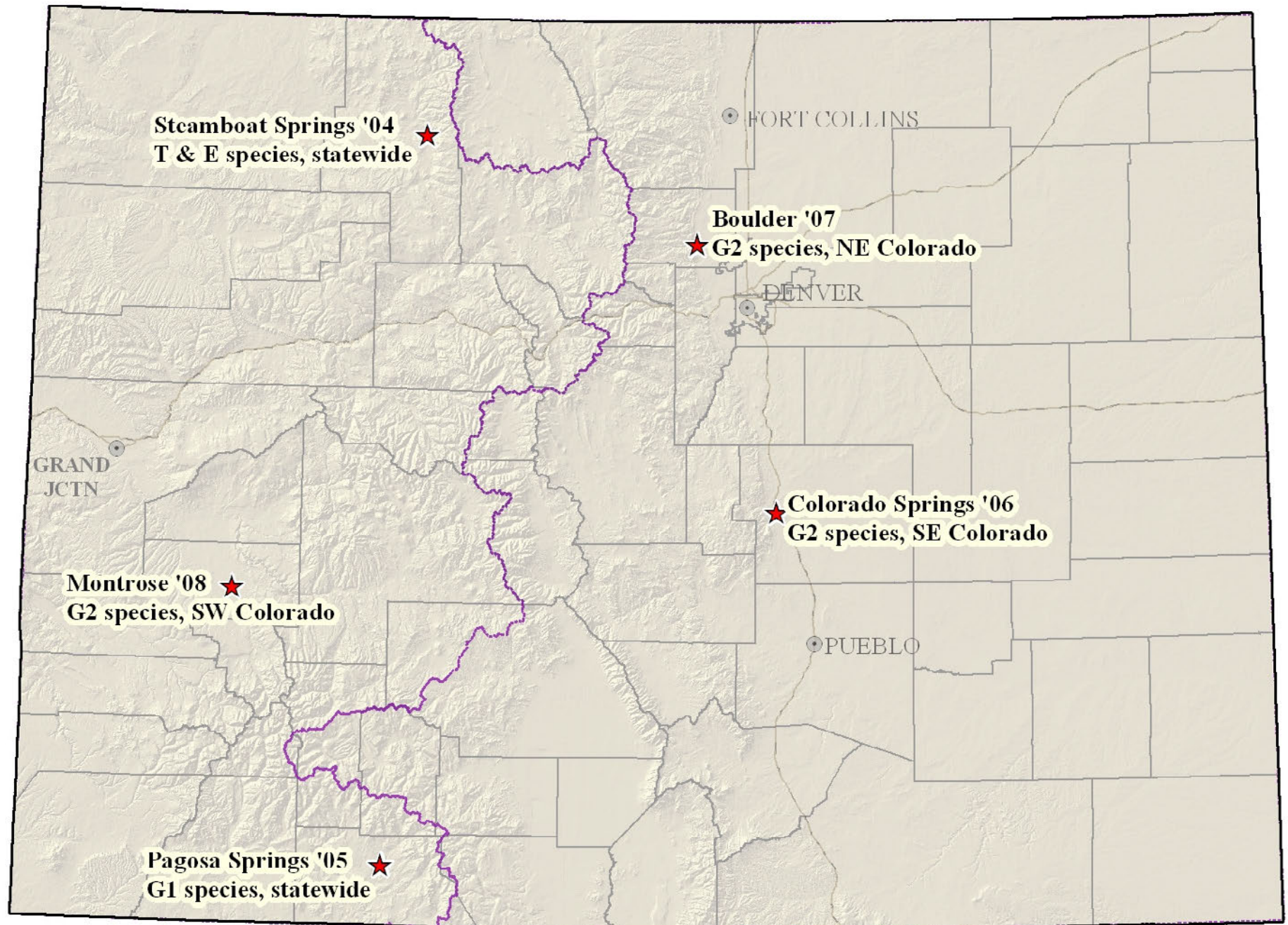


Review of Previous Meetings

1st Through 4th Annual Colorado Rare Plant Symposia 2004-2007





Species from previous years

2004 - T & E Species Statewide	2005 - G1 Species Statewide	2006 - G2 Species SE Colo	2007 - G2 Species NE Colo
<i>Astragalus humillimus</i>	<i>Aletes latilobus</i>	<i>Asclepias uncialis</i> ssp. <i>uncialis</i>	<i>Aletes humilis</i>
<i>Astragalus osterhoutii</i>	<i>Aliciella sedifolia</i>	<i>Cleome multicaulis</i>	<i>Aletes nuttallii</i>
<i>Astragalus tortipes</i>	<i>Astragalus lonchocarpus</i> var. <i>hamiltonii</i>	<i>Delphinium ramosum</i> var. <i>alpestre</i>	<i>Aquilegia saximontana</i>
<i>Botrychium lineare</i>	<i>Astragalus microcymbus</i>	<i>Delphinium robustum</i>	<i>Astragalus sparsiflorus</i>
<i>Eriogonum pelinophilum</i>	<i>Astragalus schmolliae</i>	<i>Draba exungiculata</i>	<i>Bolophyta alpina</i>
<i>Eutrema edwardsii</i> ssp. <i>penlandii</i>	<i>Cirsium scapanolepis</i>	<i>Draba grayana</i>	<i>Carex oreocharis</i>
<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>	<i>Corispermum navicula</i>	<i>Draba smithii</i>	<i>Draba crassa</i>
<i>Ipomopsis polyantha</i>	<i>Cryptantha gypsophila</i>	<i>Grindelia inornata</i>	<i>Draba globosa</i>
<i>Lesquerella congesta</i>	<i>Draba weberi</i>	<i>Herrickia horrida</i>	<i>Draba streptobrachia</i>
<i>Pediocactus knowltonii</i>	<i>Erigeron wilkenii</i>	<i>Lesquerella calcicola</i>	<i>Eriogonum exilifolium</i>
<i>Penstemon debilis</i>	<i>Eriogonum brandegeei</i>	<i>Nuttallia chrysantha</i>	<i>Heuchera hallii</i>
<i>Penstemon grahamii</i>	<i>Hackelia gracilentia</i>	<i>Nuttallia densa</i>	<i>Nuttallia sinuata</i>
<i>Penstemon penlandii</i>	<i>Lygodesmia doloresensis</i>	<i>Oenothera harringtonii</i>	<i>Nuttallia speciosa</i>
<i>Penstemon scariosus</i> var. <i>albifluvis</i>	<i>Mimulus gemmiparus</i>	<i>Oonopsis foliosa</i> var. <i>monocephala</i>	<i>Oonopsis wardii</i>
<i>Phacelia formosula</i>	<i>Oreoxis humilis</i>	<i>Oonopsis puebloensis</i>	<i>Phacelia denticulata</i>
<i>Phacelia submutica</i>	<i>Penstemon gibbensii</i>	<i>Oxybaphus rotundifolius</i>	<i>Physaria bellii</i>
<i>Physaria obcordata</i>	<i>Physaria pulvinata</i>	<i>Penstemon degeneri</i>	<i>Potentilla ambigens</i>
<i>Sclerocactus glaucus</i>		<i>Ptilagrostis porteri</i>	<i>Potentilla rupincola</i>
<i>Sclerocactus mesae-verdae</i>		<i>Telesonix jamesii</i>	<i>Sisyrinchium pallidum</i>
<i>Spiranthes diluvialis</i>			

2004
1st Annual Rare Plant
Symposium
T & E Species
of
Colorado

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, 2 historical
- Colorado individuals: 25,000
- Primary threats: mineral, oil, and gas development, seismic exploration
- Land ownership/management: Ute Mountain Ute

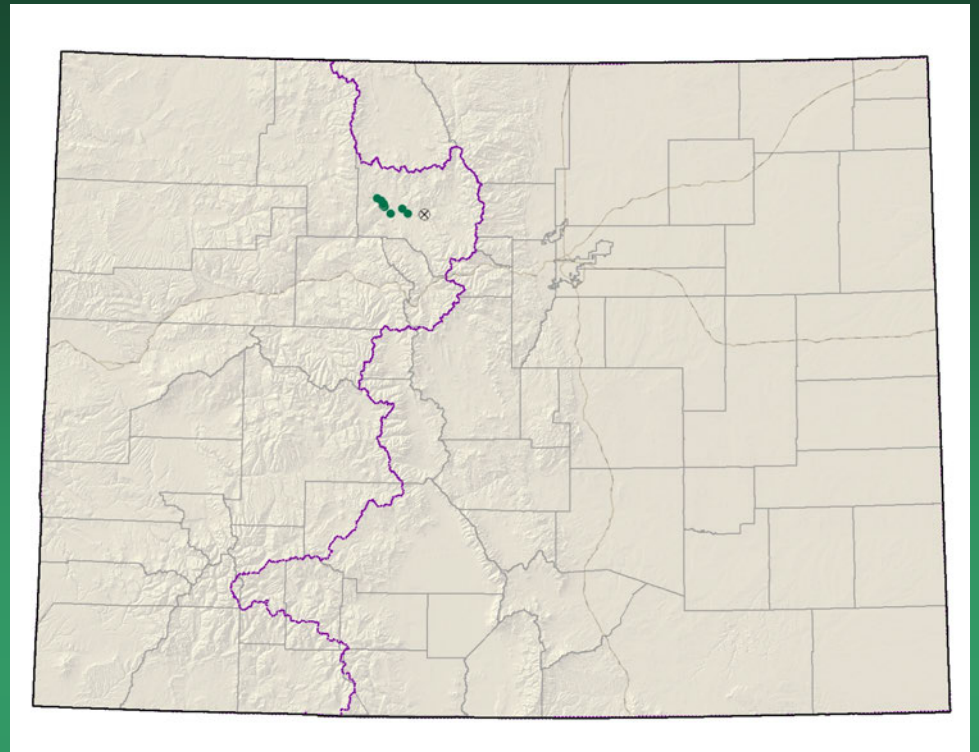


Astragalus humillimus



Astragalus osterhoutii

Osterhout milkvetch



- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2005
- Occurrences: 6, 1 historical
- Individuals: 25,000-50,000
- Primary threats: recreation, mining, oil and gas development
- Land ownership/management: BLM, private, state

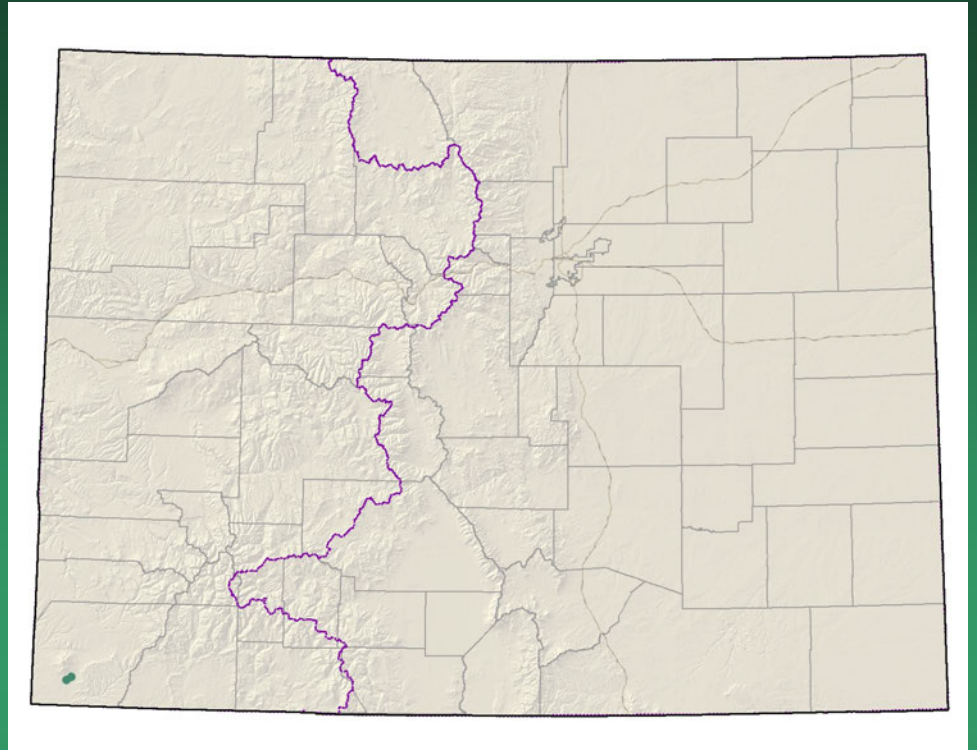
Astragalus osterhoutii



Astragalus tortipes

Sleeping Ute milkvetch

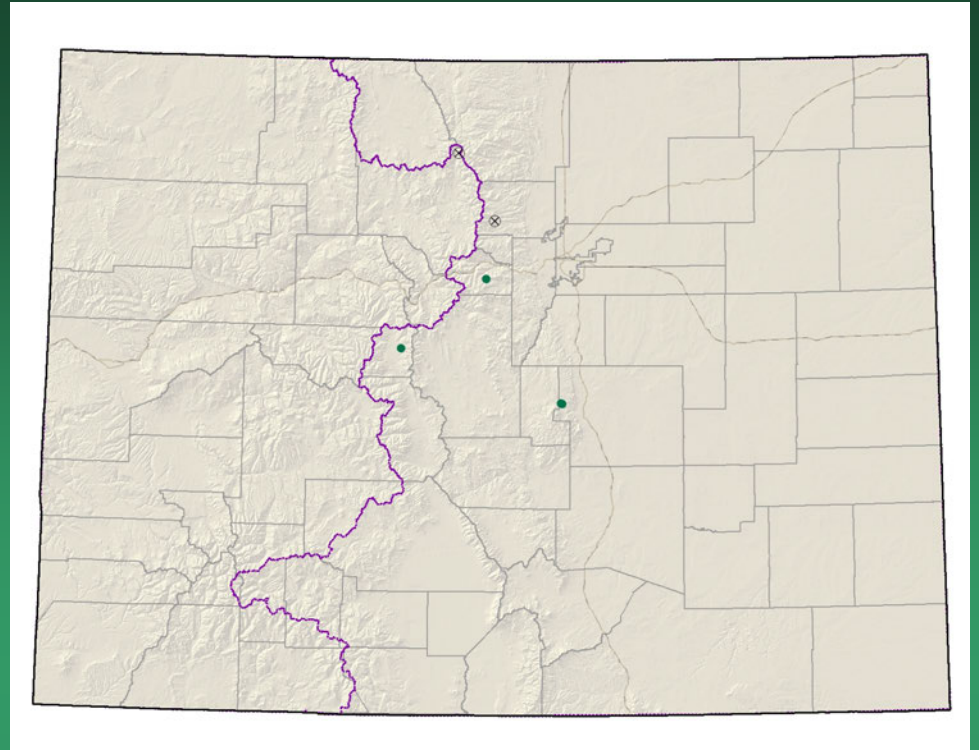
- Federal status: Candidate
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2000
- Occurrences: 2
- Individuals: 2,000-3,000
- Primary threats: McPhee Reservoir canals, agricultural development
- Land ownership/management: Ute Mountain Ute



Astragalus tortipes



Botrychium lineare Narrowleaf grapefern



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

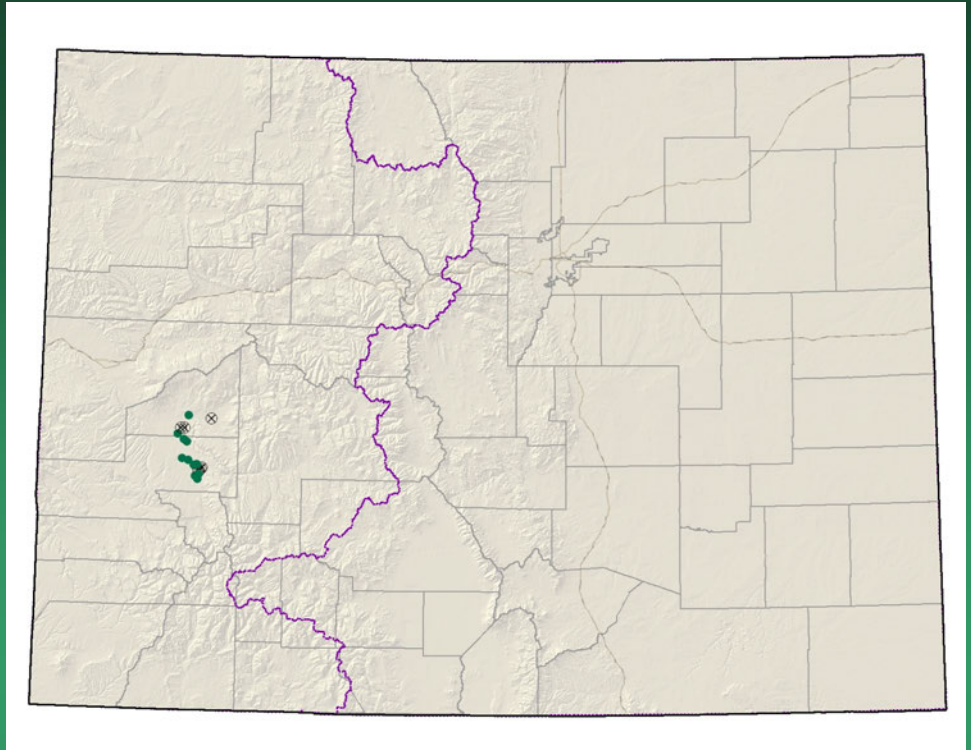
Botrychium lineare



Eriogonum pelinophilum

Clay-loving wild buckwheat

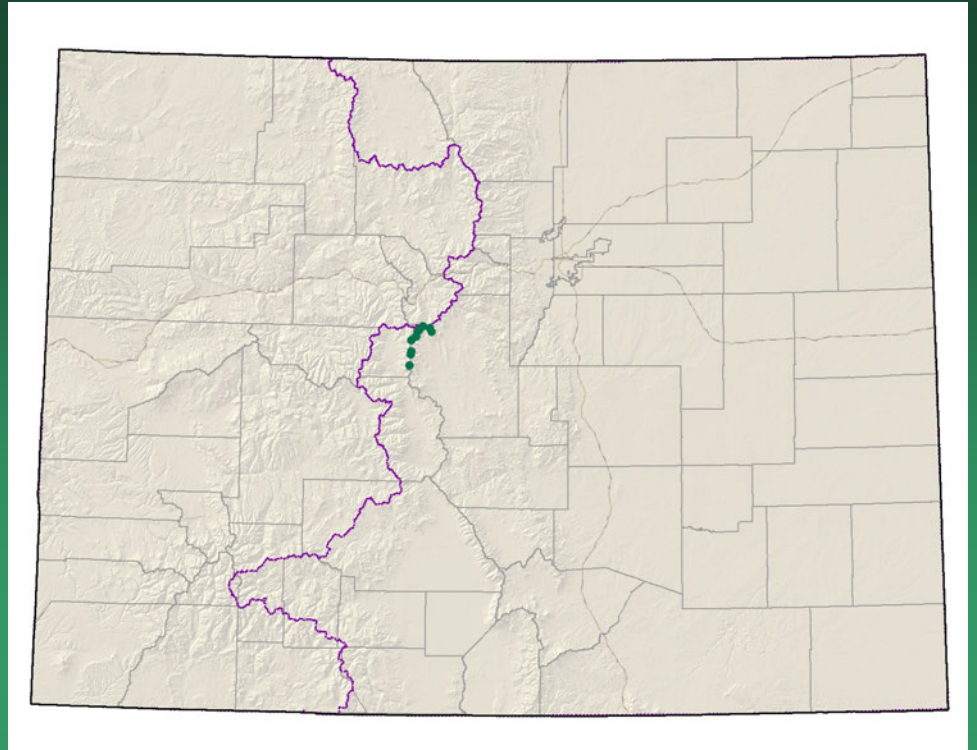
- Federal status: Endangered
- Heritage ranks: G2/S2
- Global distribution: Colorado endemic
- Last observed: 2007
- occurrences: 19, 7 historical
- Individuals: 30,000
- Primary threats: residential and agricultural developments, ORV use, overgrazing, oil and gas exploration
- Land ownership/management: private, BLM
Waker property purchased



Eriogonum pelinophilum



Eutrema penlandii
Penland alpine fen
mustard



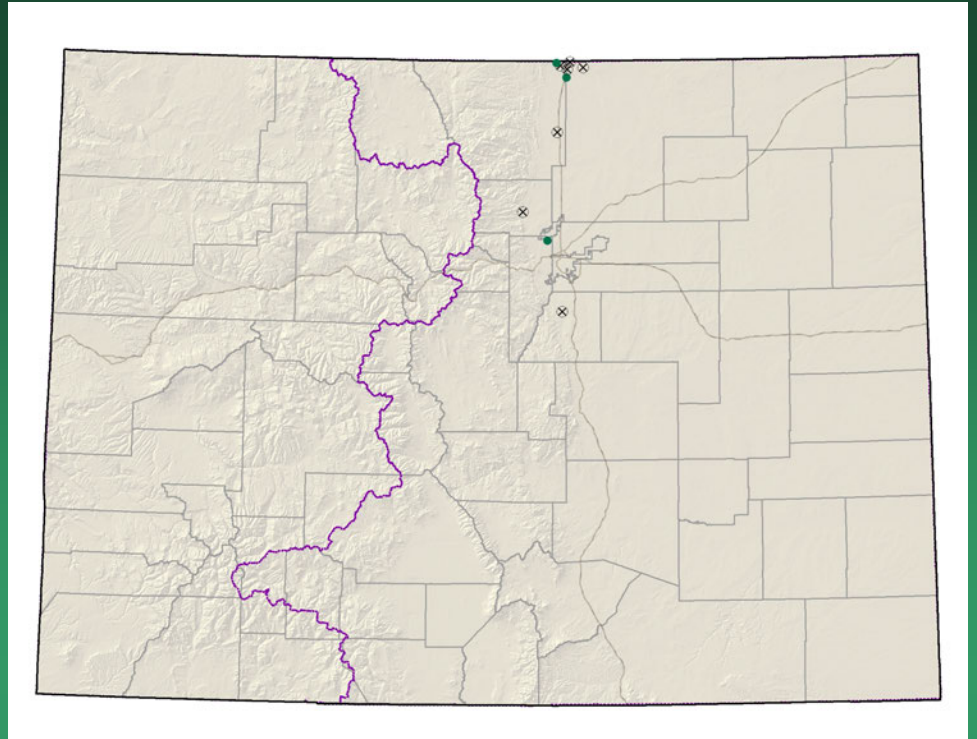
- Federal status: Endangered
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic
- Last observed: 2006
- Occurrences: 10
- Individuals: 10,000-12,000
- Primary threats: mining, recreation
- Land ownership/management: private, USFS, BLM

Eutrema penlandii



Oenothera neomexicana
ssp. coloradensis
Colorado butterfly plant

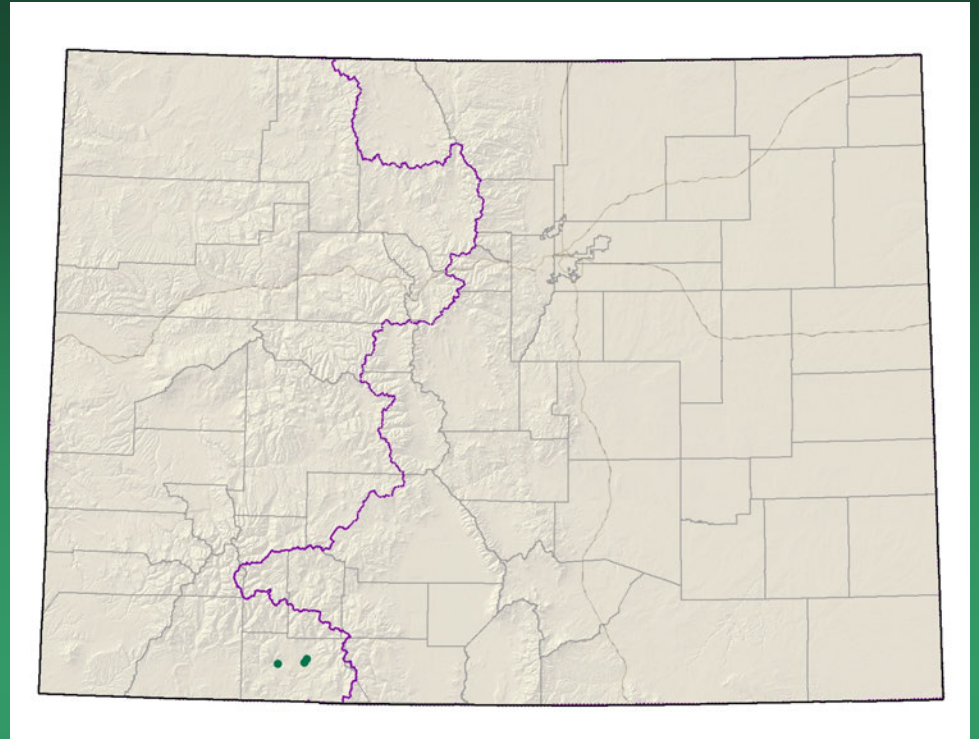
- Federal status: Threatened
- Heritage ranks: G3T2/S1
- Global distribution: Wyoming, Nebraska, and Colorado
- Last observed in Colorado: 2006 or later
- Colorado occurrences: 3 (plus 7 historical)
- Colorado individuals: 11,000
- Primary threats: grazing, hydrological alterations, weeds, Interstate 25
- Land ownership: City of Fort Collins, private, state





Gaura neomexicana ssp. *coloradensis*

Ipomopsis polyantha *Pagosa gilia*



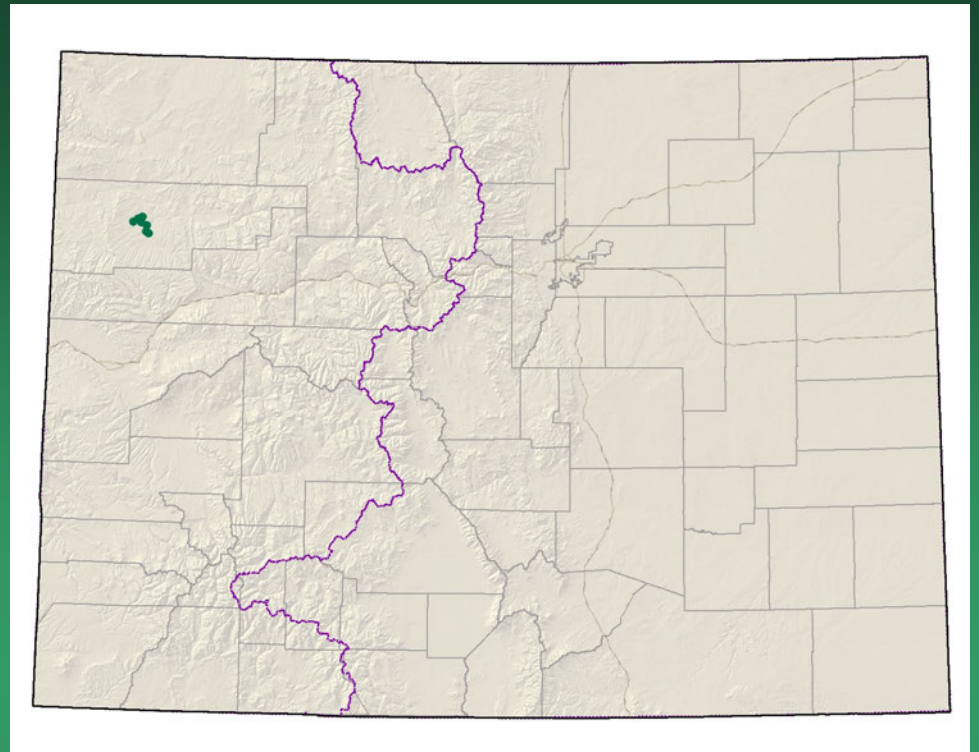
- Federal status: Candidate
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2008
- Individuals: 10,000
- Occurrences: 3
- Primary threats: residential development, road construction and maintenance, overgrazing
- Land ownership/management: private, highway right of way

Ipomopsis polyantha



Lesquerella congesta

Dudley Bluffs bladderpod



- Federal status: Threatened
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2007
- 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



Pediocactus knowltonii

Knowlton's cactus

GIS analysis determined that the species did not actually occur in Colorado, and there was an erroneous report further north

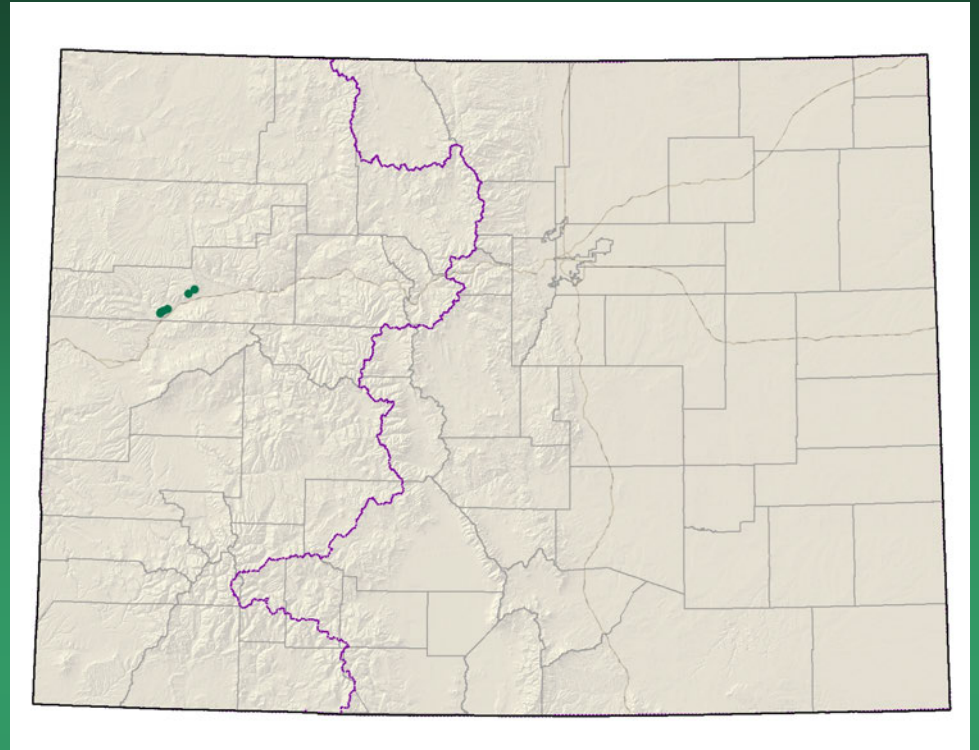
- Federal status: Endangered
- Heritage ranks: G1/**SNA**
- Global distribution: New Mexico
- Last observed in Colorado:
- Colorado occurrences: **0**
- Individuals: 9,000 in NM
- Primary threats: cactus collection
- Land ownership: private, Ute



Pediocactus knowltonii



Penstemon debilis
Parachute penstemon



- Federal status: Candidate
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2008
- Occurrences: 6
- 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



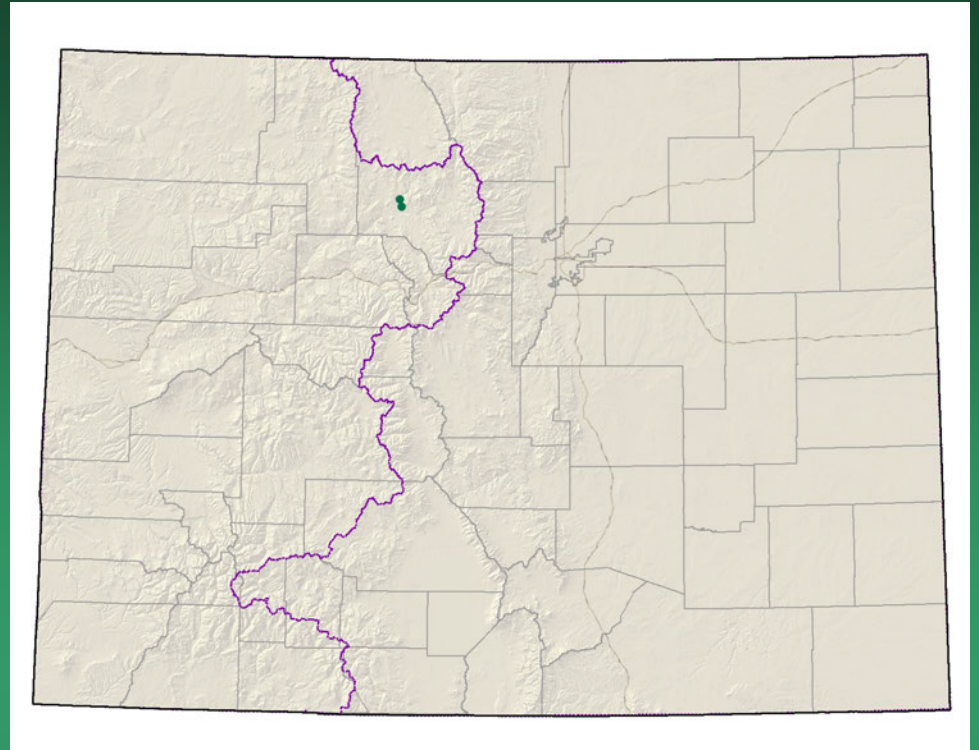
- Federal status: Removed from candidate list
- Heritage ranks: G2/S1
- Global distribution: Utah and Colorado (Rio Blanco County)
- Last observed in Colorado: 2003
- Colorado occurrences: 5 (3 are historical)
- Colorado individuals: 5,000
- Primary threats: oil and gas development, overgrazing
- Land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

Penstemon grahamii



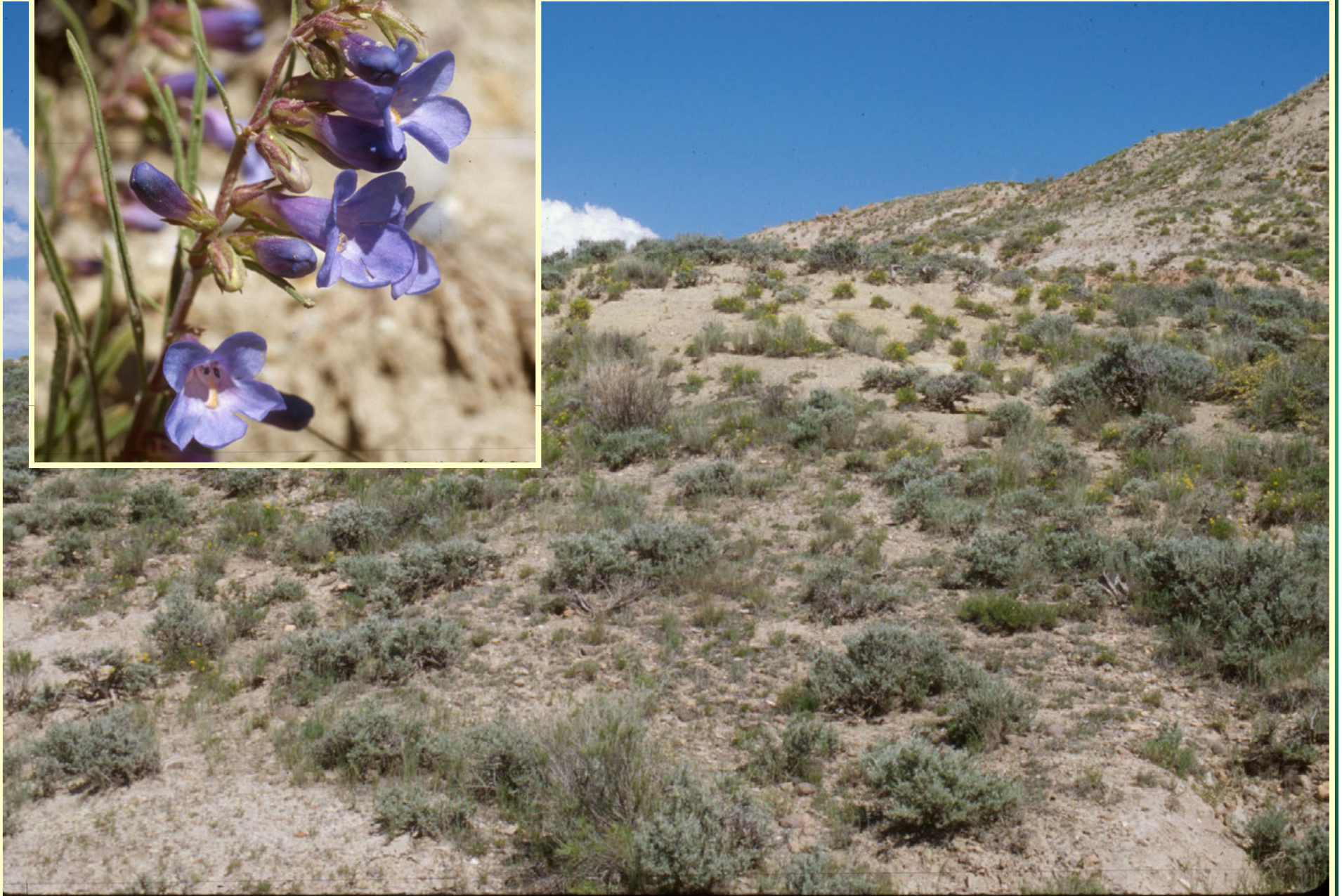
Penstemon penlandii

Penland beardtongue

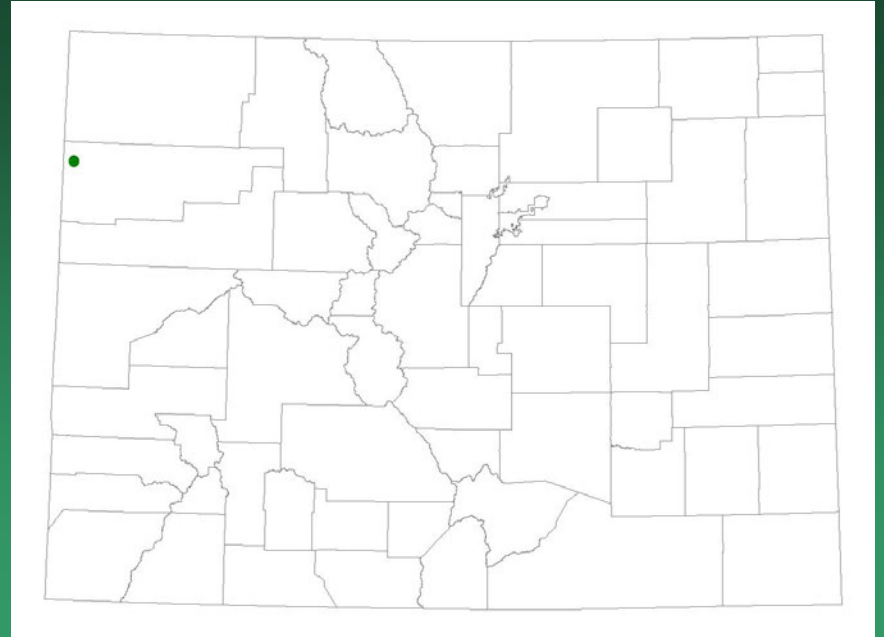


- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2005
- Occurrences: 2
- Individuals: 5,000-8,000
- Primary threats: road maintenance (grading, spraying, snow plowing), ORV use
- Land ownership/management: BLM, private

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

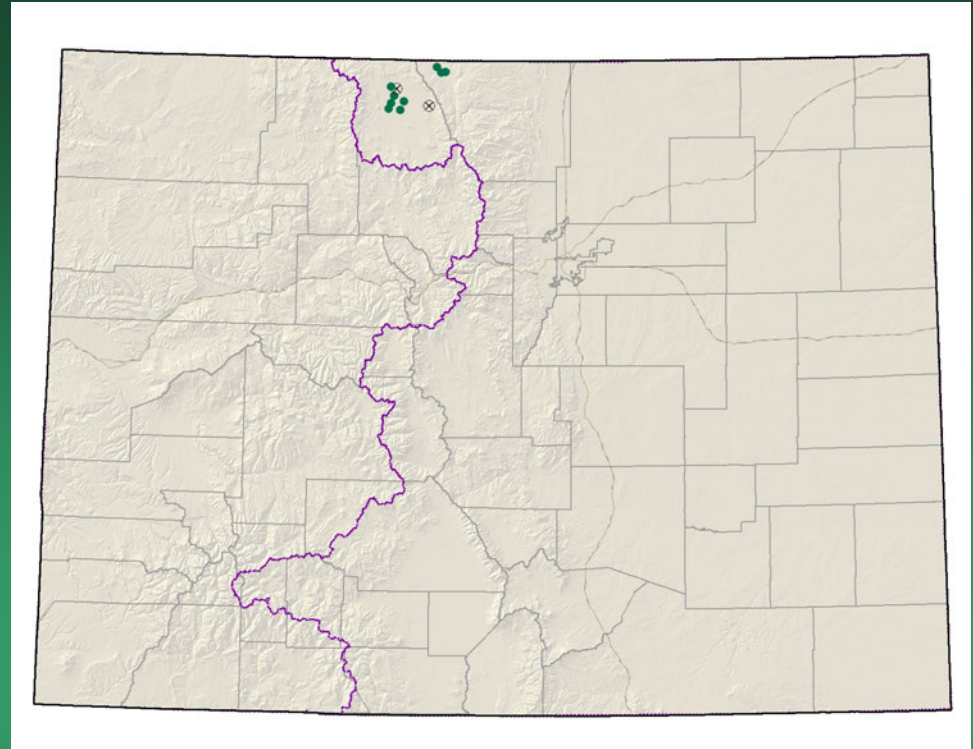


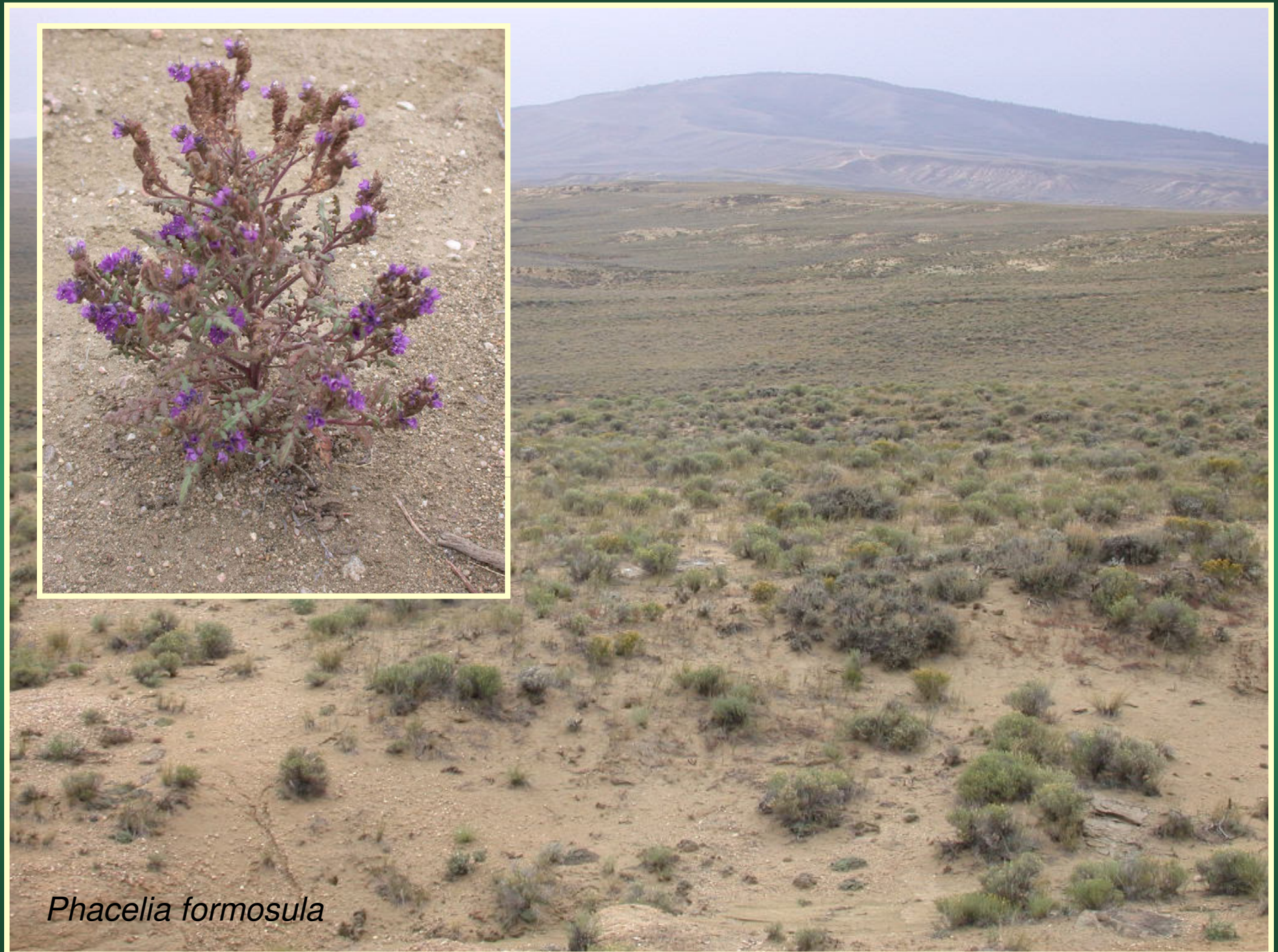
Penstemon scariousus var. *albifluvis*

Phacelia formosula

North Park phacelia

- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2005
- 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: 2007
- Occurrences: 35 (14 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: 2007
- 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

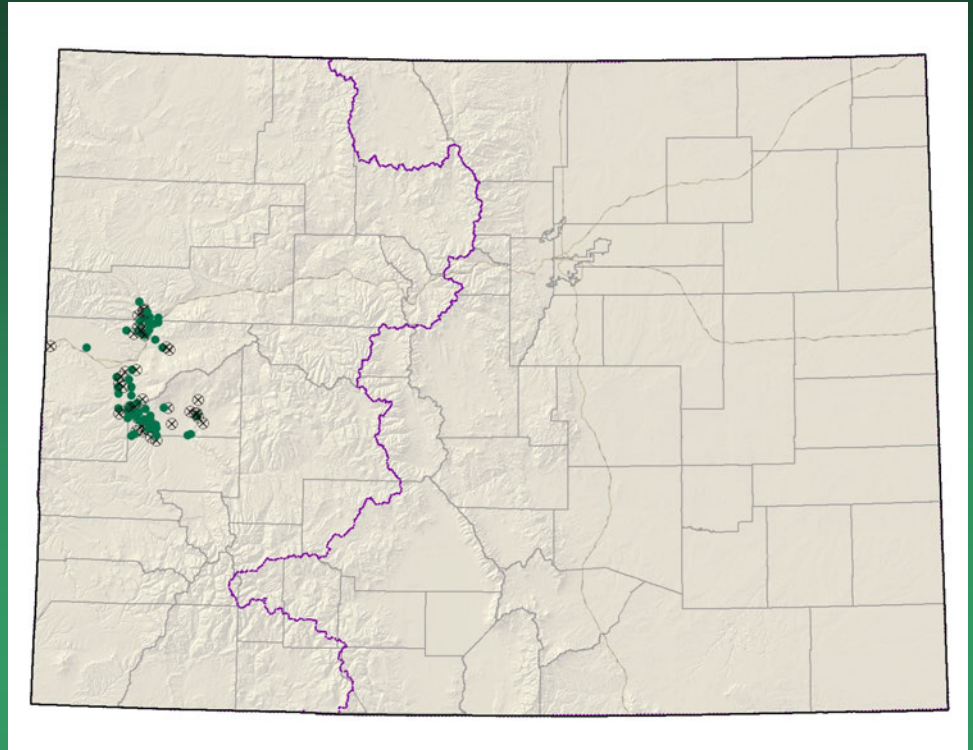


Physaria obcordata



Sclerocactus glaucus

Colorado hookless cactus



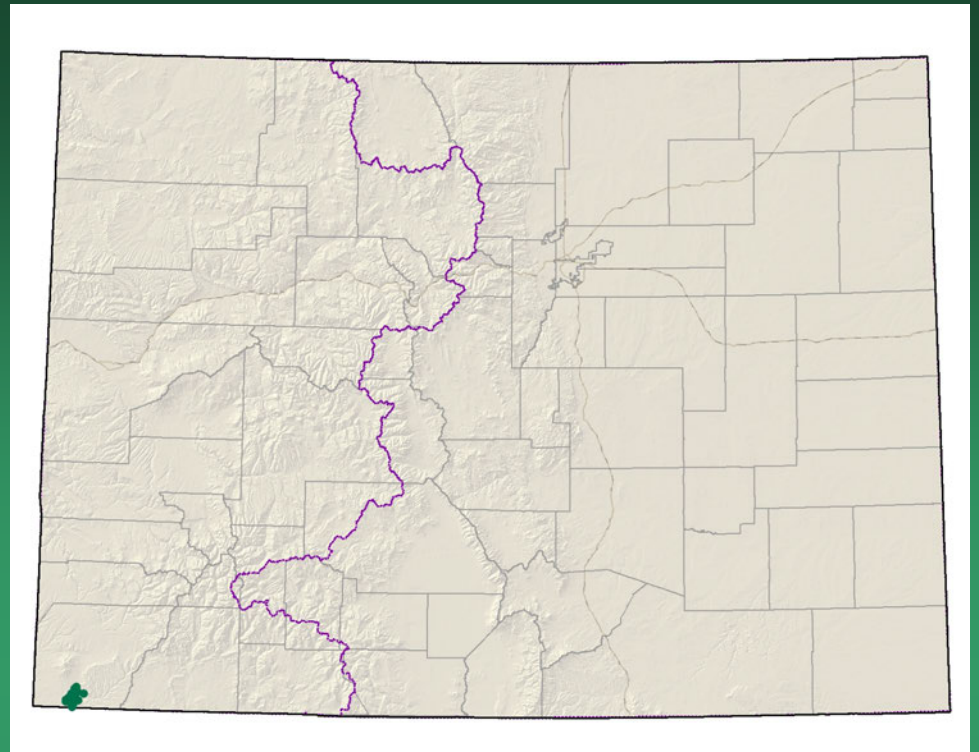
- Federal status: Threatened
- Heritage ranks: G3/S3
- Global distribution: Colorado
- Last observed in Colorado: 2007
- Colorado occurrences: 98 (44 are historical)
- Colorado individuals: 7600
- Primary threats: oil and gas development, residential development, cactus collecting
- Land ownership/management: BLM, state, private



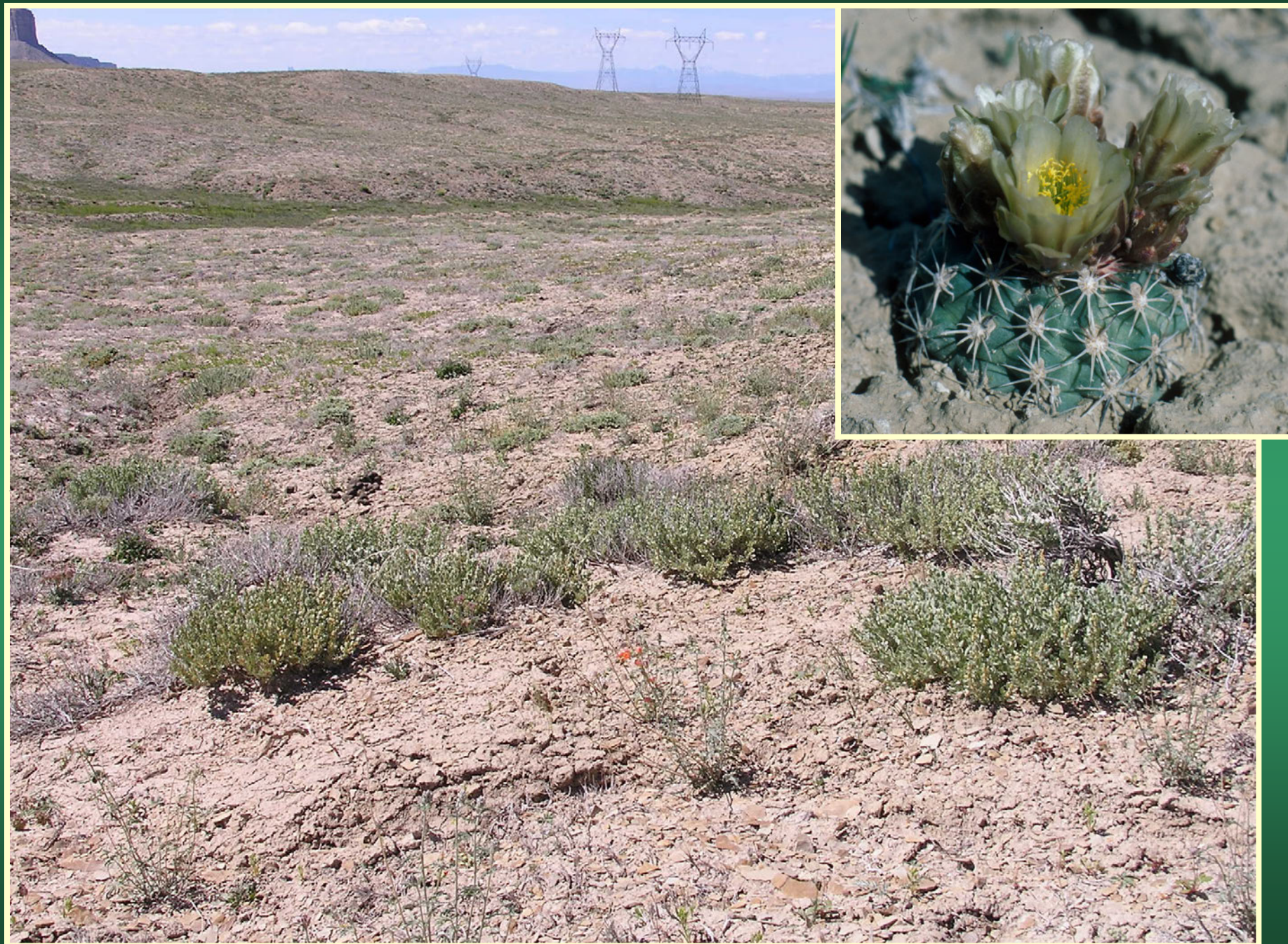
Sclerocactus glaucus

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: 23 – 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

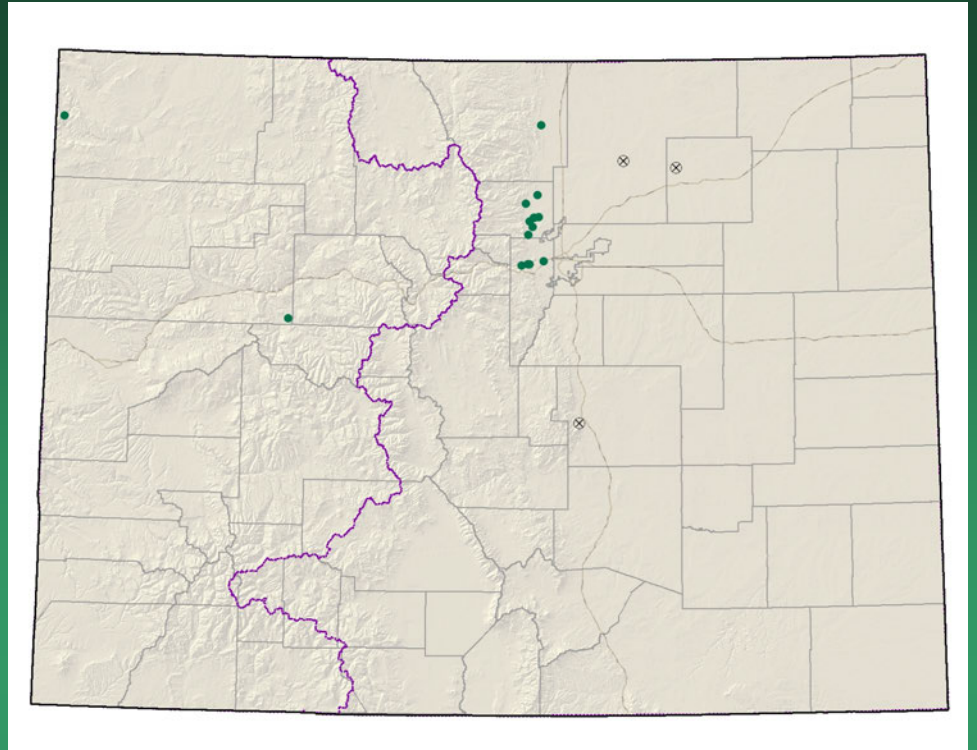


Sclerocactus mesae-verdae

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: 2007
- Colorado occurrences: 18 (3 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



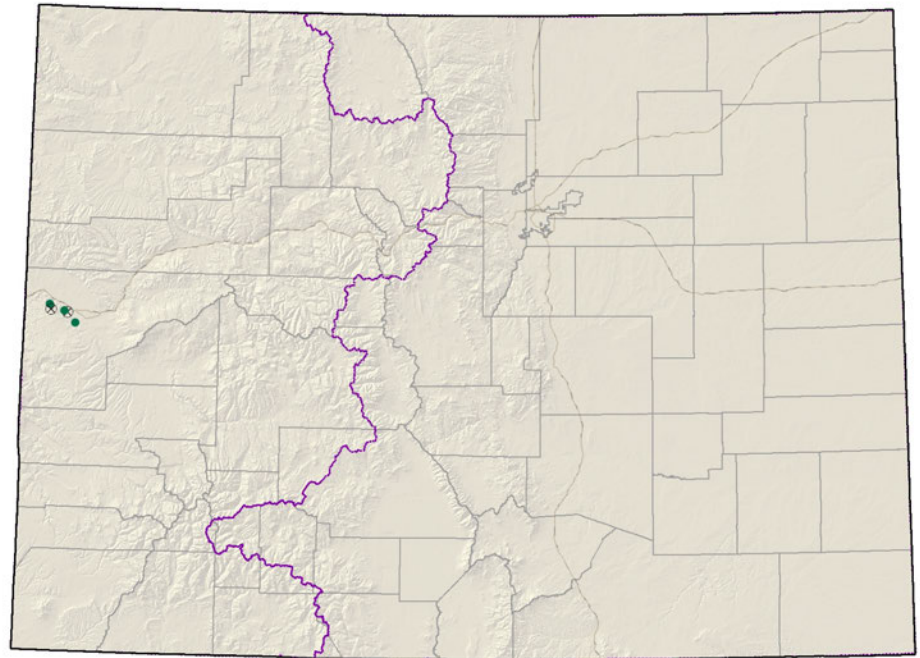
Spiranthes diluvialis



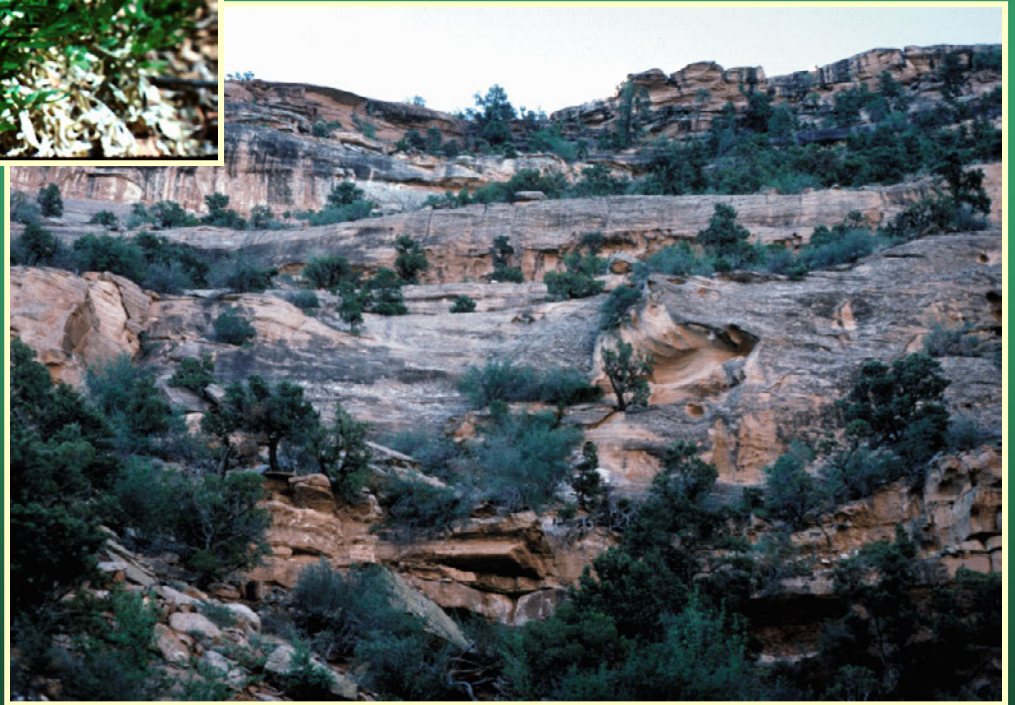
2005
2nd Annual Rare Plant
Symposium
G1 Species
of
Colorado

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: Five (3 known extant, 2 from herbarium records)
- 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

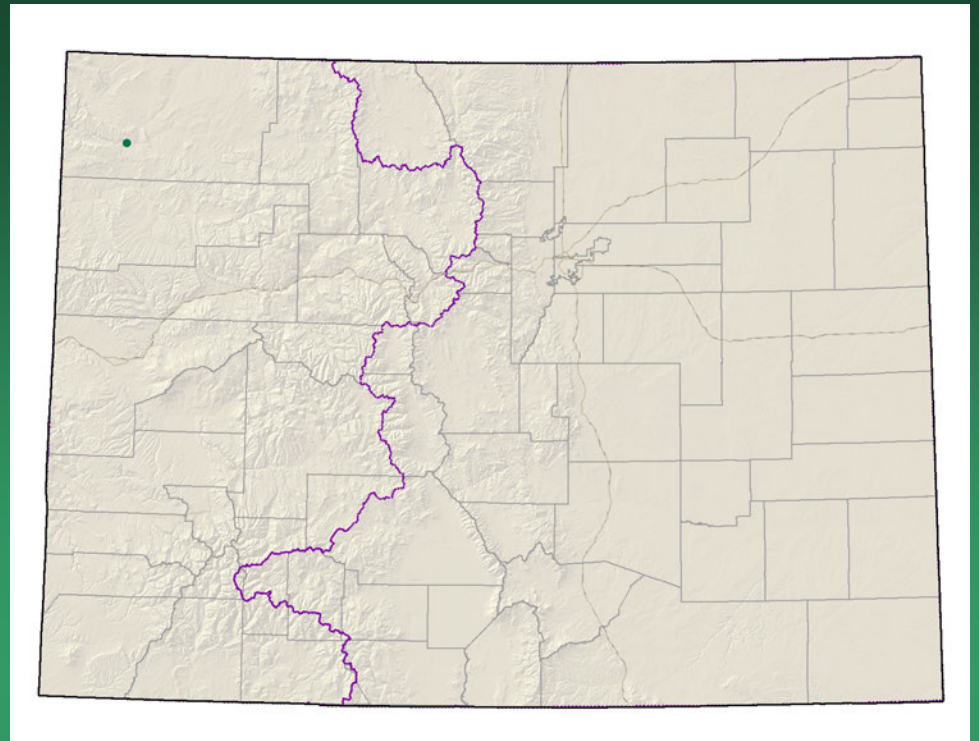
- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, San Juan Mountains, Hinsdale County
- Last observed: 2007
- Occurrences: 2
- Individuals: 1,100
- Primary threats: non-motorized recreation
- Land ownership/management: Gunnison and possibly San Juan National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

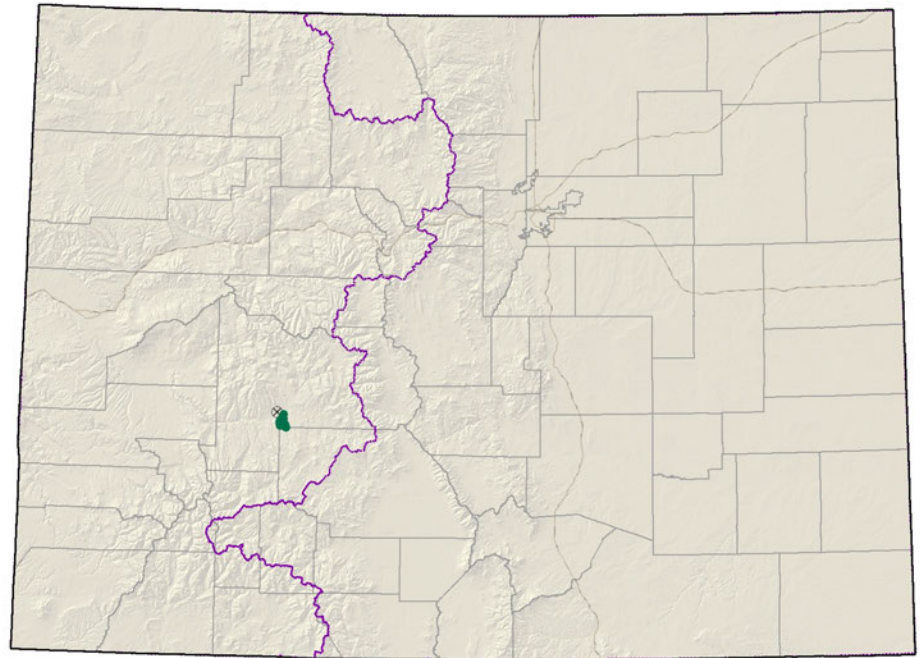
Astragalus lonchocarpus
var. *hamiltonii*



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 (monitored by DBG)
- Occurrences: 4 principal occurrences, 1 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



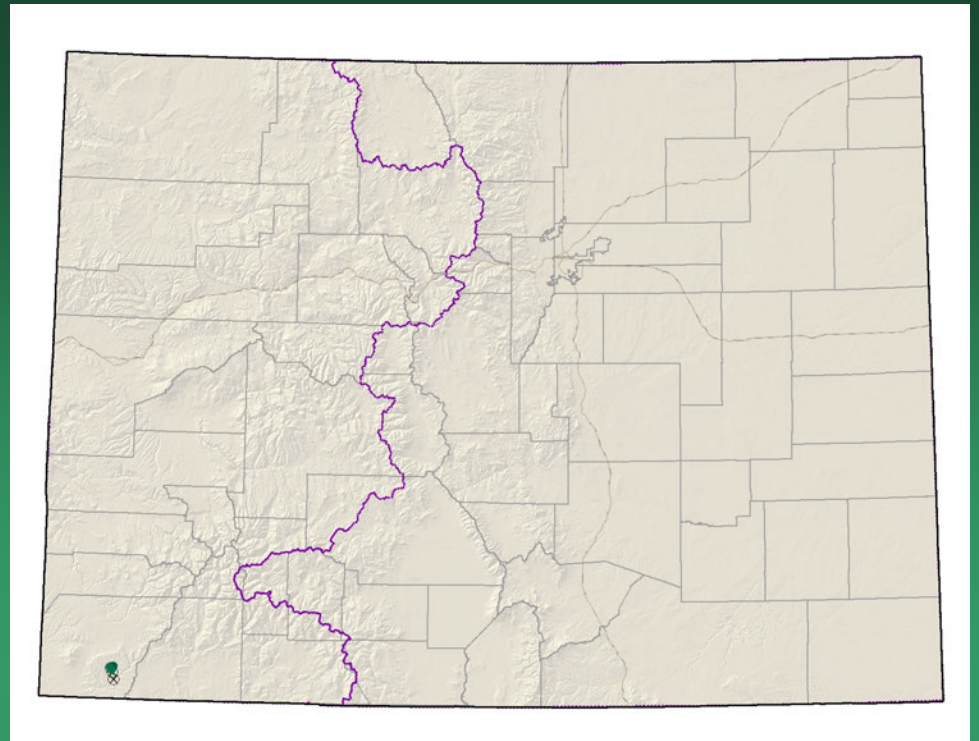
Astragalus microcymbus



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

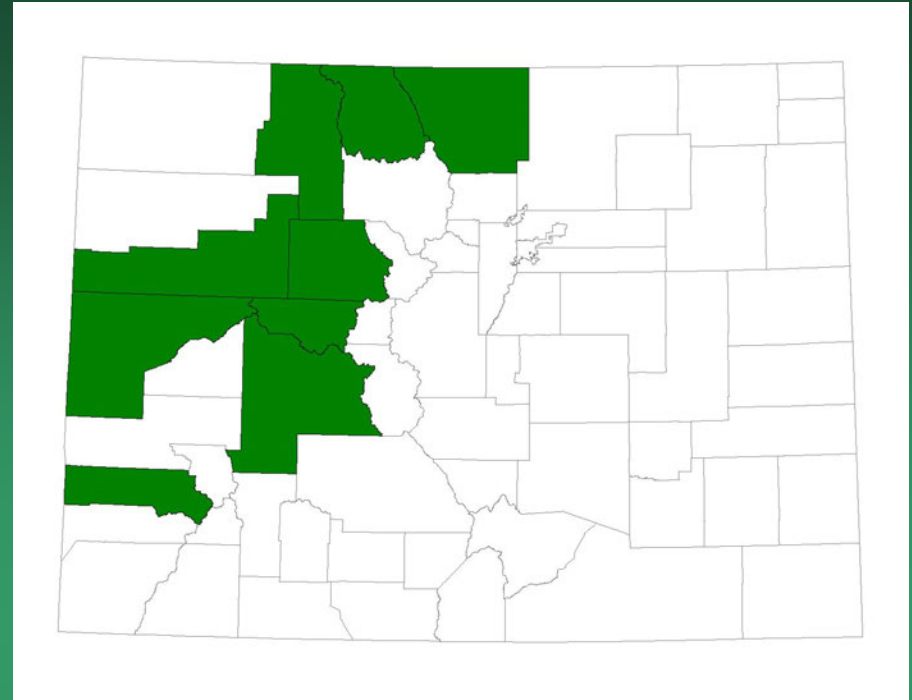


Astragalus schmollii



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, possibly Oklahoma
- Last observed: 2007
- Occurrences: 2 principal occurrences
- Individuals: common locally
- Primary threats: off-road vehicle use
- Land ownership/management: BLM, Kremmling Field Office

Corispermum navicula

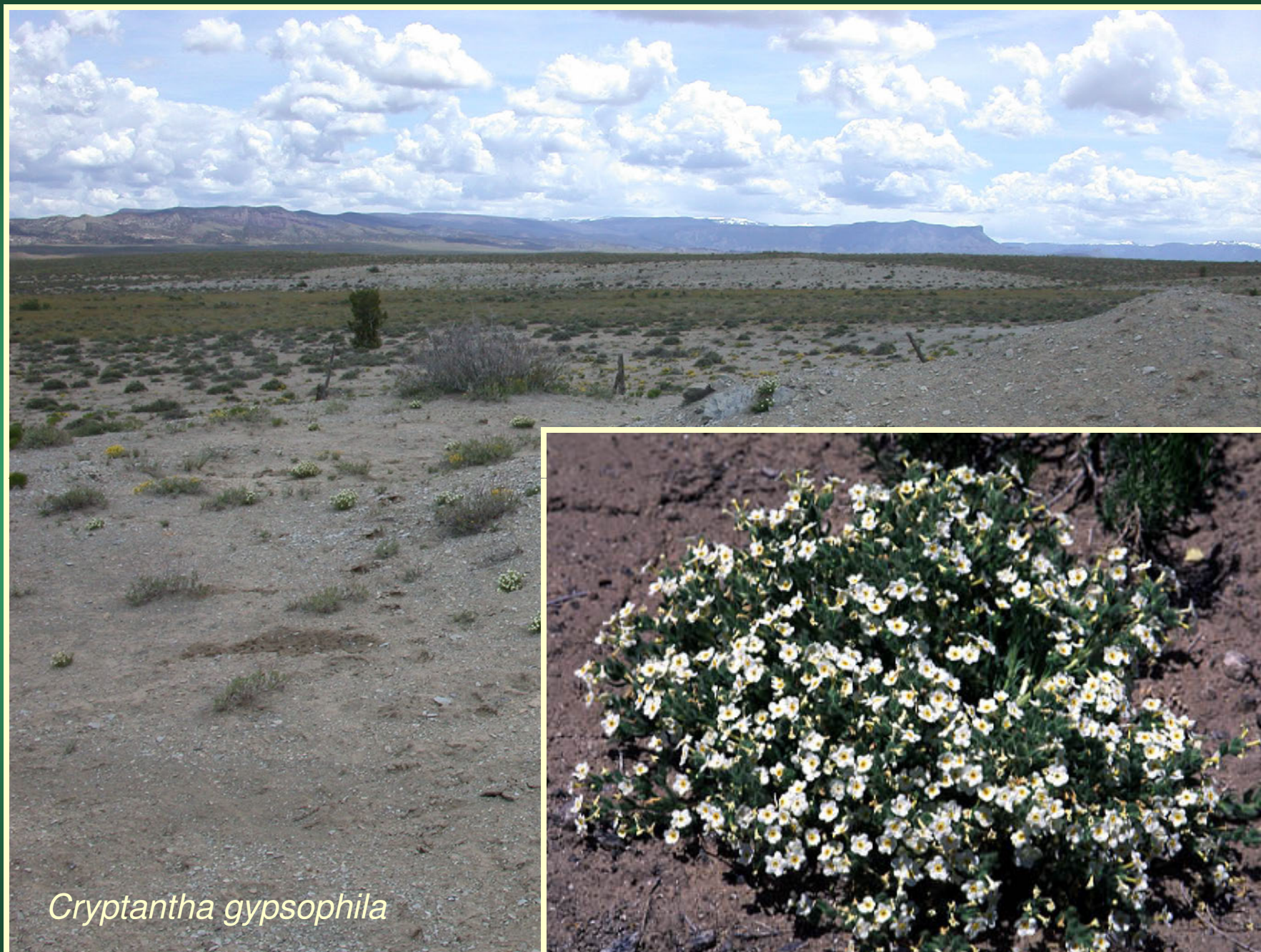


Cryptantha gypsophila

Gypsum Valley Cat-eye



- Federal status: potential candidate
- Heritage ranks: G1G2/S1S2
- S2Global distribution: Colorado endemic, Mesa, Montrose & San Miguel Counties
- Last observed: 2007
- 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: 2006
- 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



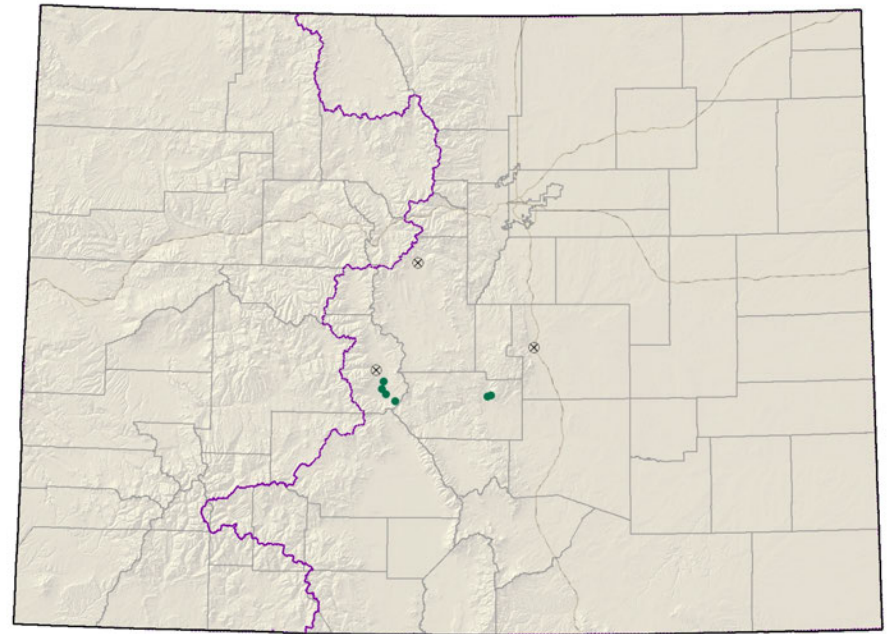
Erigeron wilkenii

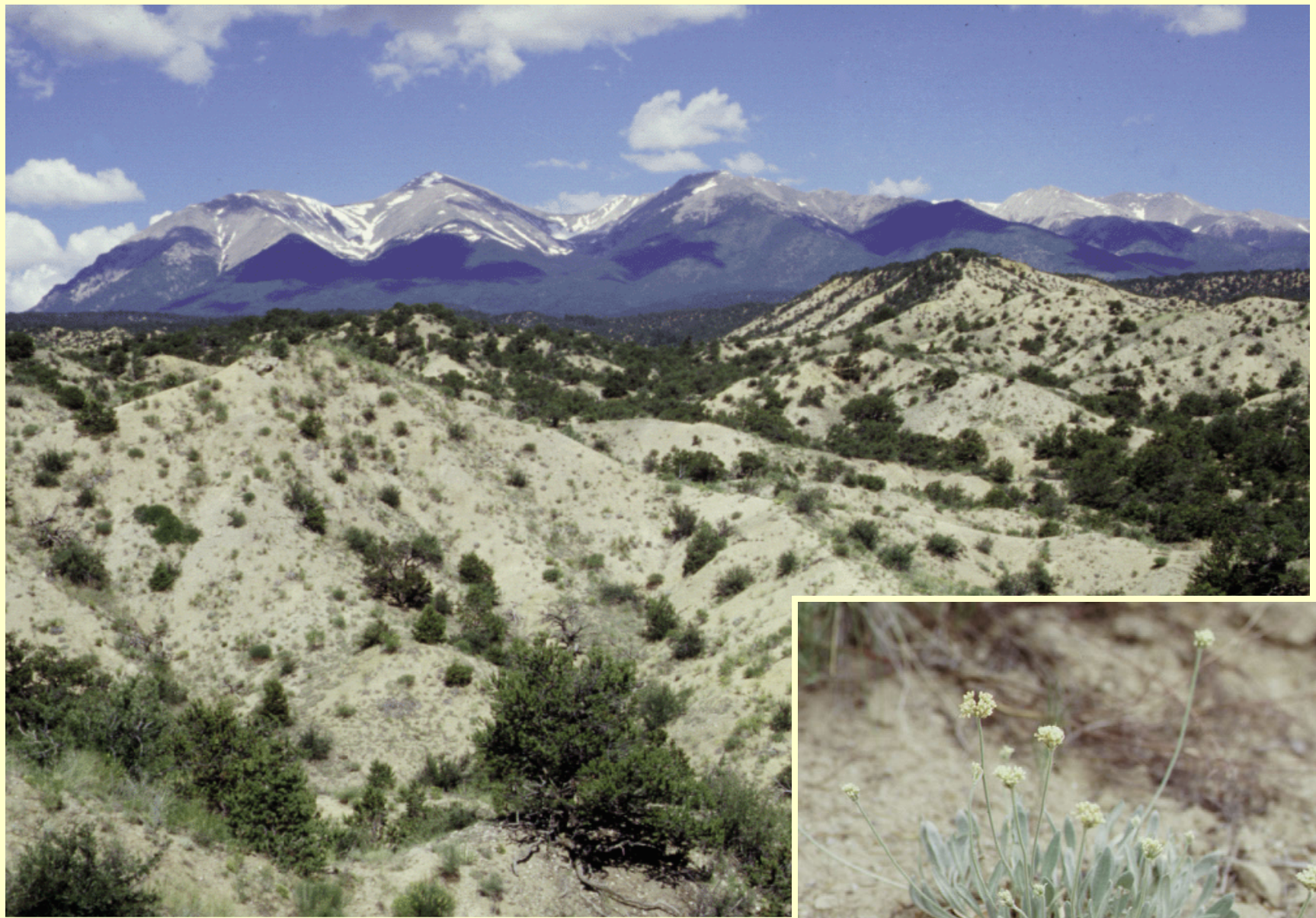


Eriogonum brandegeei

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



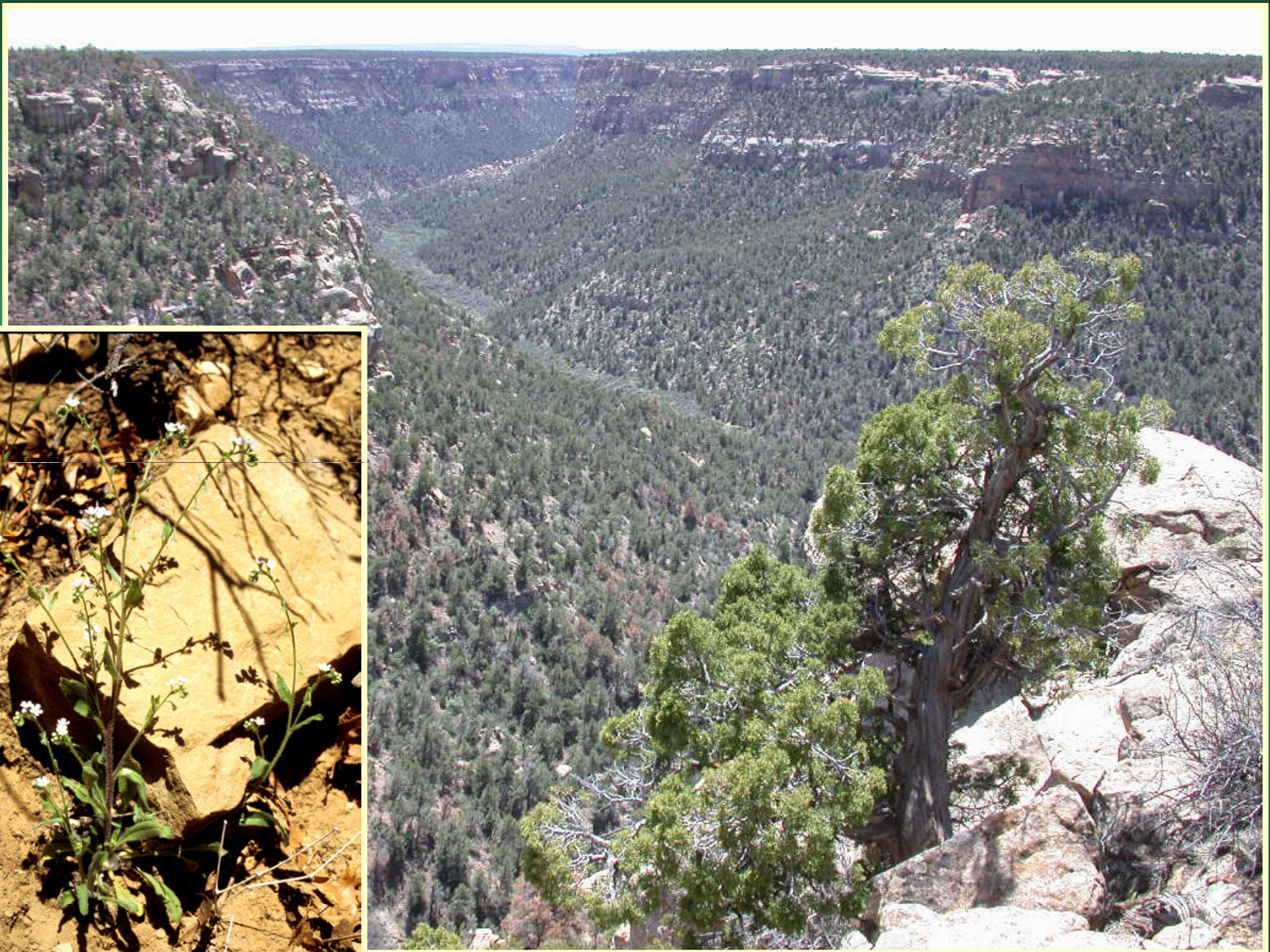
Hackelia gracilenta

Mesa Verde stickseed

- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Mesa Verde National Park, Montezuma County
- Last observed: 1997 (some not since 1980)
- 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

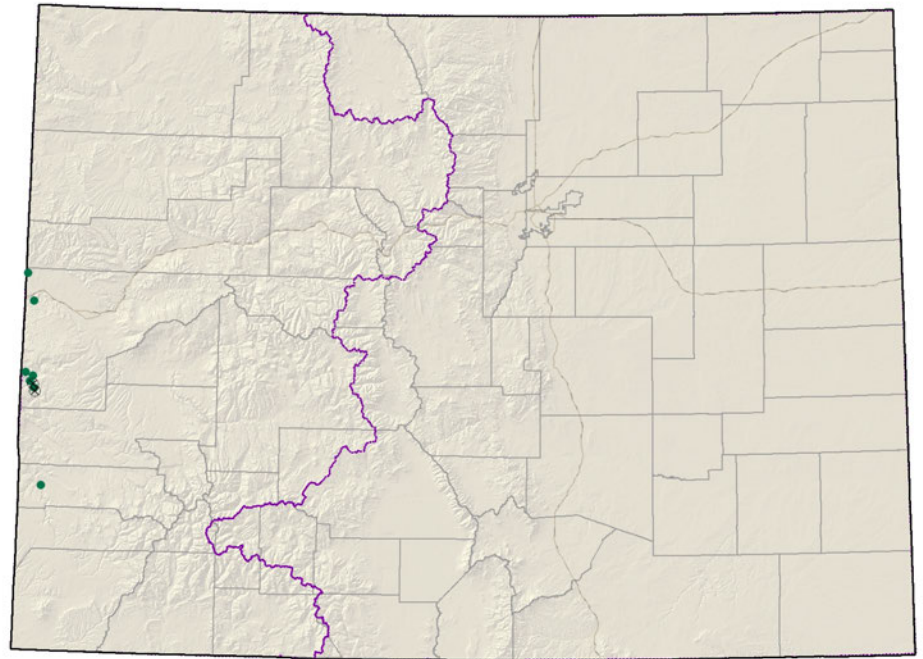


Hackelia gracilenta



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: 2007
- Colorado occurrences: 9 (2 are historical)
- Colorado individuals: 2470
- Primary threats: deer, rabbit, and cattle grazing, private land development, road maintenance, weeds
- Land ownership/management: private, BLM

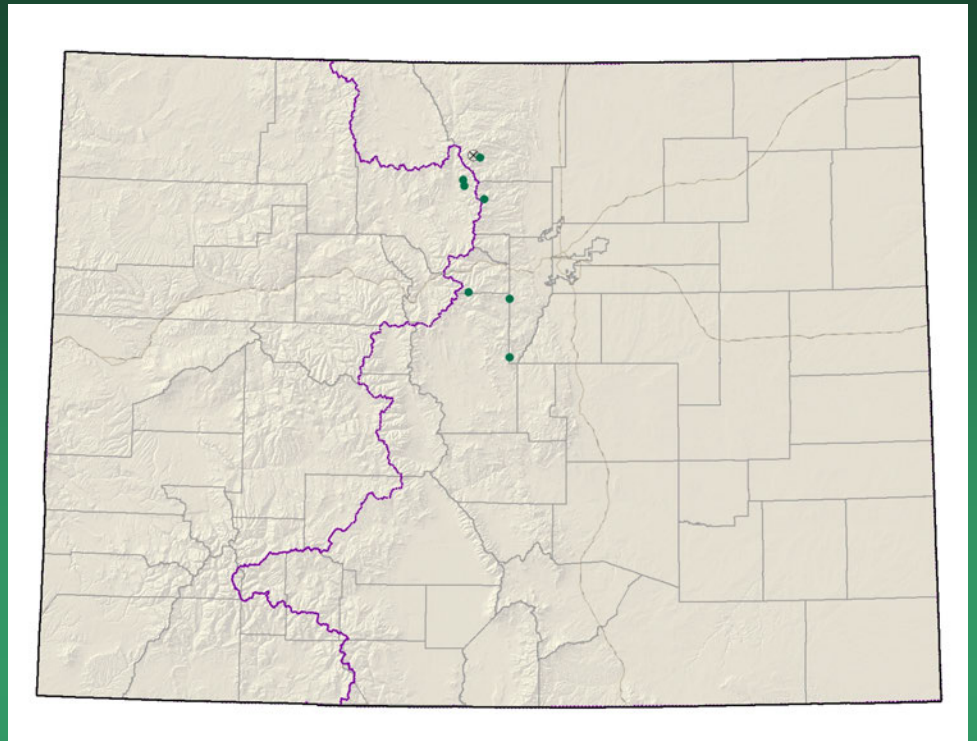


Lygodesmia doloresensis

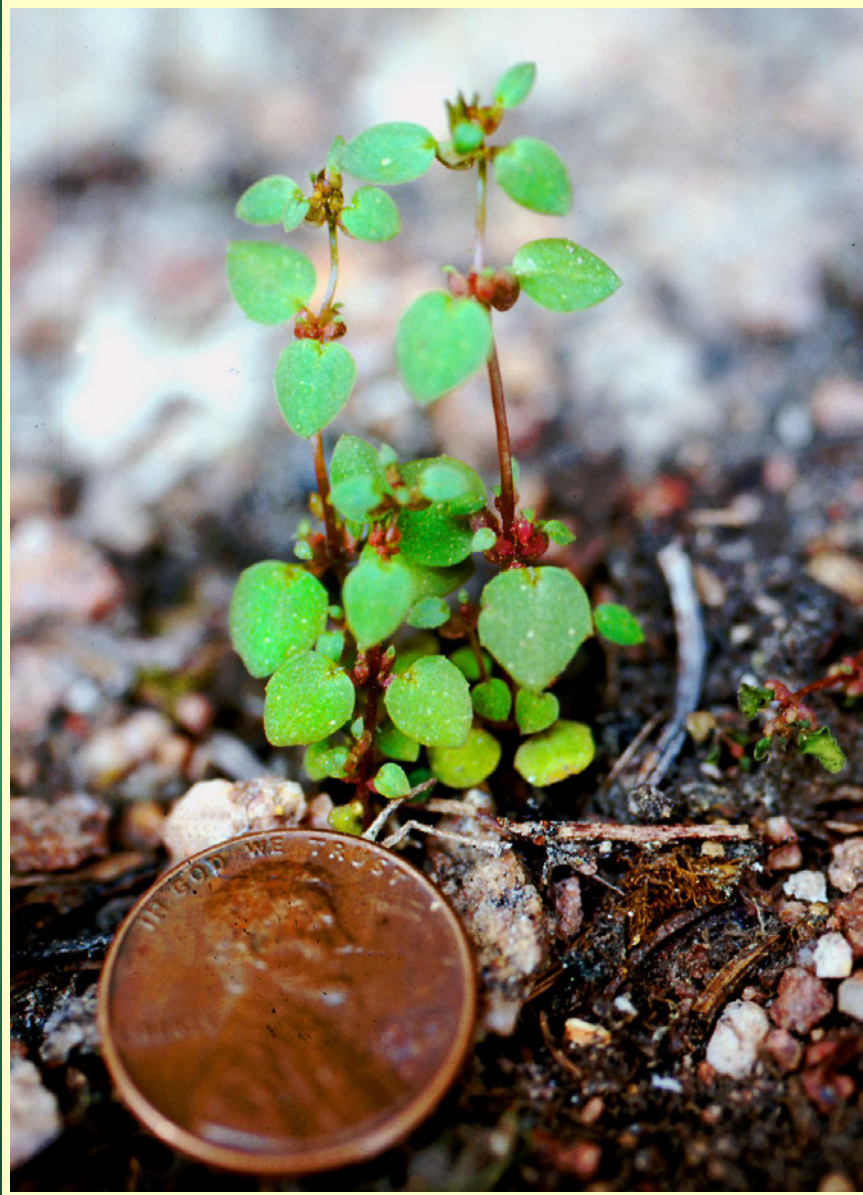
Mimulus gemmiparus

Budding monkeyflower

- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Boulder, Clear Creek, Jefferson, Grand, and Larimer counties
- Last observed: 2008
- 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: 2006
- 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



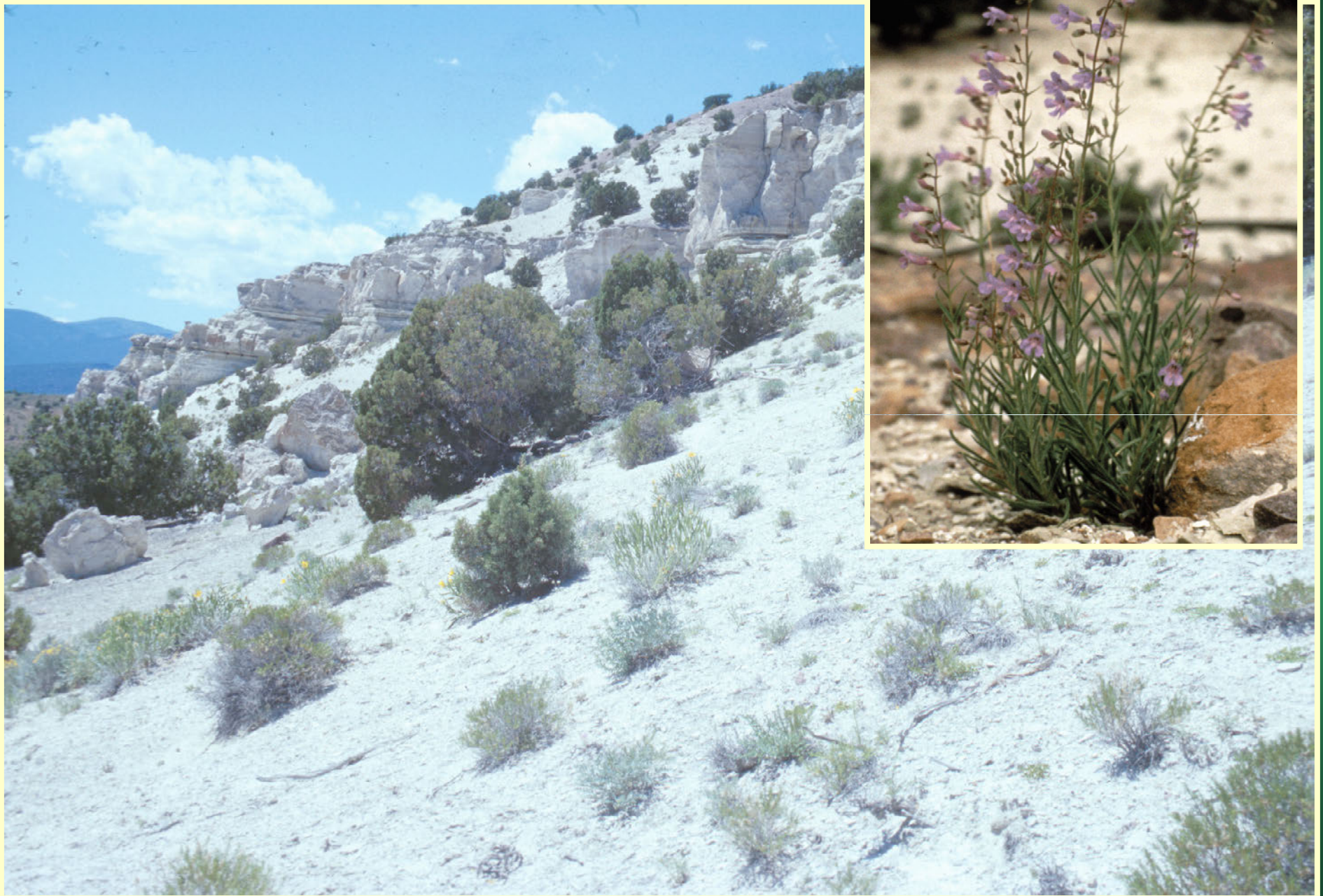
Penstemon gibbensii

Gibbens' beardtongue

- Federal status: BLM sensitive
- Heritage ranks: G1/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

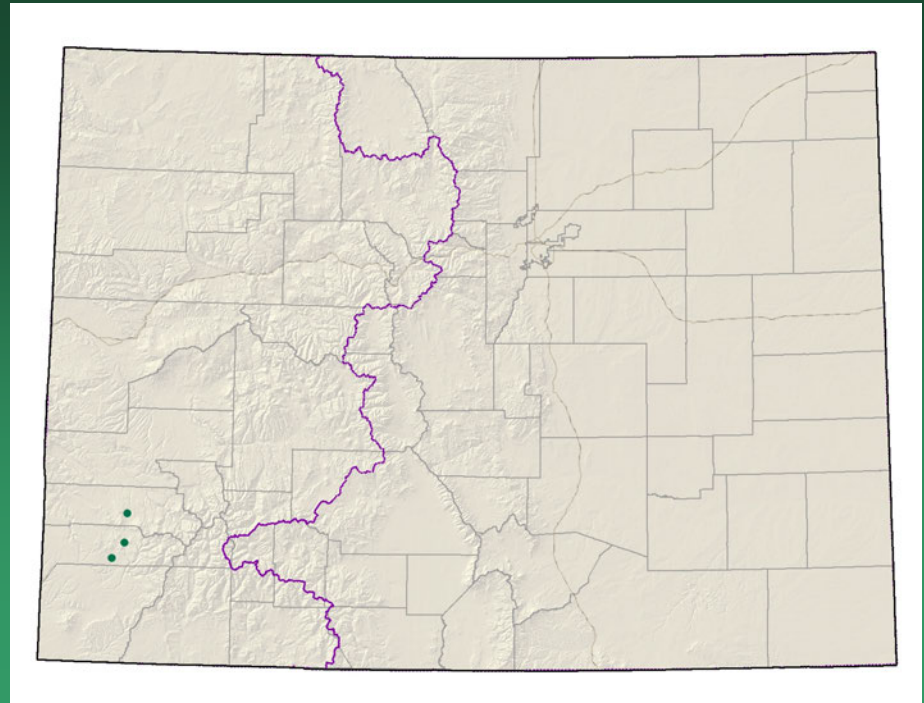


Penstemon gibbensii



Physaria pulvinata

Cushion bladderpod



- Federal status: potential candidate, USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, San Miguel and Dolores counties
- Last observed: 2007
- Occurrences: 3 locations
- 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

