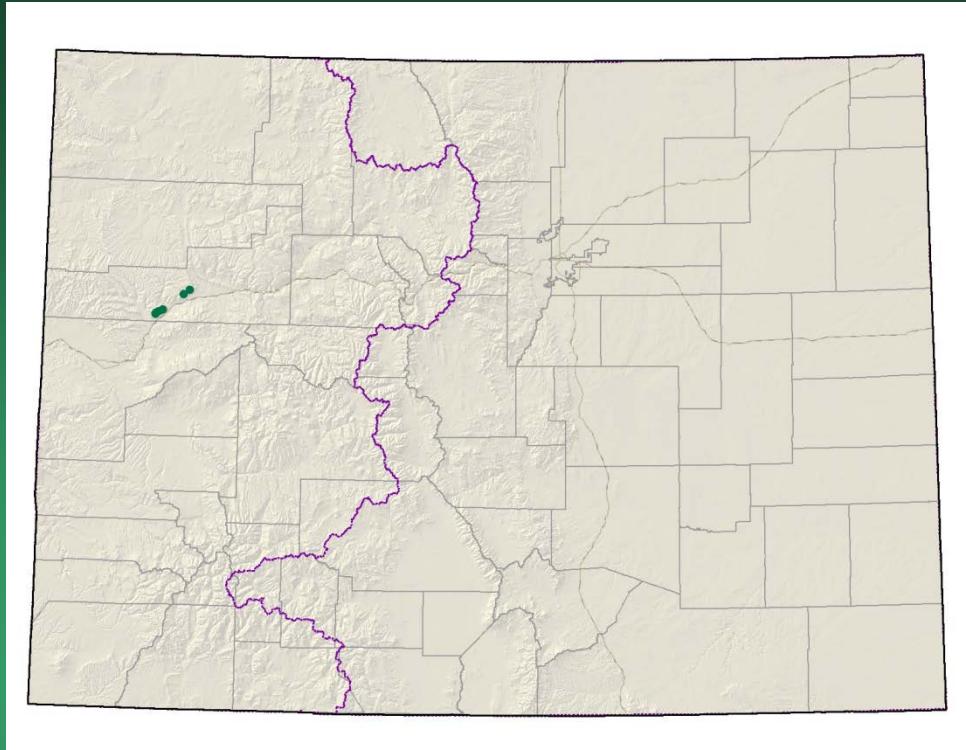
GIS analysis determined that the species does not actually occur in Colorado.

- 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 debilis

Parachute penstemone

- Federal status: Candidate
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2009
- Occurrences: 7
- Individuals: 6,750
- Primary threats: oil and gas development, oil shale development, recreation
- Land ownership/management: private, BLM, DOE



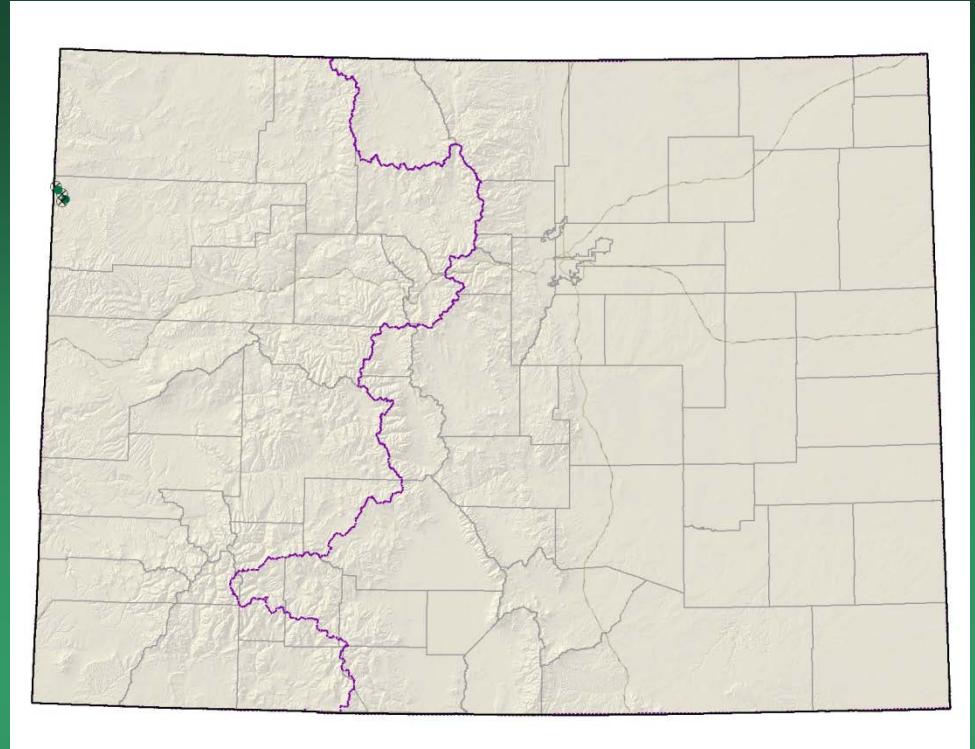


Penstemon debilis



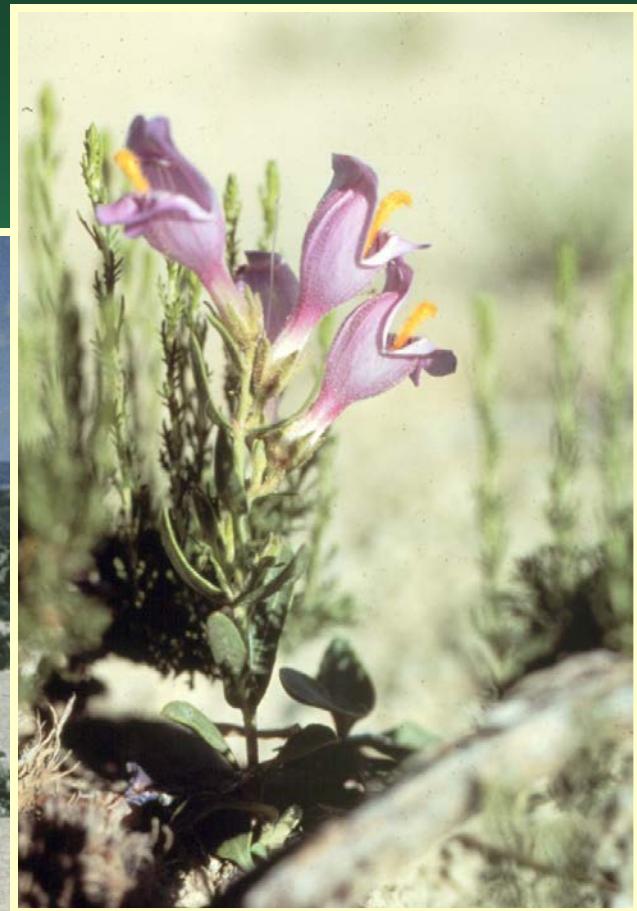
Penstemon grahamii

Graham beardtongue



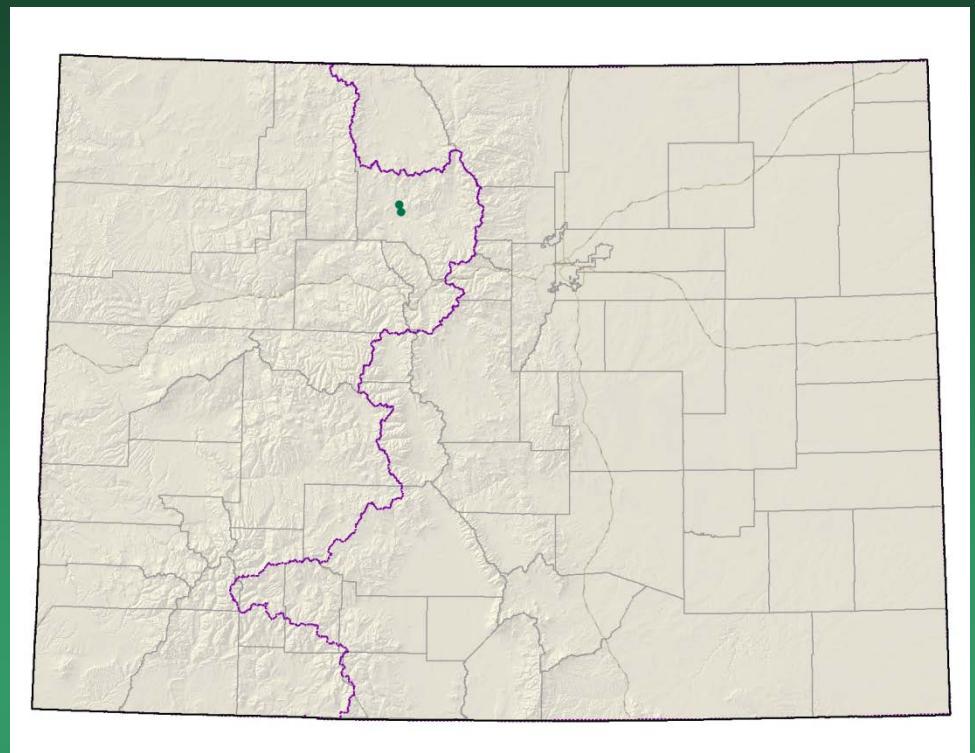
- Federal status: Removed from candidate list
- Heritage ranks: G2/S1
- Global distribution: Utah and Colorado (Rio Blanco County)
- Last observed in Colorado: 2003
- Colorado occurrences: 5 (3 are historical)
- Colorado individuals: 5,000
- Primary threats: oil and gas development, overgrazing
- Land ownership/management: BLM

Penstemon grahamii



Penstemon penlandii

Penland beardtongue



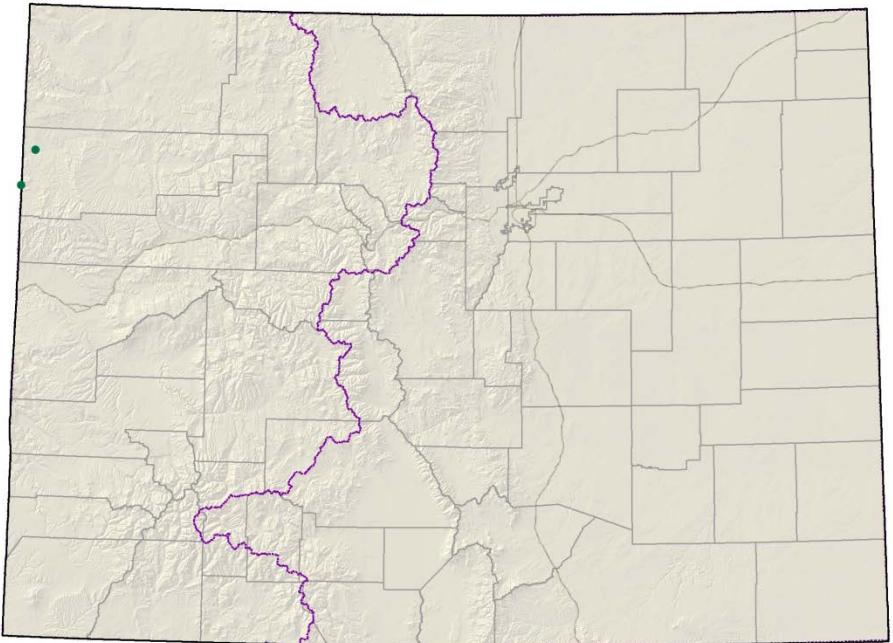
- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2008
- Occurrences: 2
- Individuals: 5,000-8,000
- Primary threats: road maintenance (grading, spraying, snow plowing), ORV use
- Land ownership/management: BLM, private

Penstemon penlandii



Penstemon scariosus 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

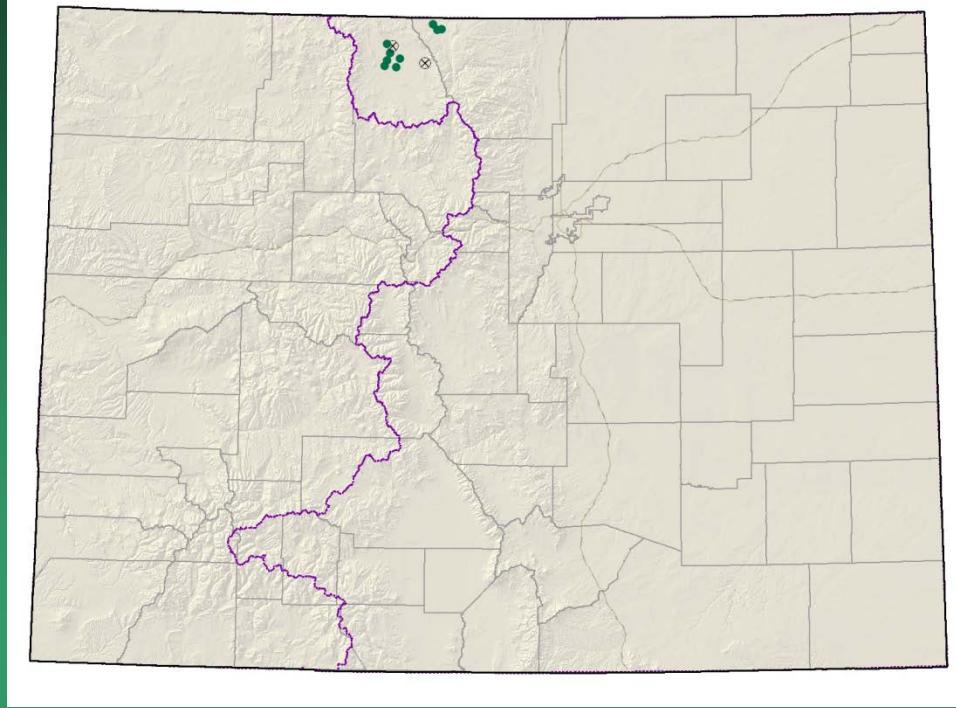


Penstemon scariosus var. *albifluvis*

Phacelia formosula

North Park phacelia

- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2009
- Occurrences: 11 (2 are historical)
- Individuals: 8,000
- Primary threats: ORV use, coal extraction, overgrazing, oil and gas development
- Land ownership/management: BLM, private, USFWS



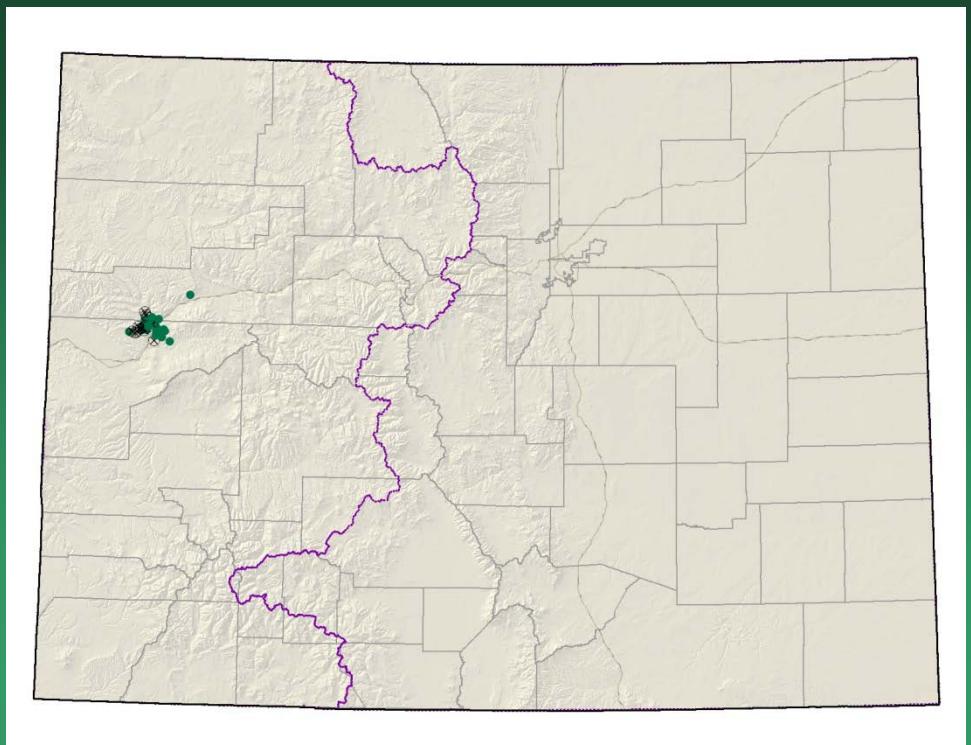


Phacelia formosula

Phacelia submutica

DeBeque phacelia

- Federal status: Candidate
- Heritage ranks: G4T2/S2
- Global distribution: Colorado endemic
- Last observed: 2009
- Occurrences: 35 (13 are historical)
- Individuals: 25,000
- Primary threats: oil and gas development, ORV use, overgrazing, oil shale mining
- Land ownership/management: BLM, private, USFS, DOD





Phacelia submutica

Physaria obcordata Piceance twinpod



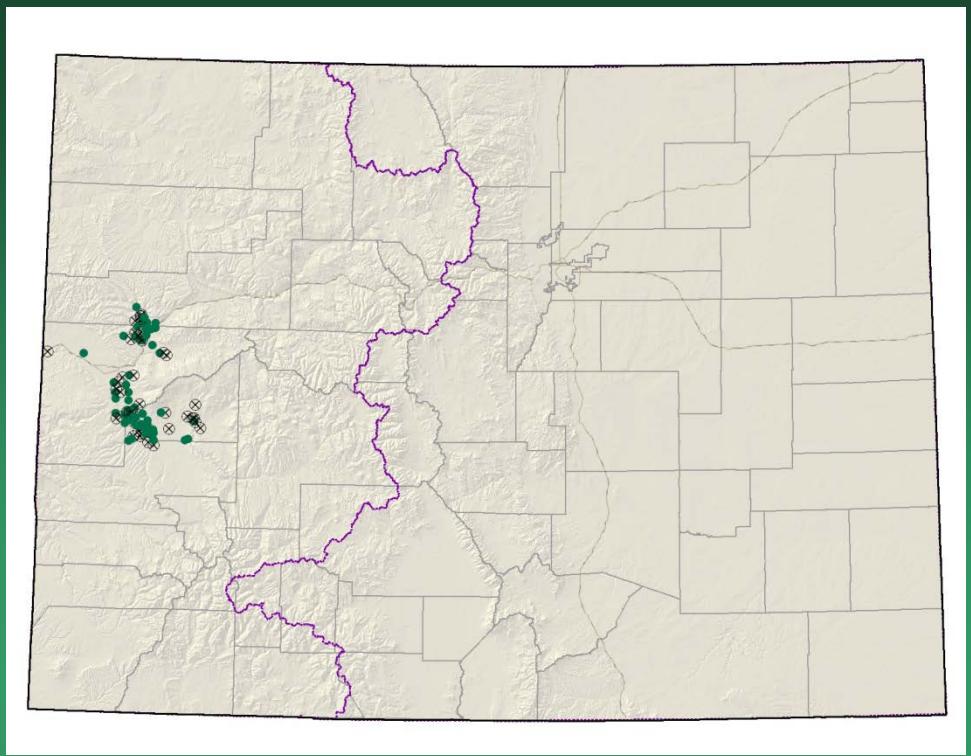
- Federal status: Threatened
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic
- Last observed: 2008
- Occurrences: 10
- Individuals: 23,000
- Primary threats: oil and gas development, oil shale and nahcolite mining, ORV use, trampling by wild horses
- Land ownership/management: BLM, state, private



Physaria obcordata



Sclerocactus glaucus Uinta Basin hookless cactus



- Federal status: Threatened
- Heritage ranks: G3/S3
- Global distribution: Colorado
- Last observed in Colorado: 2008
- Colorado occurrences: 98 (47 are historical)
- Colorado individuals: 7600
- Primary threats: oil and gas development, residential development, cactus collecting
- Land ownership/management: BLM, state, private

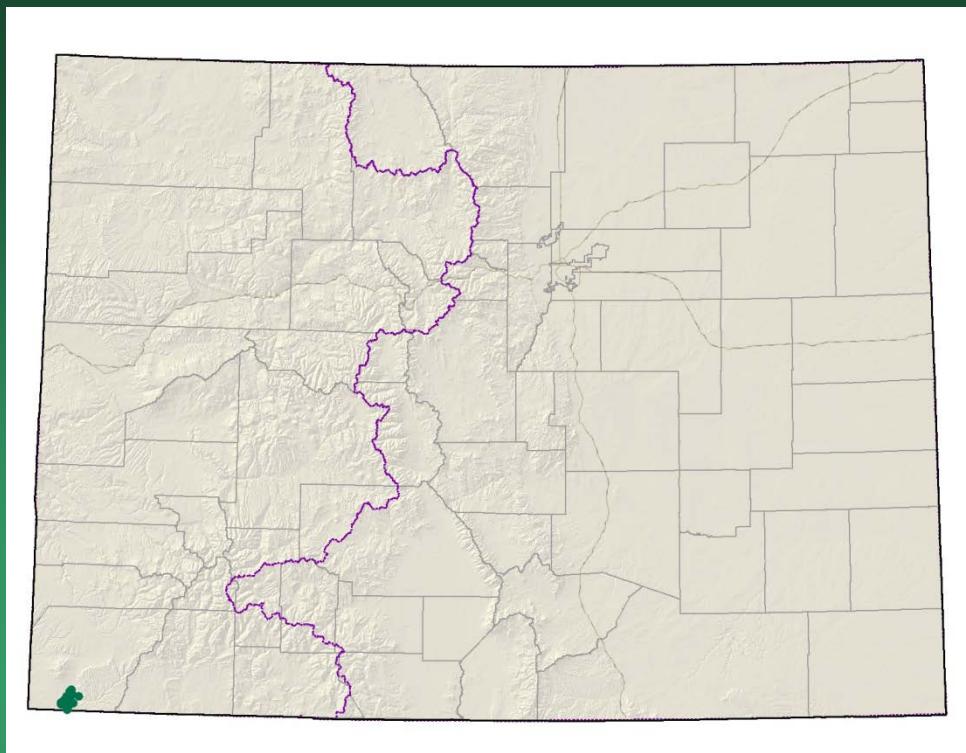


Sclerocactus glaucus

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

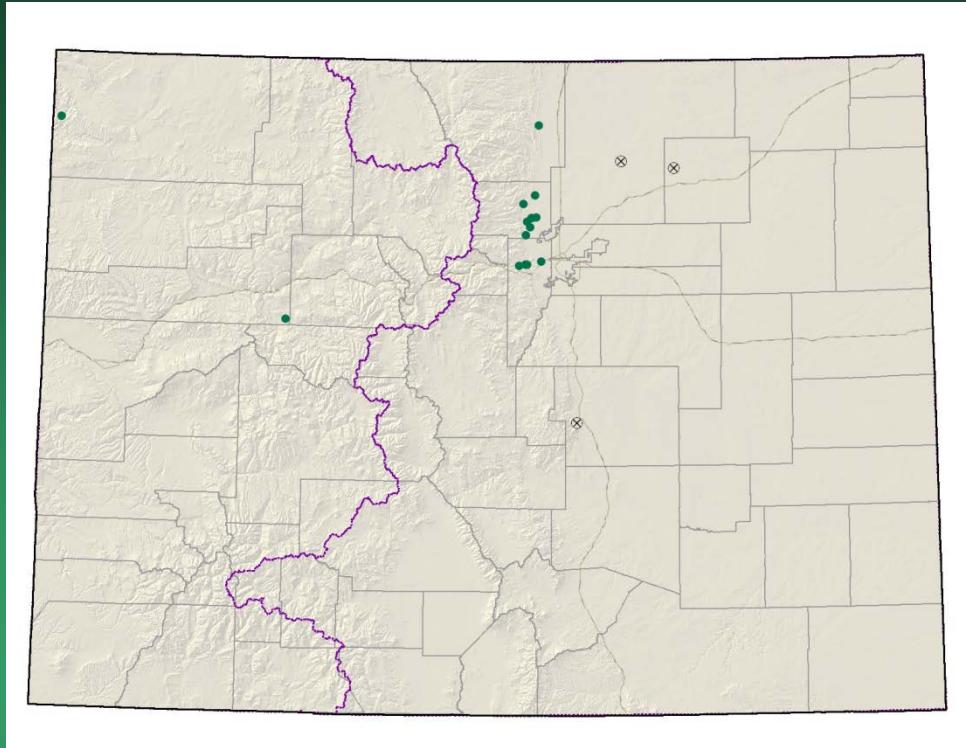




Sclerocactus mesae-verdae

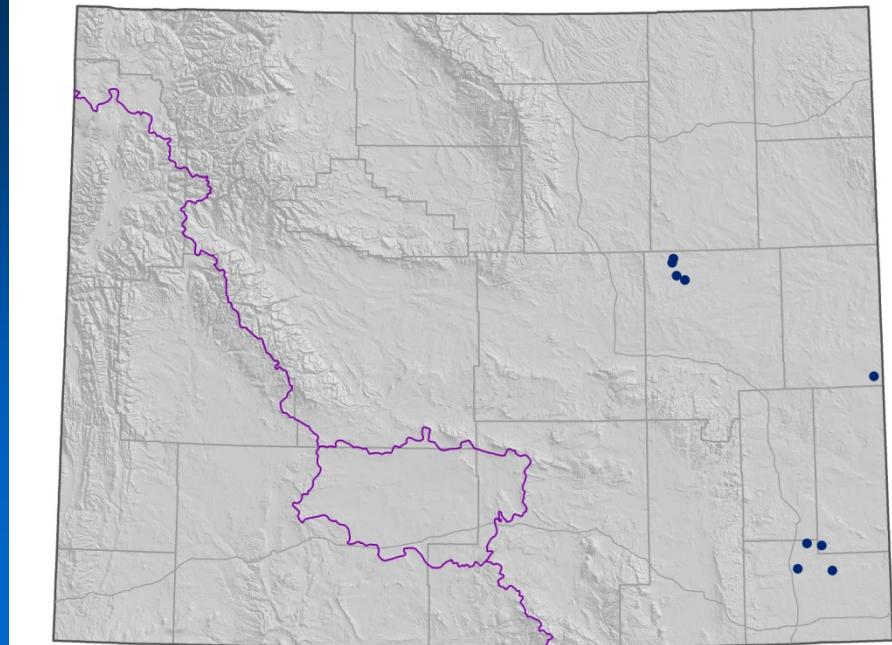
Spiranthes diluvialis Ute ladies'-tresses

- Federal status: Threatened
- Heritage ranks: G2G3/S2
- Global distribution: Washington, Idaho, Montana, Wyoming, Nevada, Utah, Nebraska, and Colorado
- Last observed in Colorado: 2008
- 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 Ute ladies'-tresses

- Federal status: Threatened
- Heritage ranks: G2G3/S1S2
- Last observed in Wyoming: 2009
- Wyoming occurrences: 9
- Primary threats: energy and water developments, exotic species, subdivisions
- Land ownership/management: BLM Casper FO, BLM Rawlins FO, State, Private



Spiranthes diluvialis



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

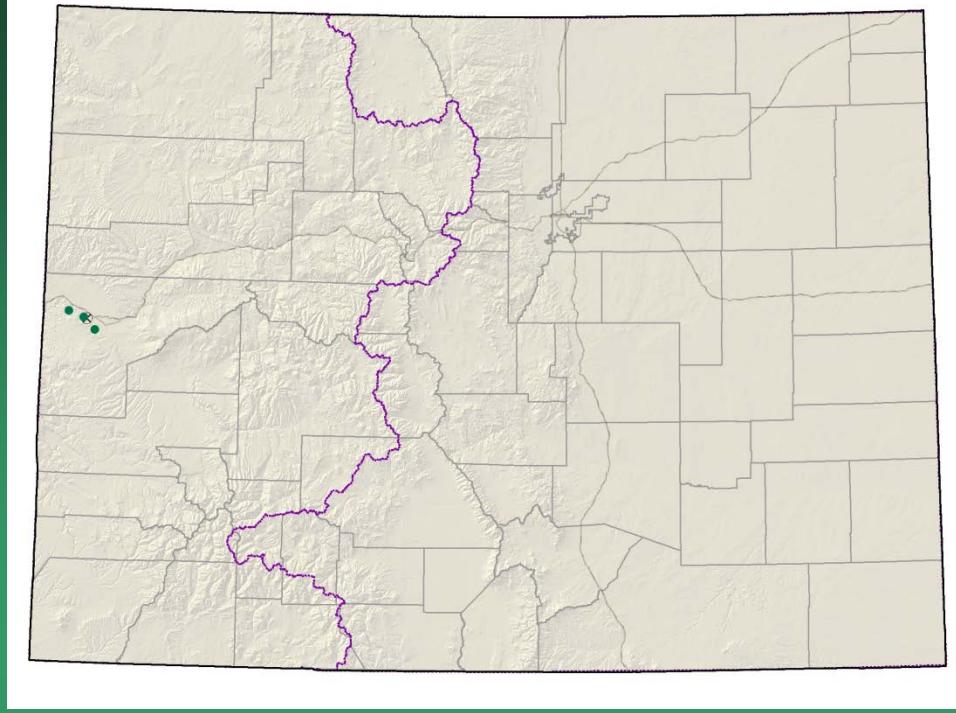
Scientific name	Common name	Distribution	CO counties
<i>Astragalus hamiltonii</i> <i>(Astragalus lonchocarpus var. hamiltonii)</i>	Hamilton milkvetch	CO, UT	Moffat
<i>Astragalus microcymbus</i>	Skiff milkvetch	CO	Gunnison & Saguache
<i>Astragalus schmolliae</i>	Schmoll milkvetch	CO	Montezuma
<i>Corispermum 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

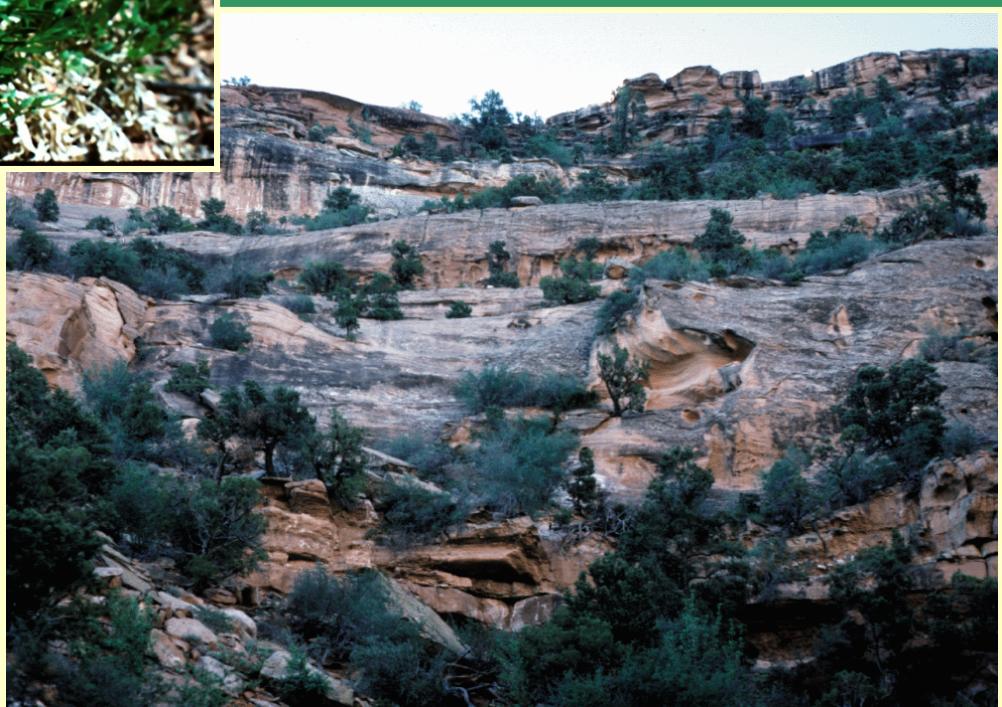
Aletes latilobus= *Lomatium latilobum* Canyonlands biscuitroot

- Federal status: BLM sensitive
- Heritage ranks: G1/S1
- Global distribution: Utah (Grand and San Juan counties) and Colorado (Mesa County-- Colorado National Monument and Rattlesnake Canyon)
- Last observed in Colorado: 1997
- Colorado occurrences: 4 (1 is historical)
- Colorado individuals: >5,000
- Primary threats: Habitat disturbance, Park developments, trampling by hikers
- Land ownership/management: Colorado National Monument, BLM, possibly on adjacent private



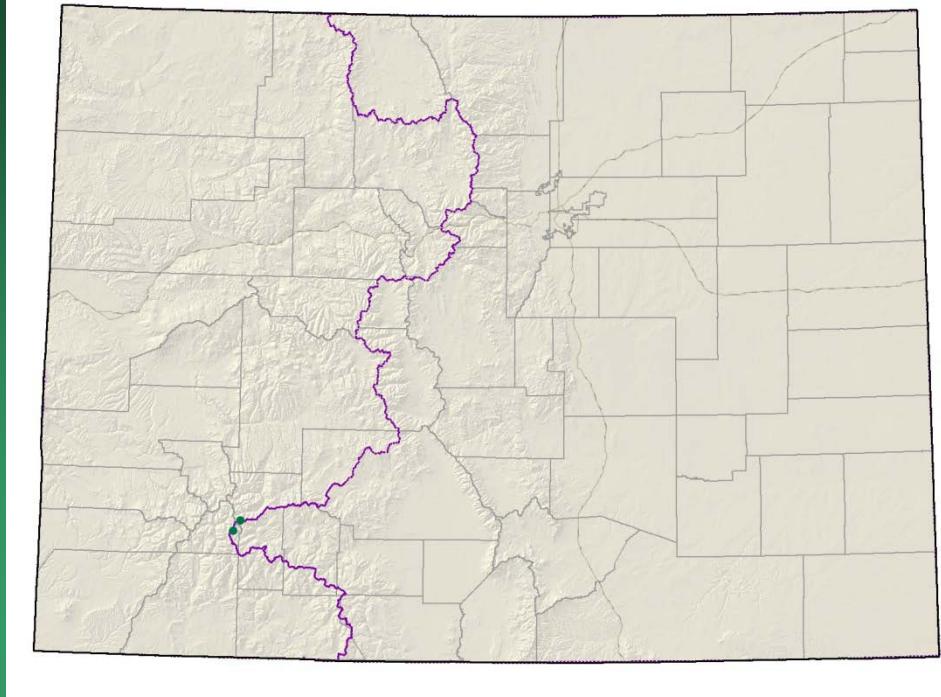


Aletes latilobus



Aliciella sedifolia = *Gilia sedifolia* Stonecrop gilia

- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, San Juan Mountains, Hinsdale County
- Last observed: 2007
- Occurrences: 2
- Individuals: 1,100
- Primary threats: non-motorized recreation
- Land ownership/management: Gunnison and possibly San Juan National Forest

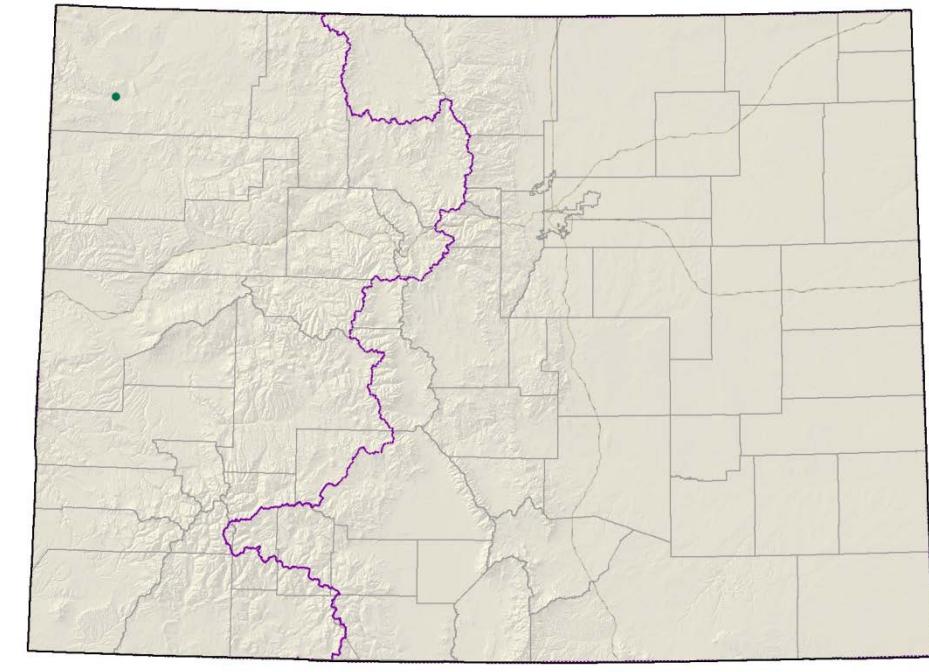


Aliciella sedifolia



Astragalus lonchocarpus var.
hamiltonii
= *A. hamiltonii*
Hamilton's milkvetch

- Federal status: BLM sensitive
- Heritage ranks: G1/S1
- Global distribution: Uintah County, Utah and Moffat County, Colorado
- Last observed in Colorado: 1991
- Colorado occurrences: 1
- Colorado individuals: 12
- Primary threats: unknown, area heavily grazed in past, OHV and oil & gas development for UT occurrences.
- Land ownership/management: Dinosaur NM in CO and UT; National Wildlife Refuge, Ute, BLM, State, and private in UT



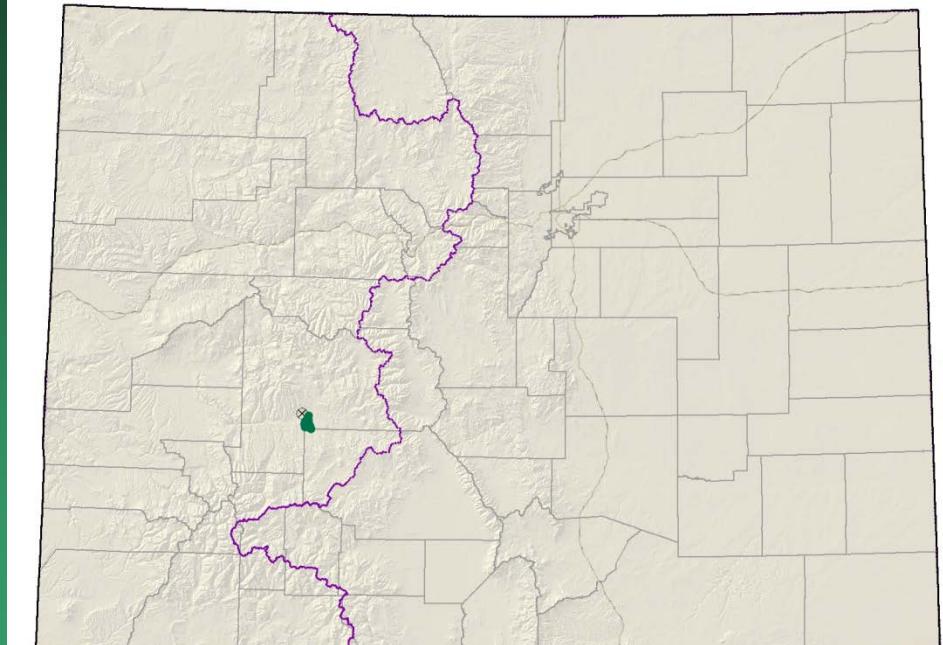
Astragalus lonchocarpus
var. *hamiltonii*



Astragalus microcymbus

Skiff milkvetch

- Federal status: BLM sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, South Beaver Creek, Gunnison and Saguache counties
- Last observed: 2008
- Occurrences: 4 (2 are historical)
- Individuals: 10,332
- Primary threats: recreation, grazing by cattle and rabbits, mining, residential development
- Land ownership/management: BLM (most occurrences within a BLM ACEC and South Beaver Creek Natural Area), private

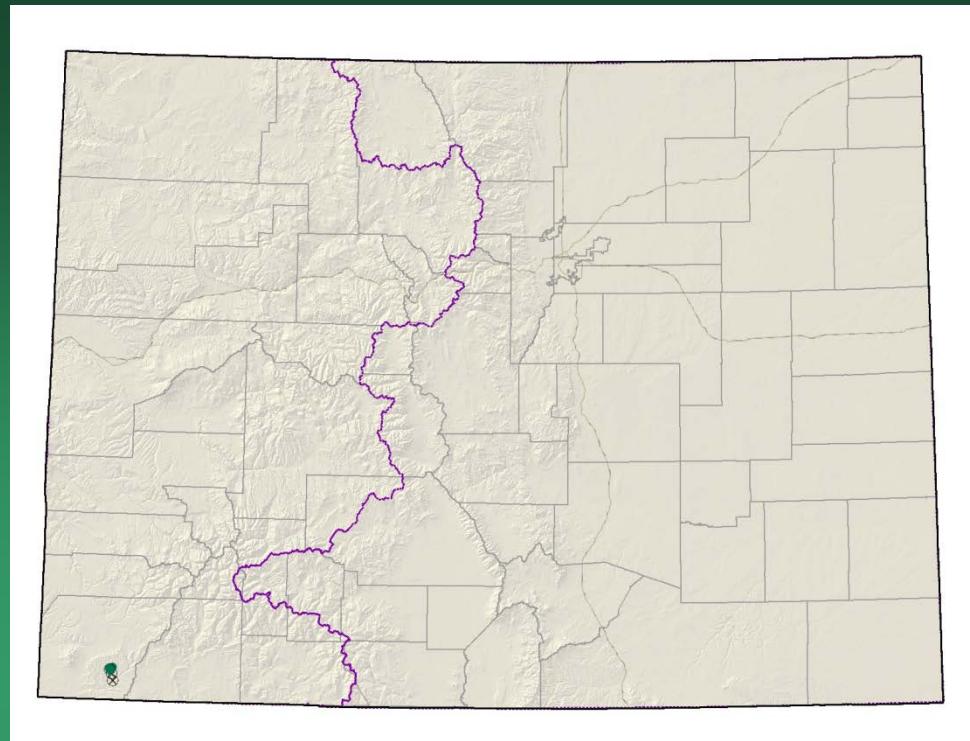


Astragalus microcymbus



Astragalus schmolliae Schmoll's milkvetch

- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Chapin Mesa, Montezuma County
- Last observed: 2005
- Occurrences: 6 (3 are historical)
- Individuals: 294,499 in Mesa Verde, Tribal lands unsurveyed
- Primary threats: Noxious weed invasions, Park developments, grazing and road construction outside NP
- Land ownership/management: Mesa Verde National Park, Ute Mountain Ute Tribal lands

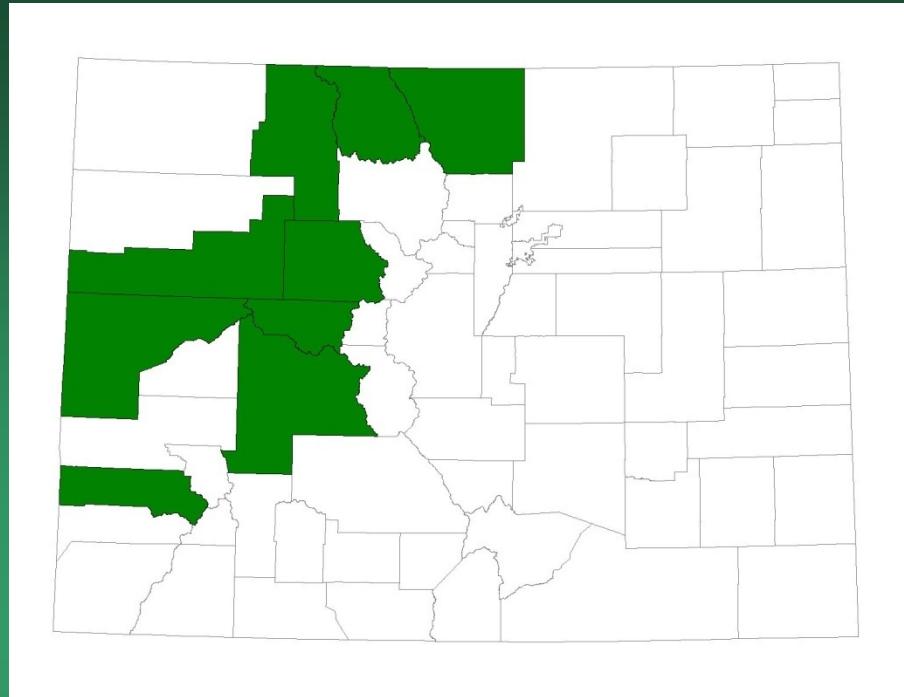


Astragalus schmolliae



Cirsium scapanolepis Mountain slope thistle

- Federal status: none
- Heritage ranks: G1G2Q/S1
- Global distribution: Colorado endemic
- Last observed in Colorado: 1900-1983?
- Colorado occurrences: unknown, obscure
- Colorado individuals: unknown
- Primary threats: weevils, unknown
- Land ownership/management: unknown



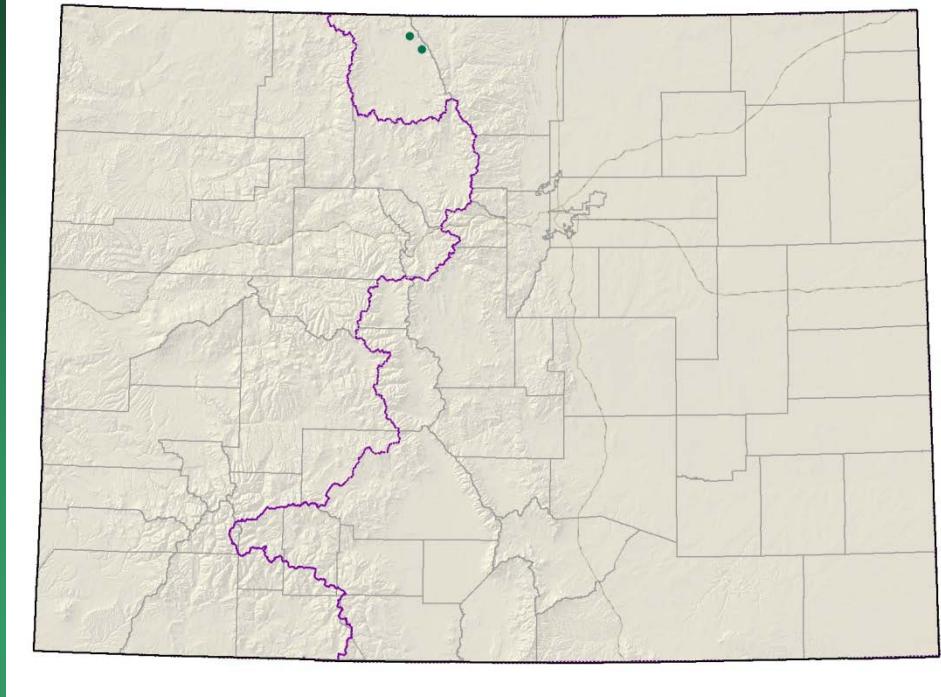
Cirsium scapanolepis



Corispermum navicula

Crescent bugseed

- Federal status: none
- Heritage ranks: G1?/S1
- Global distribution: Colorado endemic (Jackson County), possibly Oklahoma?
- Last observed: 2006
- Occurrences: 2 principal occurrences
- Individuals: common locally
- Primary threats: off-road vehicle use
- Land ownership/management: BLM, Kremmling Field Office



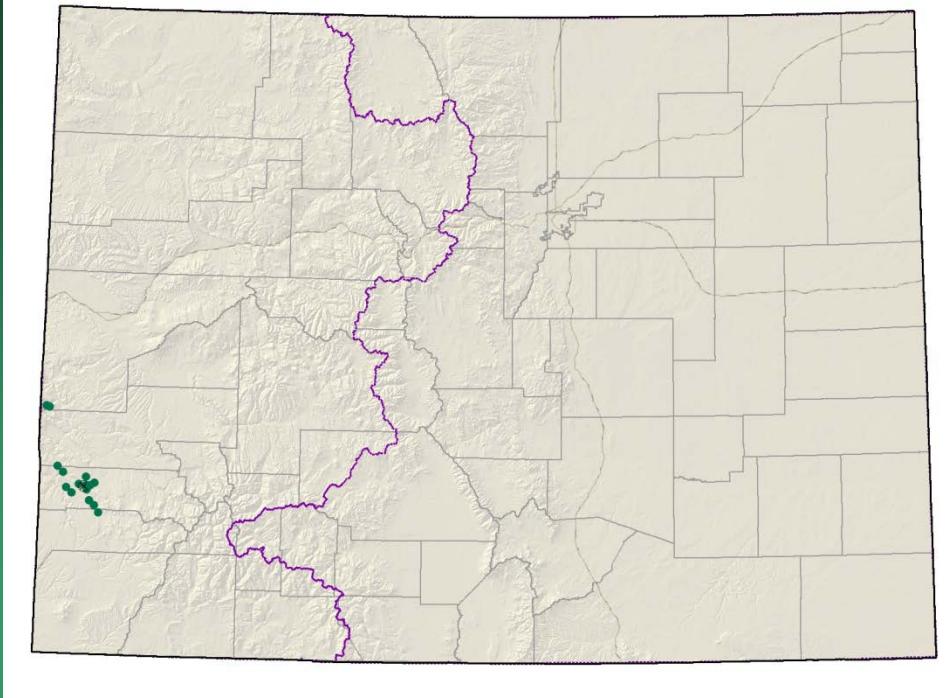


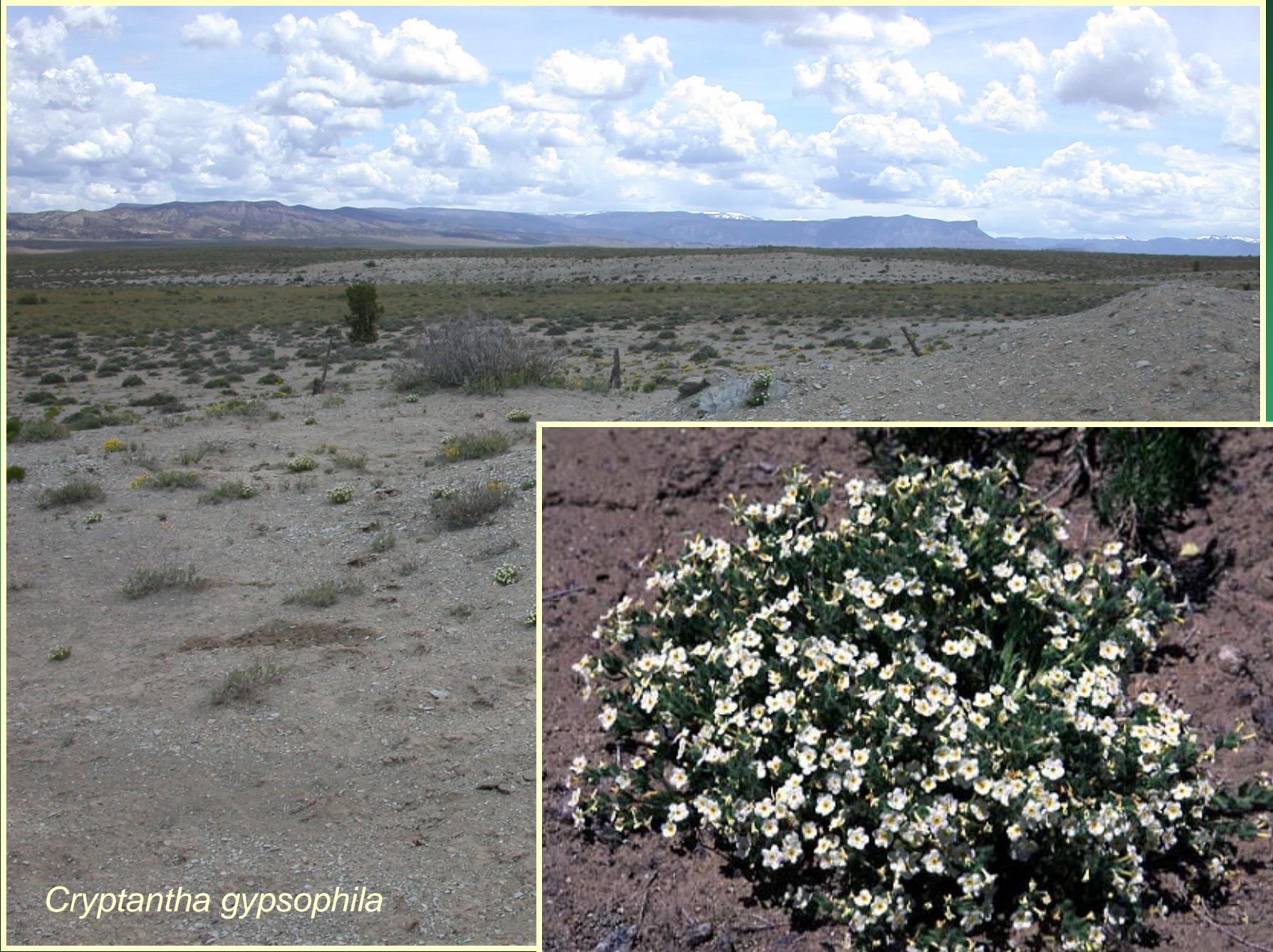
Corispermum navicula



Cryptantha gypsophila Gypsum Valley Cat-eye

- Federal status: none
- Heritage ranks: G1G2/S1S2
- S2Global distribution: Colorado endemic, Mesa, Montrose & San Miguel Counties
- Last observed: 2008
- Occurrences: 16
- Individuals: 25,100+
- Primary threats: oil and gas development, grazing, ATVs, recreation, roads
- Land ownership/management: BLM, Private



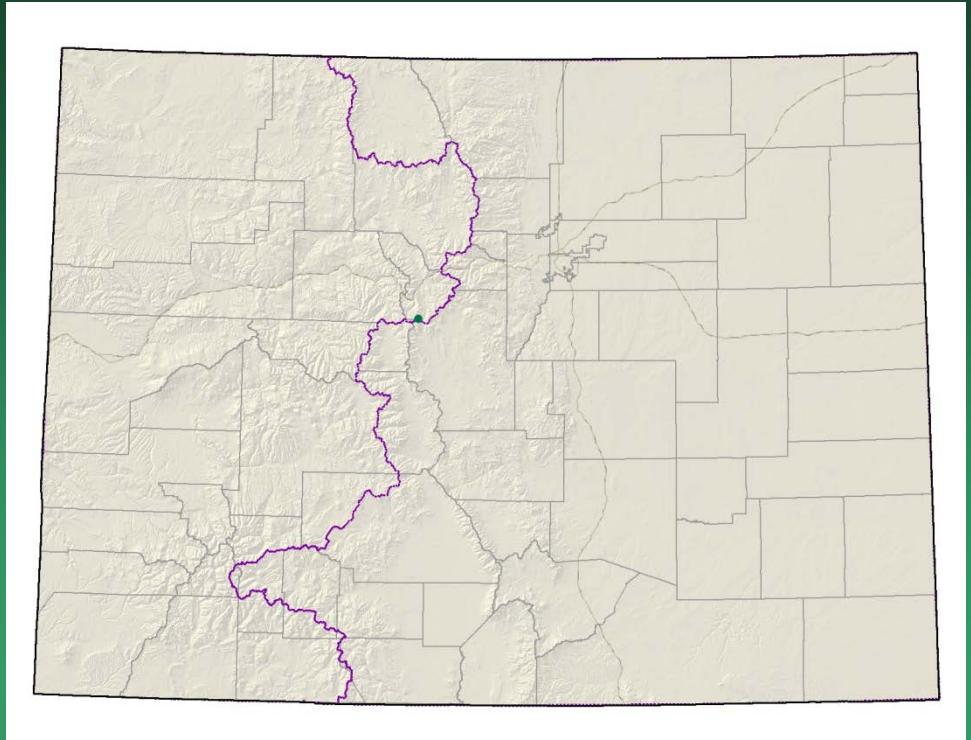


Cryptantha gypsophila

Draba weberi

Weber's draba

- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Monte Cristo Creek drainage in Summit County
- Last observed: 2009
- Occurrences: 1
- Individuals: 20-100
- Primary threats: road and dam construction and maintenance, environmental stochasticity, recreation, mining, noxious weeds, climate change
- Land ownership/management: private (Colo. Spgs. Utilities)



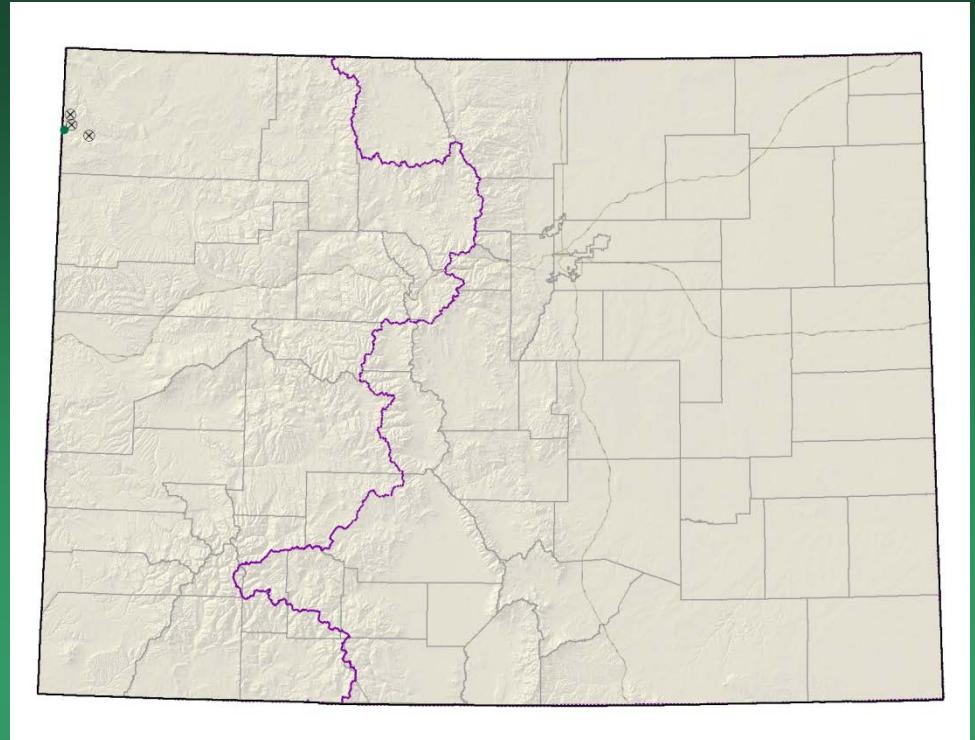


Draba weberi



Erigeron wilkenii Dieter's fleabane

- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: endemic to Colorado (Dinosaur National Monument, Moffat County)
- Last observed: 1995
- Occurrences: 4 (3 are historical)
- Individuals: 1,000-3,000
- Primary threats: no specific threats known
- Land ownership: Dinosaur NM

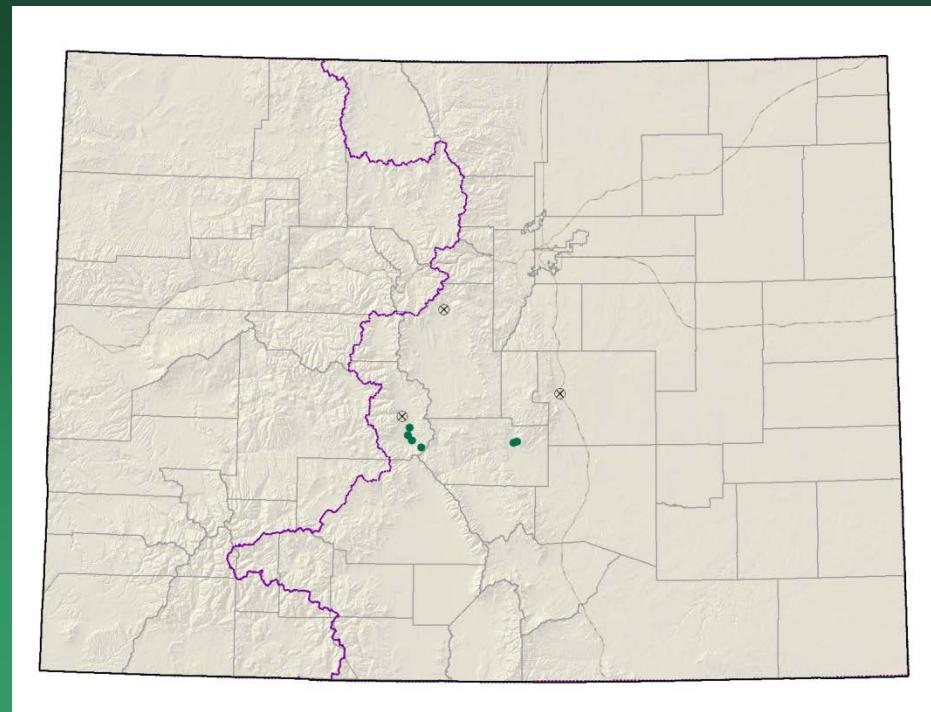


Erigeron wilkenii



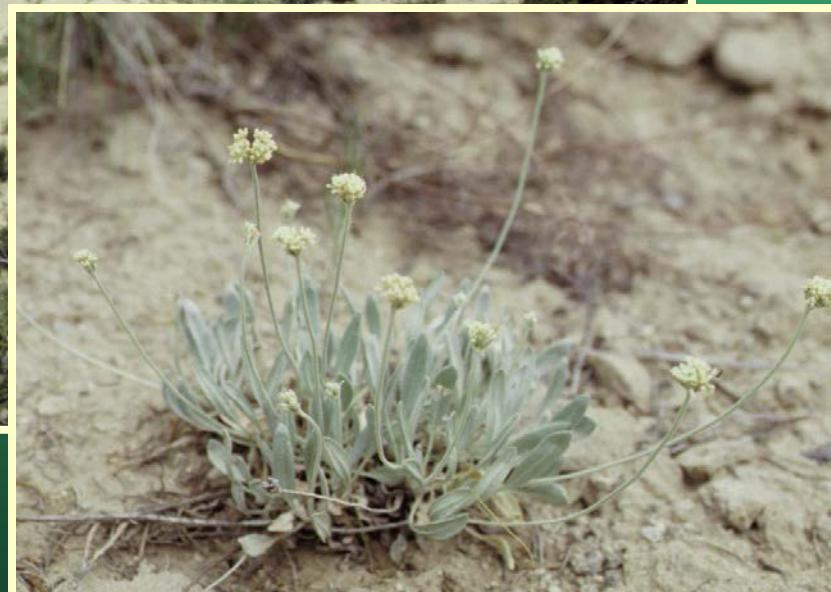
Eriogonum brandegeei Brandegee's buckwheat

- Federal status: USFS & BLM sensitive
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic, Chaffee and Fremont counties
- Last observed: 2008
- Individuals: 35,000-several million
- Occurrences: 9 (3 are historical)
- Primary threats: off-road vehicle use and other recreation, residential and commercial development, timbering, mining, highway maintenance, weeds, grazing
- Land ownership/management: BLM (some within ACECs), state, private, highway right of way





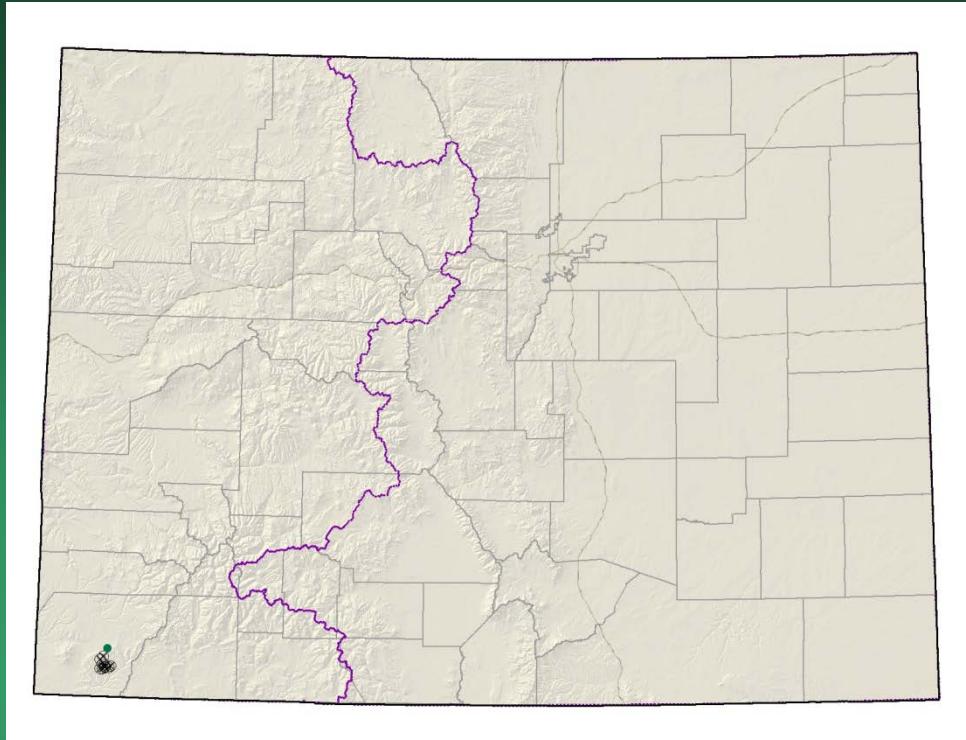
Eriogonum brandegeei



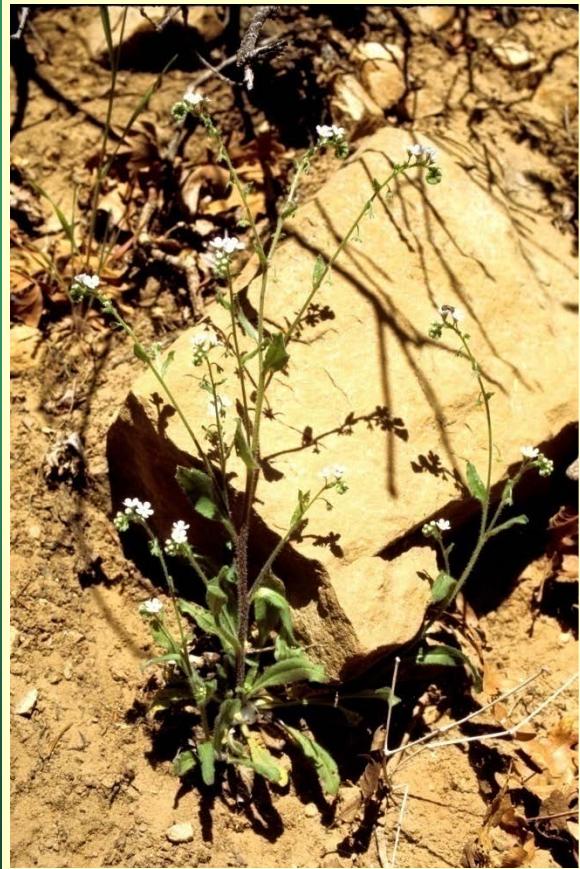
Hackelia gracilenta

Mesa Verde stickseed

- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Mesa Verde National Park, Montezuma County
- Last observed: 1997
- Occurrences: 10 (9 are historical)
- Individuals: unknown, may be <1000
- Primary threats: Unknown, possibly recreation, and/or developments in the Park, such as trails or roads. Fires may have had an impact on this species.
- Land ownership/management: Mesa Verde NP



Hackelia gracilenta



Lygodesmia doloresensis

Dolores River skeletonplant



- Federal status: BLM sensitive in CO
- Heritage ranks: G1G2/S1
- Global distribution: Utah and Colorado (Mesa County)
- Last observed in Colorado: 2008
- Colorado occurrences: 10 (3 are historical)
- Colorado individuals: 2470
- Primary threats: deer, rabbit, and cattle grazing, private land development, road maintenance, weeds
- Land ownership/management: private, BLM

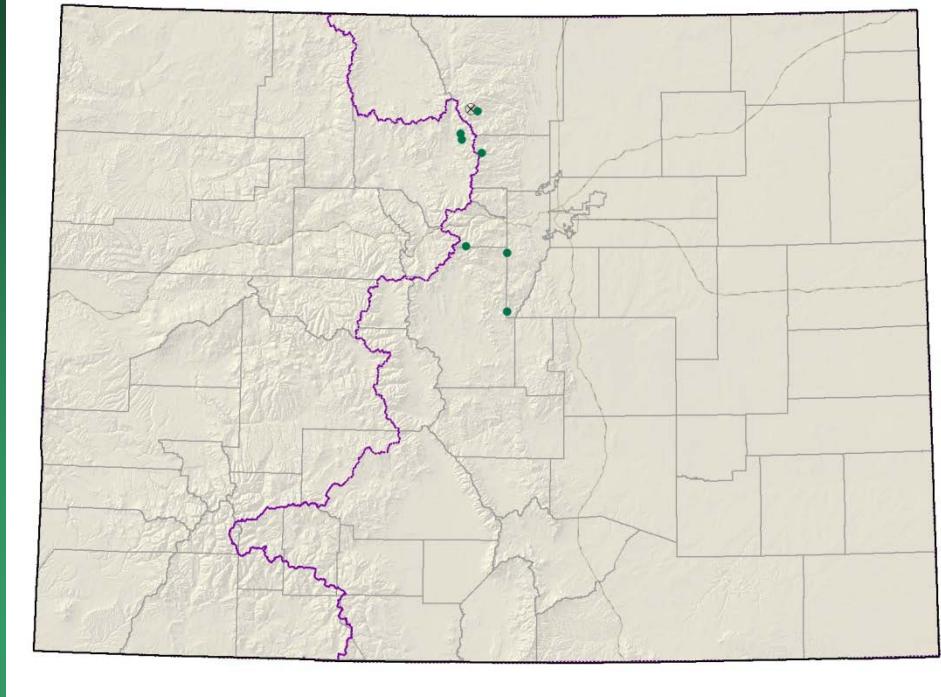


Lygodesmia doloresensis

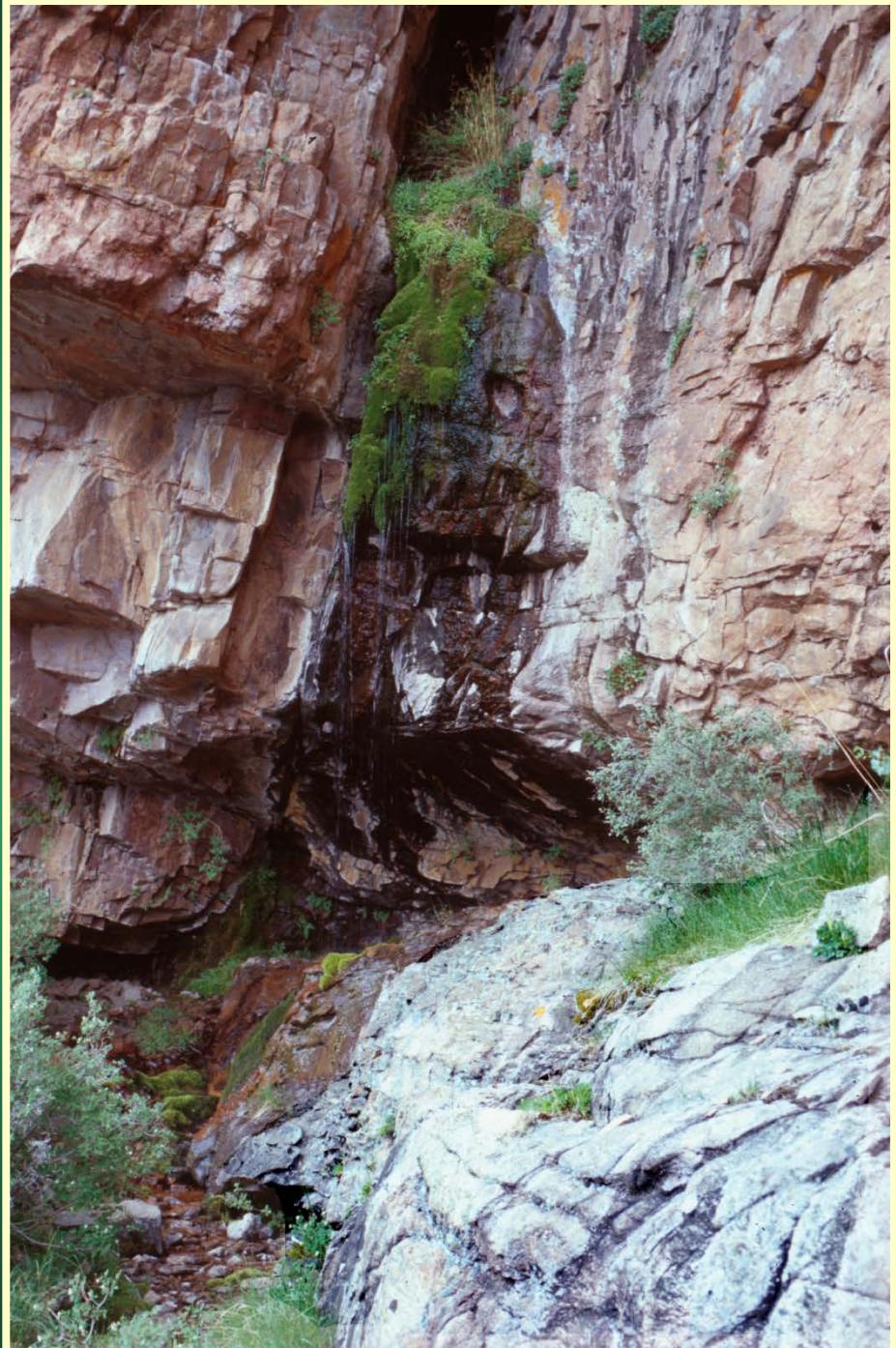
Mimulus gemmiparus

Budding monkeyflower

- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Boulder, Clear Creek, Jefferson, Grand, and Larimer counties
- Last observed: 2006
- Occurrences: 8
- Individuals: >125,000
- Primary threats: recreational activities, trampling, competition from other plants, interference with hydrology
- Land ownership/management: Rocky Mountain NP, Pike and Arapaho Roosevelt National Forests



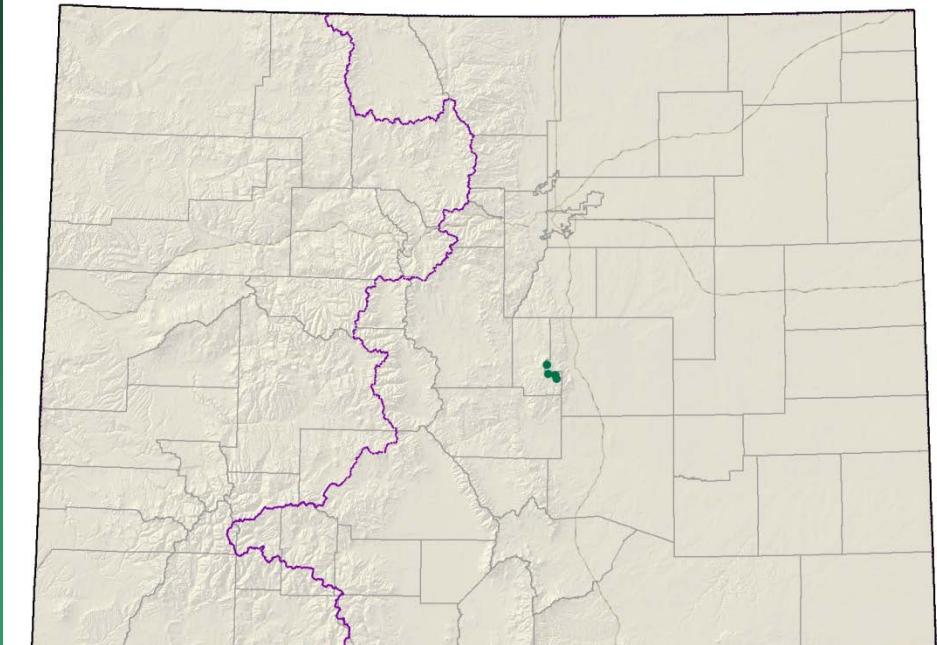
Mimulus gemmiparus



Oreoxis humilis

Pike's Peak alpine parsley

- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic (El Paso and Teller counties)
- Last observed: 2008
- Occurrences: 3 principal occurrences
- Individuals: 4,340 (tens of thousands estimated)
- Primary threats: road erosion and construction, structure maintenance, motorized and non-motorized recreation, herbivory, weeds
- Land ownership/management: Pike National Forest, private (Colorado Springs Utilities)



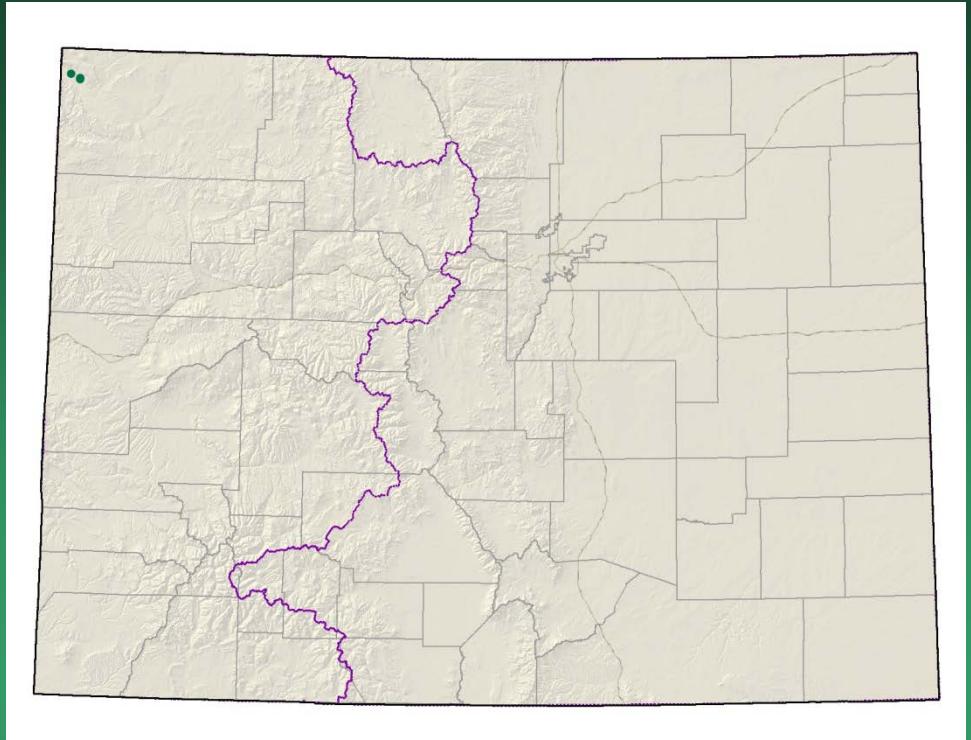


Oreoxis humilis



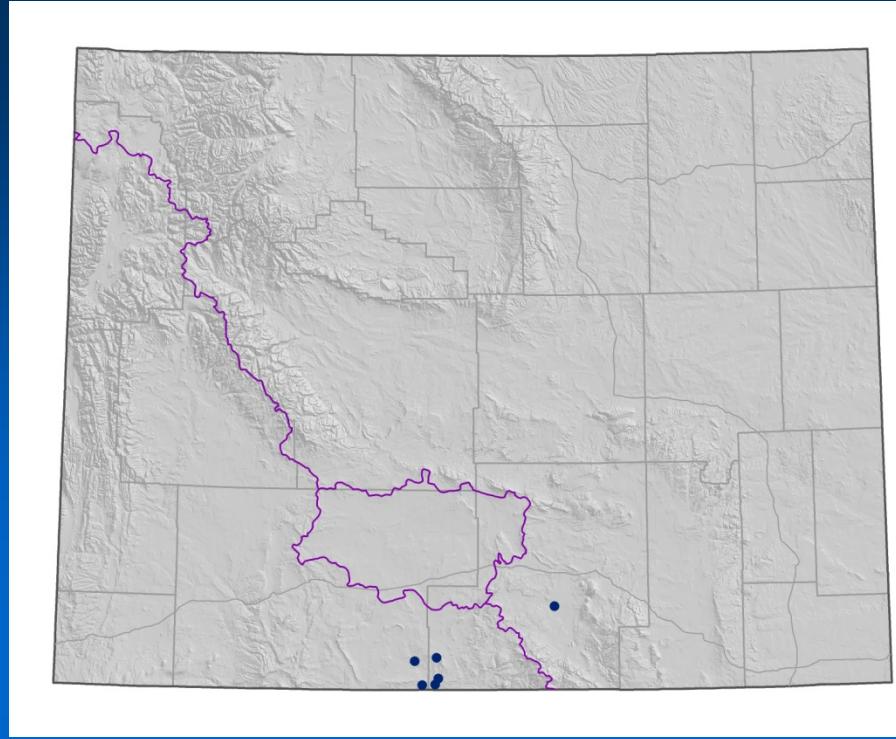
Penstemon gibbensii Gibbens' beardtongue

- Federal status: BLM sensitive
- Heritage ranks: G1G2/S1
- Global distribution: SC Wyoming, NE Utah, and NW Colorado
- Last observed in Colorado: 1999
- Occurrences: 7 total, 2 in CO
- Individuals: 17,000 individuals total, 6,300 in Colorado
- Primary threats in CO: noxious weeds, grazing, recreational activities, and uranium mining
- Land ownership in CO: BLM, National Wildlife Refuge



Penstemon gibbensii Gibbens' beardtongue

- Federal status: BLM Sensitive
- Heritage ranks: G1G2/S1
- Last observed in Wyoming: 2009
- Wyoming occurrences: 6
- Primary threats: energy developments, exotic species
- Land ownership/management: BLM Rawlins FO, State, Private

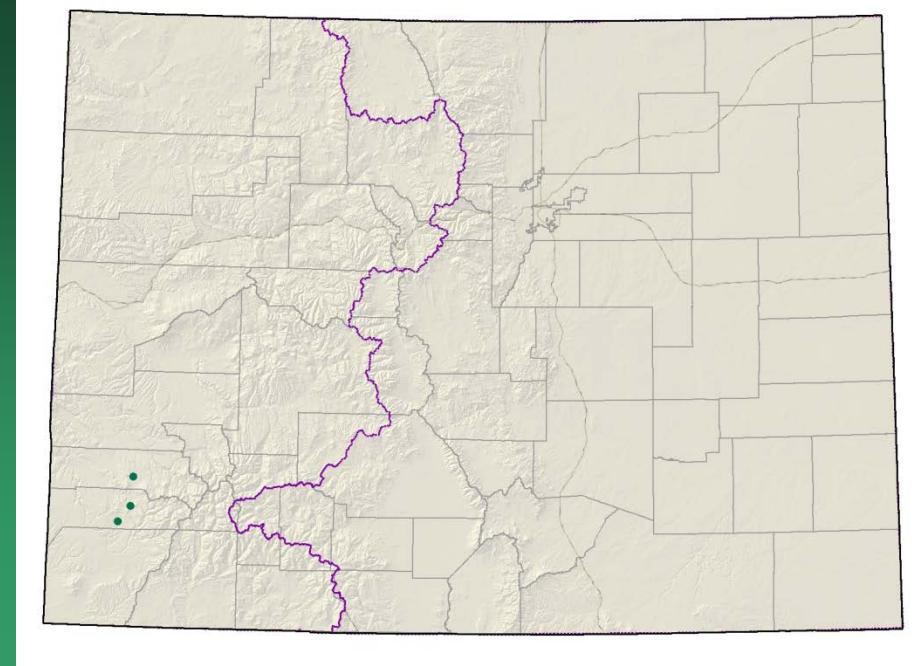


Penstemon gibbensii



Physaria pulvinata

Cushion bladderpod



- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, San Miguel and Dolores counties
- Last observed: 2009
- Occurrences: 5
- Individuals: 7150+
- Primary threats: recreation, livestock trampling, weed control, habitat modification for sage grouse management, roads
- Land ownership/management: Colorado: Miramonte SWA and Lone Mesa State Park, San Juan NF; BLM, private

Physaria pulvinata

