

The Colorado Rare Plant Technical Committee presents:

7th Annual

Colorado Rare Plant Symposium

September 10, 2010
Denver, Colorado



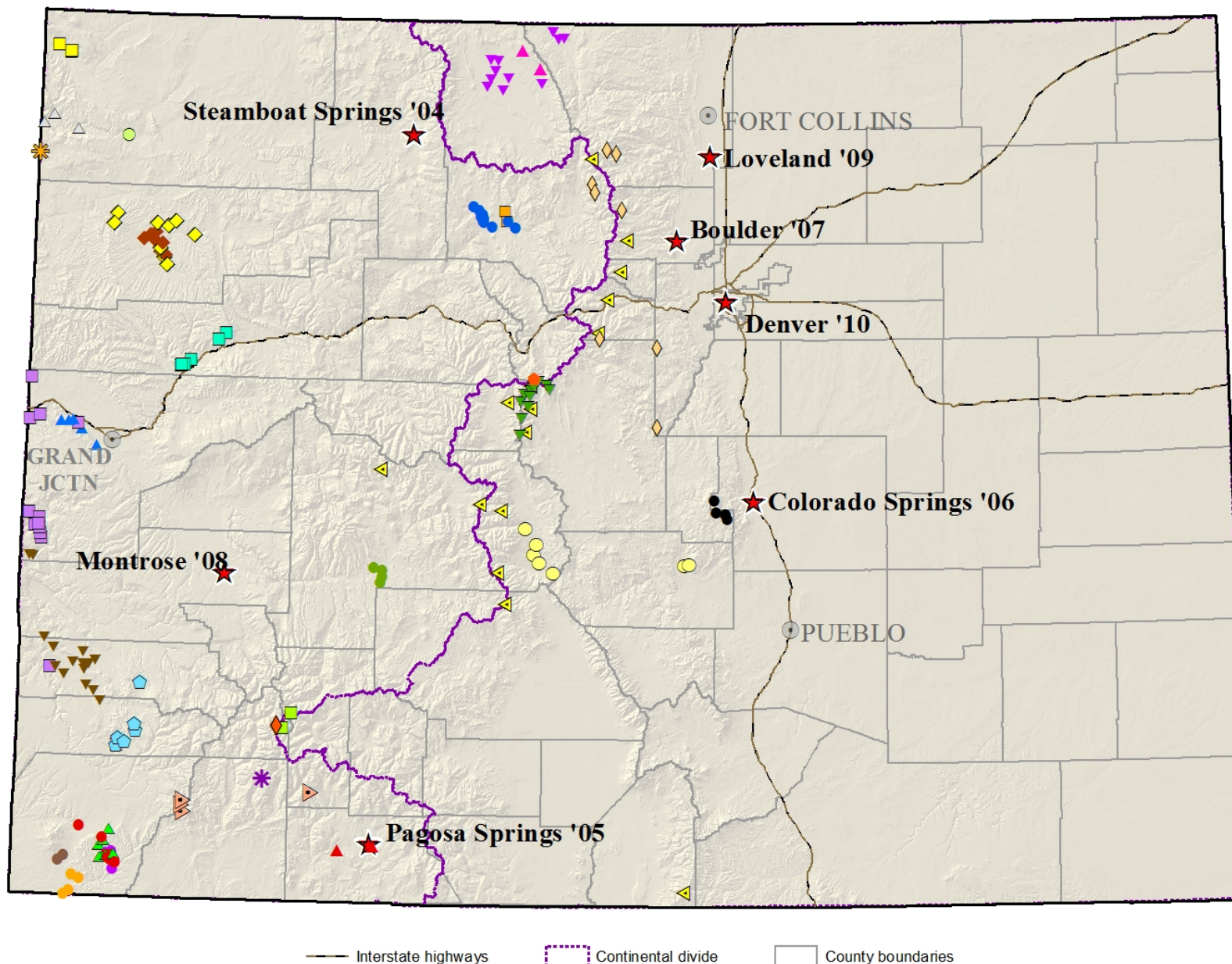
Sponsored by:

Colorado Native Plant Society
University of Colorado Herbarium
US Fish and Wildlife Service
Colorado Natural Heritage Program
USDA Forest Service



2010 species

- ▲ *Aletes latilobus*
- *Aliciella sedifolia*
- *Astragalus deterior*
- *Astragalus humilimus*
- *Astragalus hamiltonii*
- *Astragalus microcymbus*
- *Astragalus osterhoutii*
- *Astragalus schmollii*
- *Astragalus tortipes*
- ▲ *Botrychium furcatum*
- ✱ *Boechera glareosa*
- ▲ *Corispermum navicula*
- ▼ *Cryptantha gypsophila*
- ◆ *Descurainia kenheilli*
- ▶ *Draba malpighiacea*
- ◆ *Draba weberi*
- △ *Erigeron wilkenii*
- *Eriogonum brandegeei*
- ▼ *Eutrema penlandii*
- *Gutierrezia elegans*
- ▲ *Hackelia gracilentia*
- ▲ *Ipomopsis polyantha*
- ◆ *Lesquerella congesta*
- *Lygodesmia doloresensis*
- ◆ *Mimulus gemmiparus*
- *Oreoxis humilis*
- *Penstemon debilis*
- *Penstemon gibbensii*
- *Penstemon penlandii*
- ▼ *Phacelia formosula*
- ◆ *Physaria obcordata*
- ◆ *Physaria pulvinata*
- ✱ *Physaria scrotiformis*

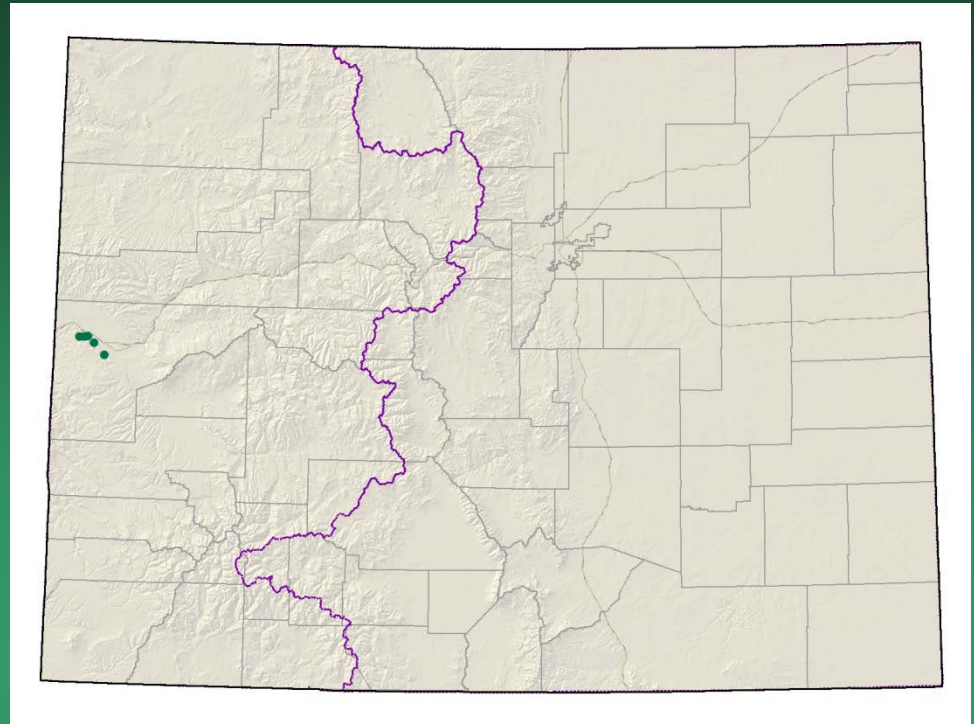


— Interstate highways

--- Continental divide

□ County boundaries

Aletes latilobus=
Lomatium latilobum
Canyonlands biscuitroot



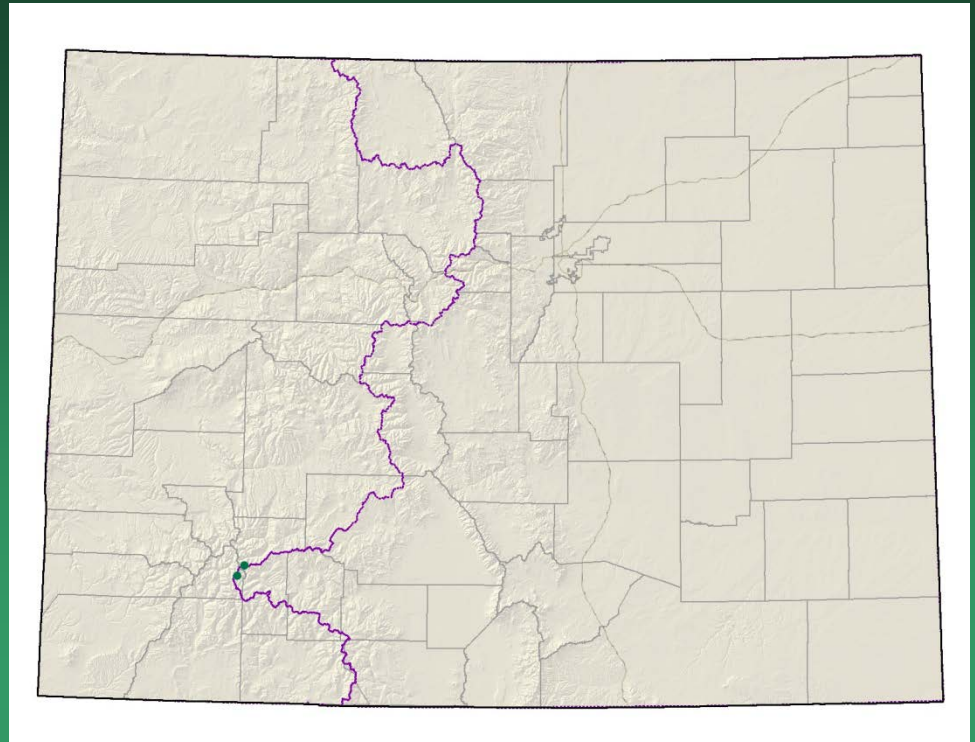
- Federal status: BLM sensitive
- Heritage ranks: G1/S1
- Global distribution: Utah (Grand and San Juan counties) and Colorado (Mesa County--Colorado National Monument and Rattlesnake Canyon)
- Last observed in Colorado: 2009
- Colorado occurrences: 5
- Colorado individuals: >5,000
- Primary threats: 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 Rio Grande National Forest

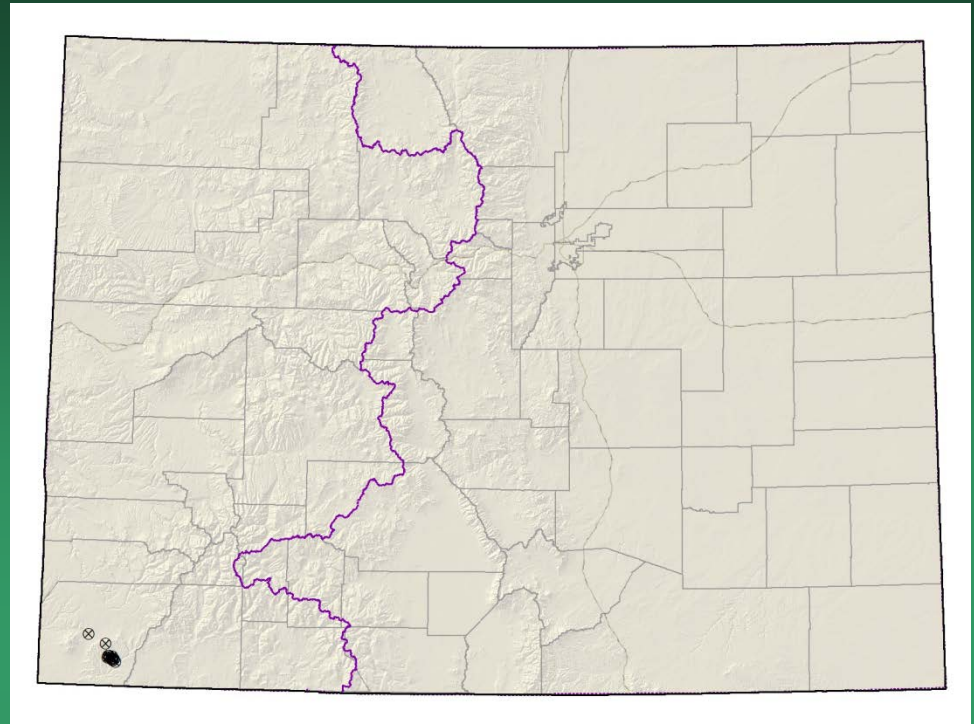


Aliciella sedifolia



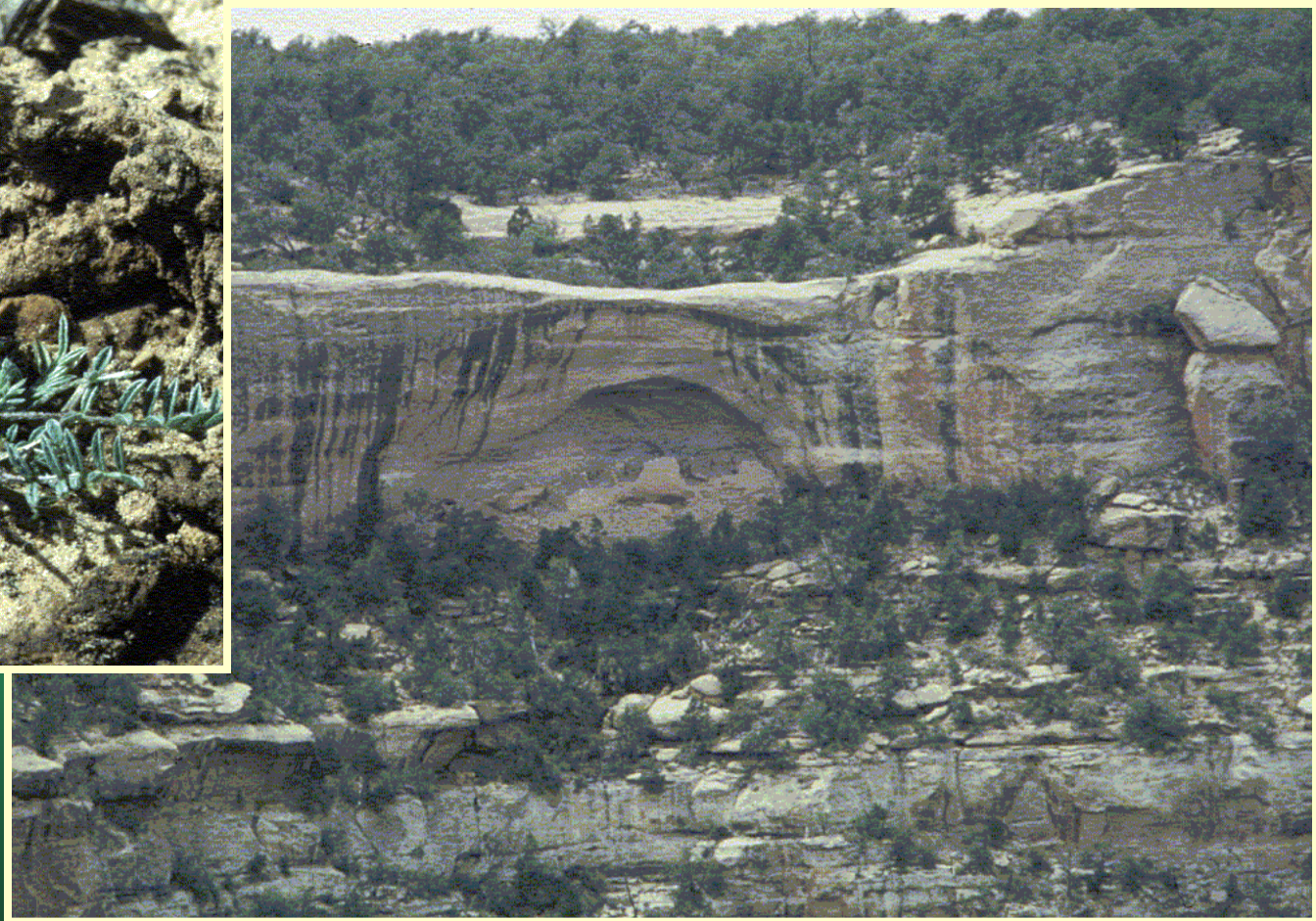
Astragalus deterior

Cliff Palace milkvetch



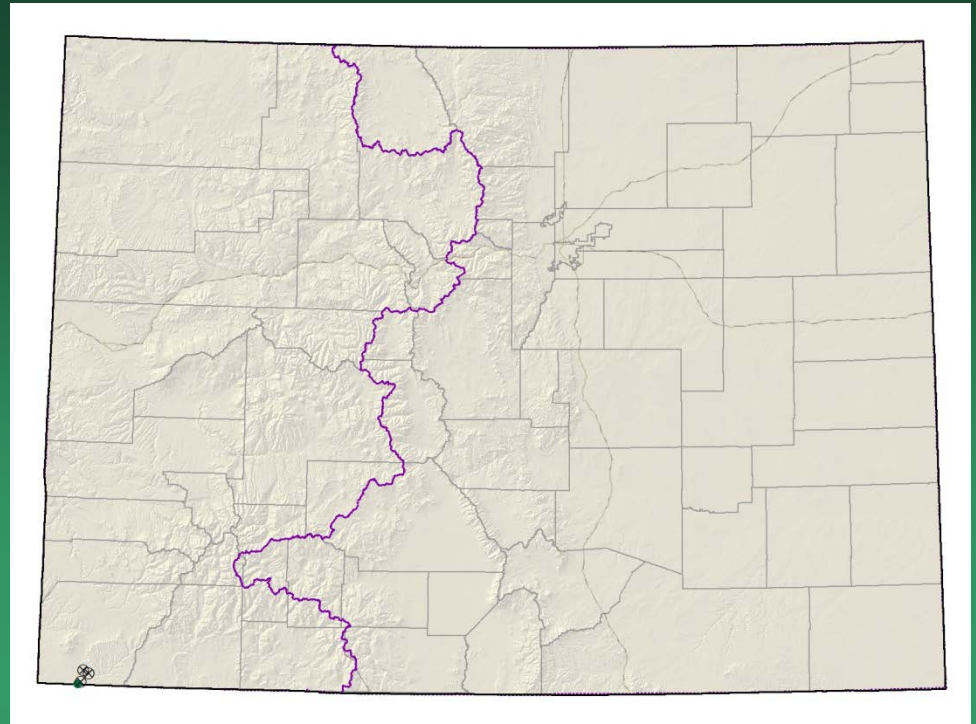
- Federal status: None
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic (Montezuma County)
- Last observed in Colorado: 1991
- Colorado occurrences: 15 (14 historical)
- Colorado individuals: current status undocumented
- Primary threats: Non-motorized recreation
- Land ownership/management: BLM, Mesa Verde NP, tribal (Southern Ute and Ute Mountain Ute), and private lands

Astragalus deterior



Astragalus humillimus

Mancos milkvetch

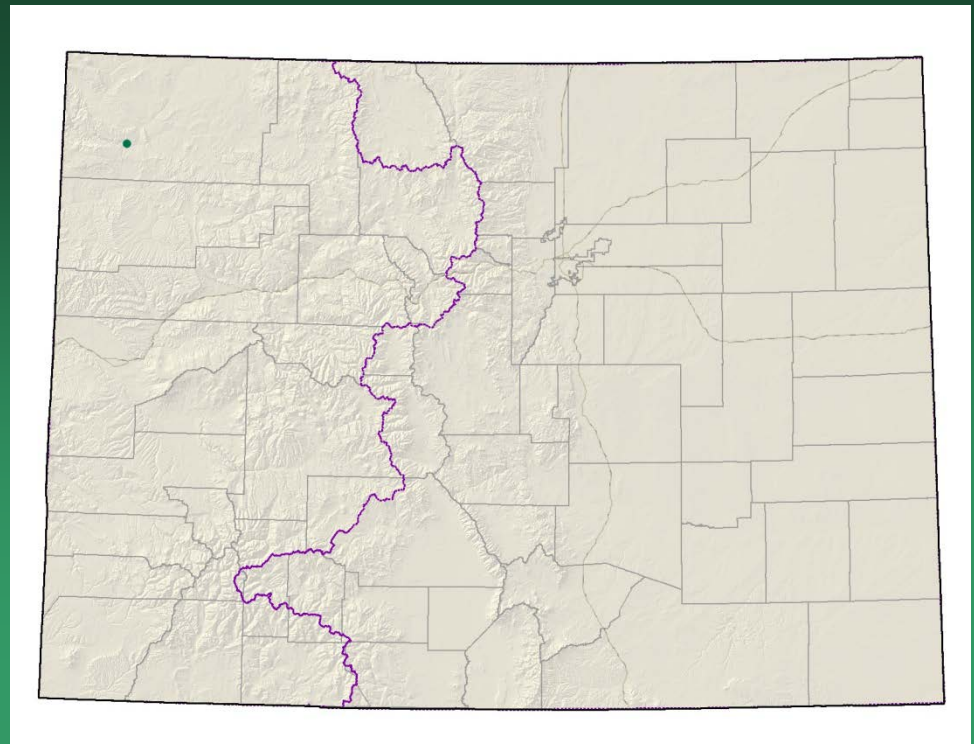


- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: New Mexico and Colorado
- Last observed in Colorado: CNAP 1998
- Colorado occurrences: 4 (all are historical)
- Colorado individuals: 25,000
- Primary threats: mineral, oil, and gas development, seismic exploration
- Land ownership/management: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

Astragalus humillimus



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

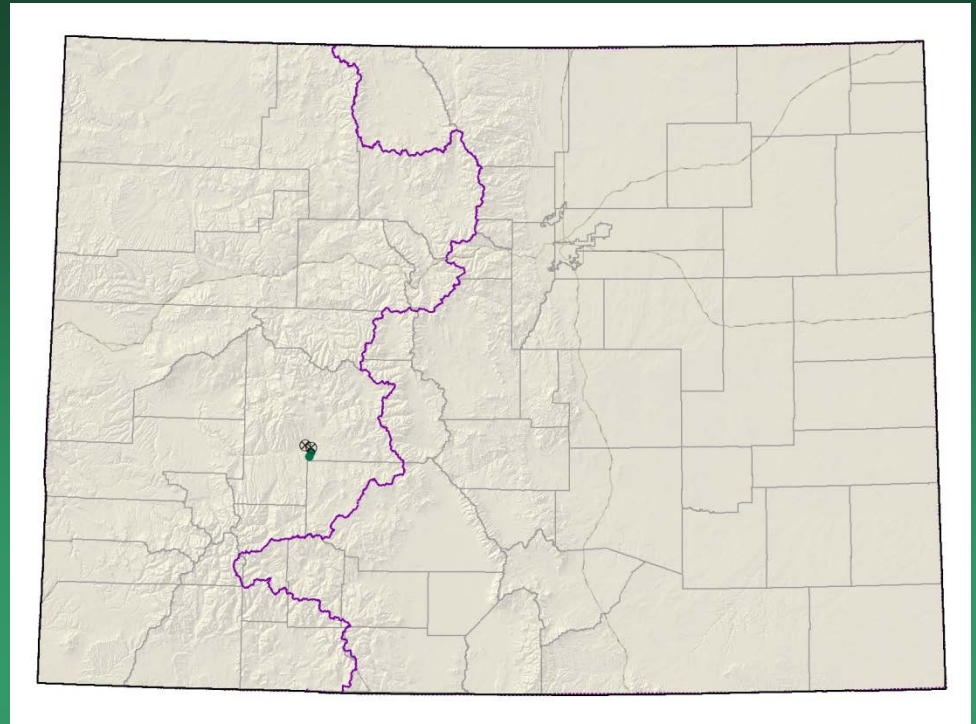
Astragalus lonchocarpus var.
hamiltonii



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: 2010
- Occurrences: 4 (2 are historical)
- Individuals: 10,000-12,000
- 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



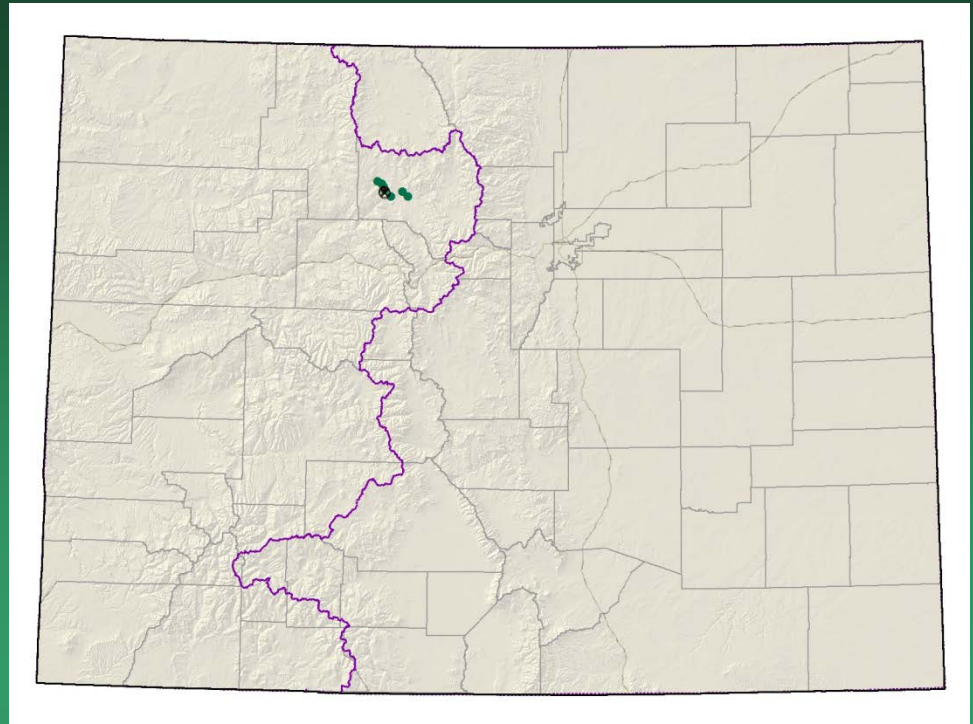
Astragalus microcymbus



Astragalus osterhoutii

Osterhout milkvetch

Conservation Action Plan



- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2010
- Occurrences: 6 (1 is historical)
- Individuals: 25,000-50,000
- Primary threats: recreation, mining, oil and gas development
- Land ownership/management: BLM, private, state

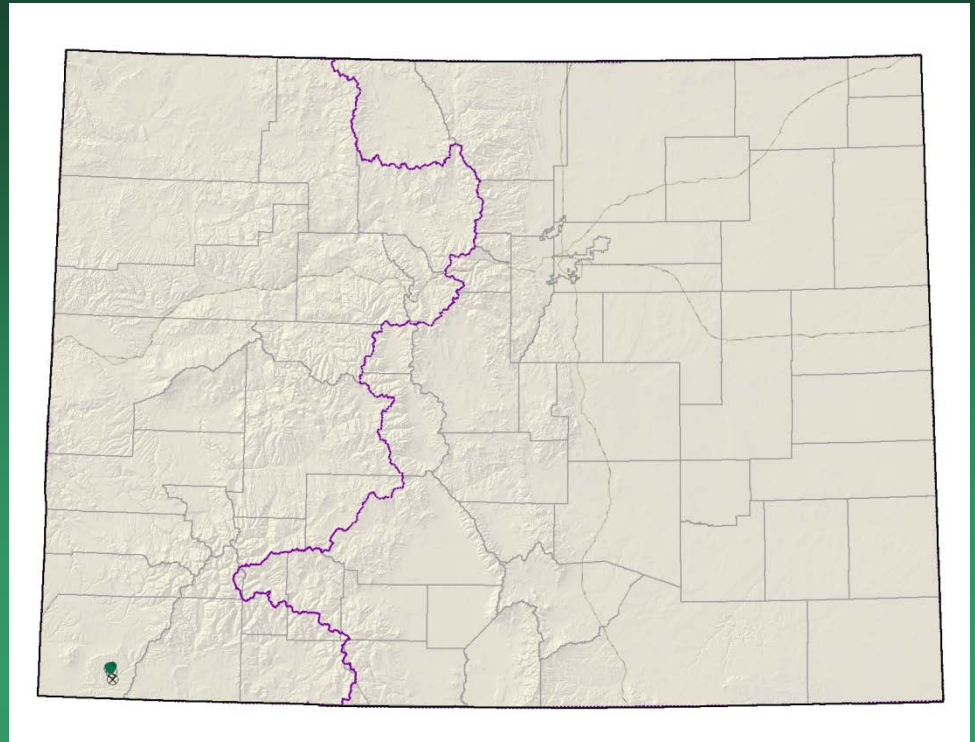
Astragalus osterhoutii



Astragalus schmolliae

Schmoll's milkvetch

- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Chapin Mesa, Montezuma County
- Last observed: 2008
- 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



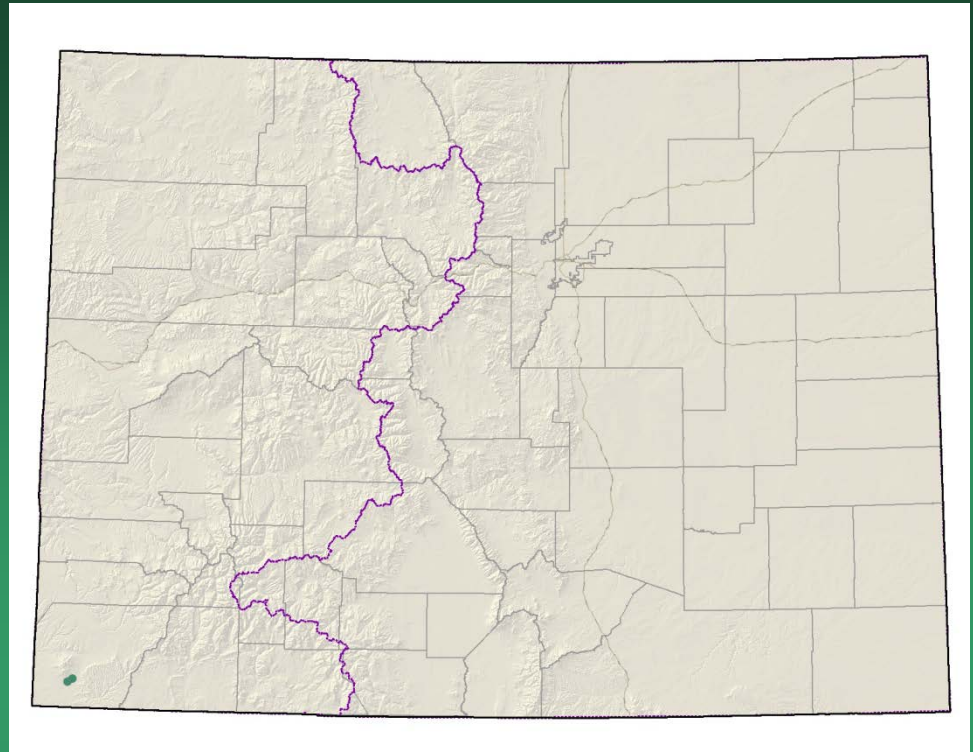
Astragalus schmolliae



Astragalus tortipes

Sleeping Ute milkvetch

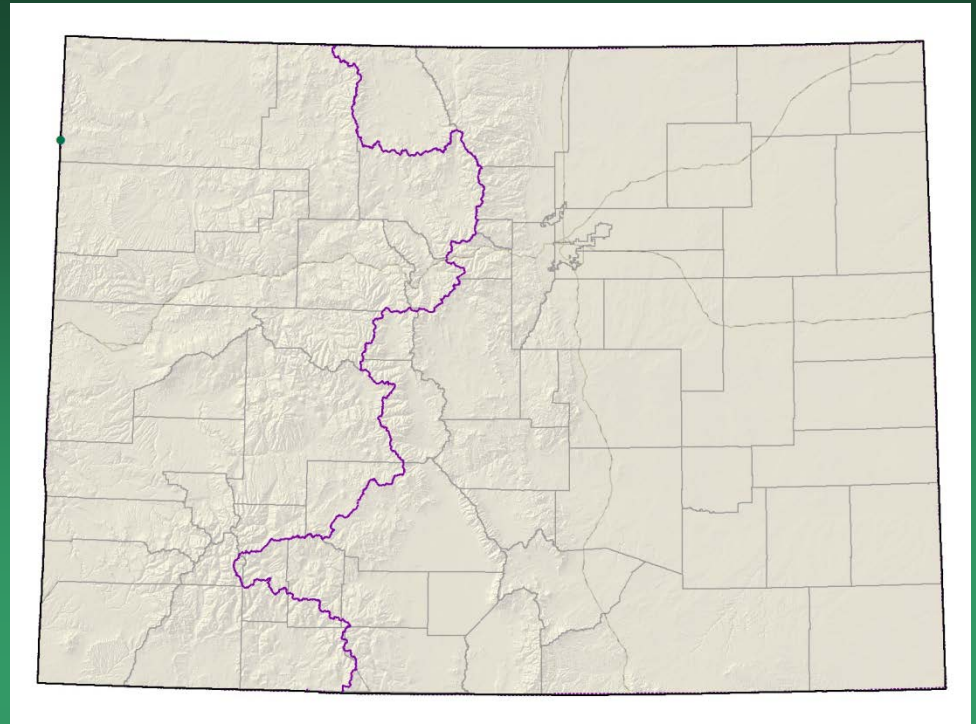
- Federal status: Candidate, BLM
- sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2000
- Occurrences: 2
- Individuals: 2,000-3,000
- Primary threats: McPhee Reservoir canals, agricultural development
- Land ownership/management: Ute Mountain Ute



Astragalus tortipes



Boechera glareosa snowbasin rockcress



- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Utah and Colorado (Moffat county)
- Last observed in Colorado: 2002
- Colorado occurrences: 1
- Colorado individuals: unknown
- Primary threats: unknown
- Land ownership/management: BLM

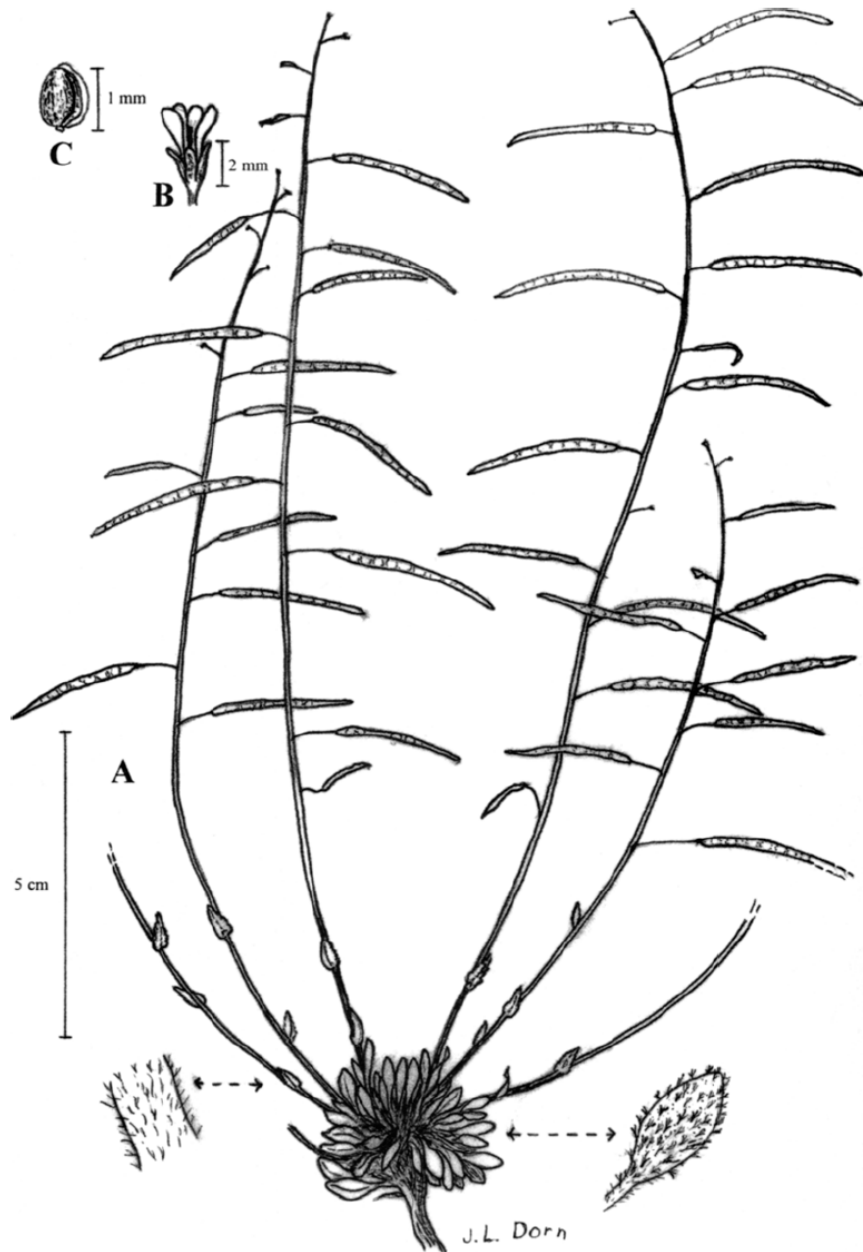
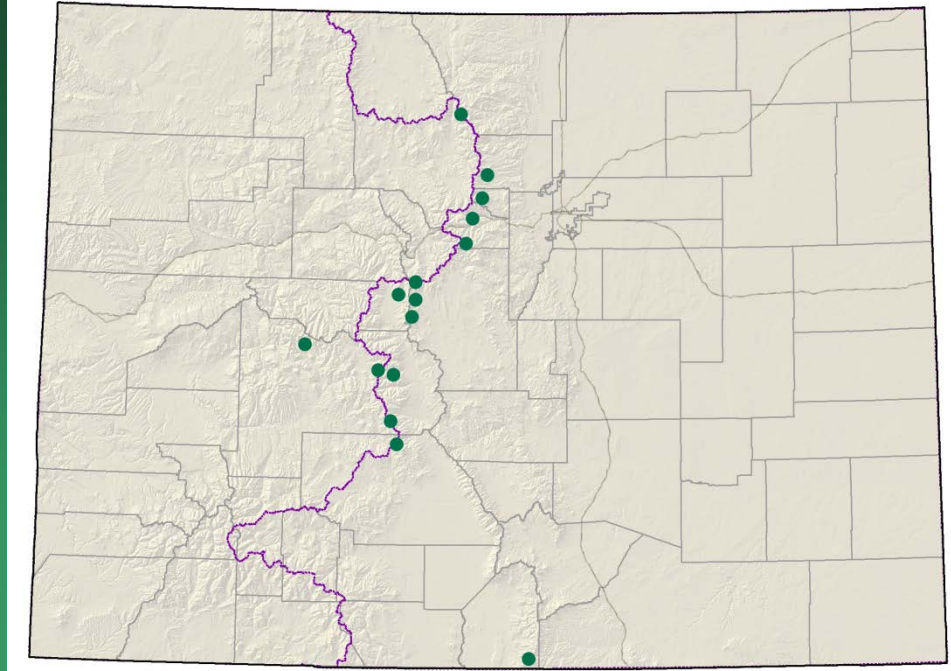


FIG. 1. *Boechera glareosa*. A. Fruiting plant. B. Flower. C. Seed. (From Dorn 8734 & 9106, RM.)

Boechera glareosa

Botrychium tax. nov.
“*furcatum*” ?
forkleaved moonwort



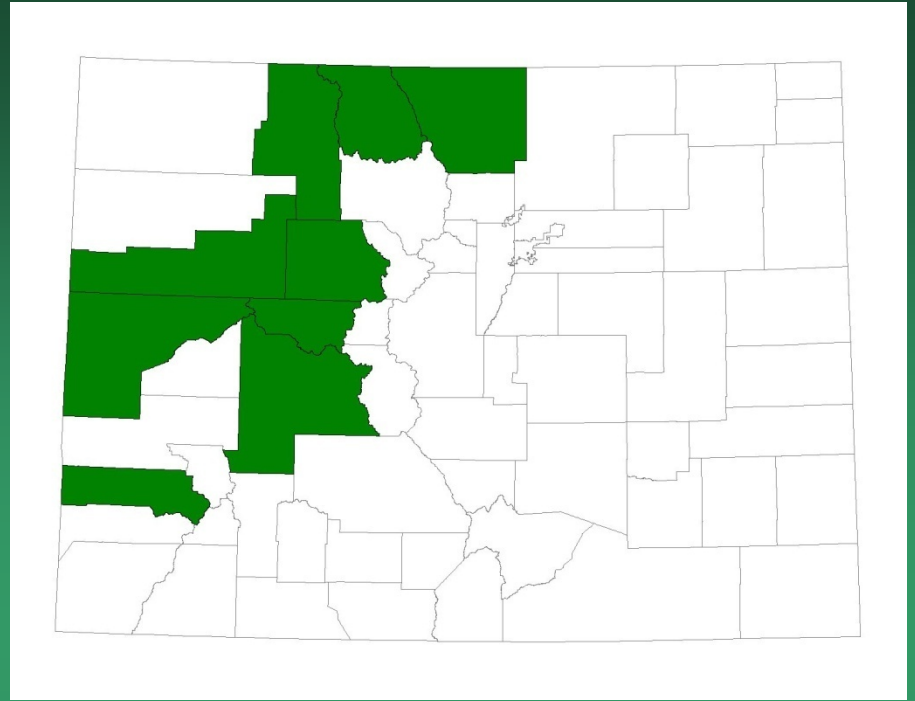
- Federal status: USFS sensitive
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado (Boulder, Chaffee, Clear Creek, Costilla, Grand, Gunnison, Lake, Park, and Saguache counties), New Mexico (Wheeler Peak, Taos County, pending genetic verification)
- Last observed in Colorado: 2009
- Colorado occurrences: 18 sites totaling 47 populations or subpopulations
- Colorado individuals: ~1200
- Primary threats: maintenance and improvements of roads and earthen dams
- Land ownership/management: USFS, NPS, Private

Botrychium tax. nov. “*furcatum*”



Cirsium scapanolepis

Mountain slope thistle



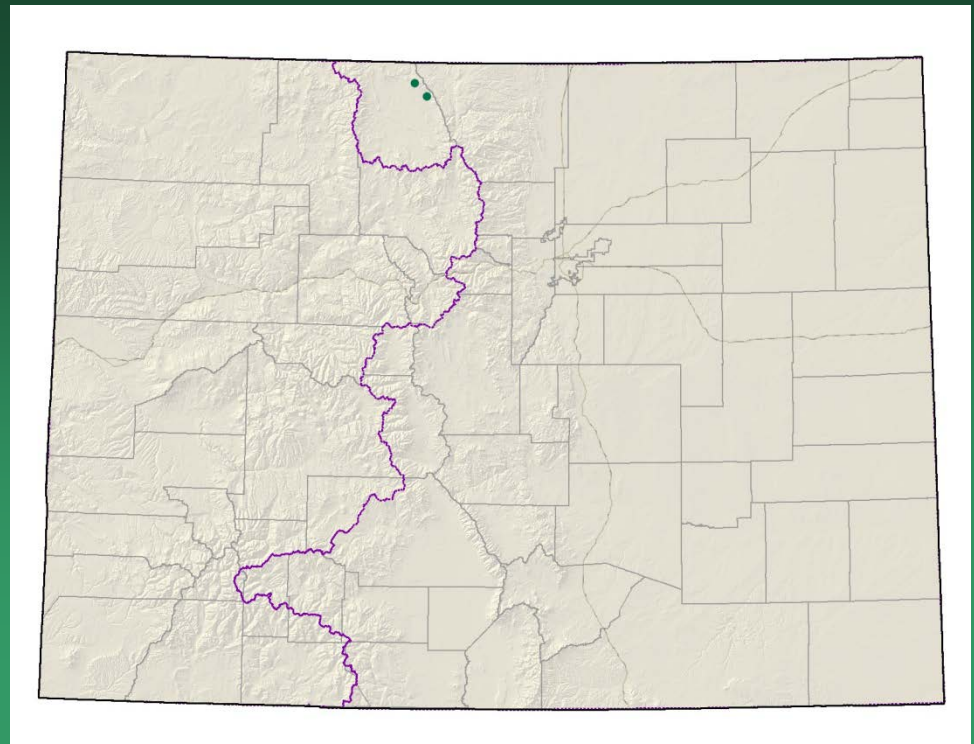
- Federal status: none
- Heritage ranks: G1G2Q/S1
- Global distribution: Colorado endemic
- Last observed in Colorado: 1900-1983?
- Colorado occurrences: unknown, obscure
- Colorado individuals: unknown
- Primary threats: weevils, unknown
- Land ownership/management: unknown

Cirsium scapanolepis



Corispermum navicula

Crescent bugseed



- Federal status: **BLM sensitive**
- 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

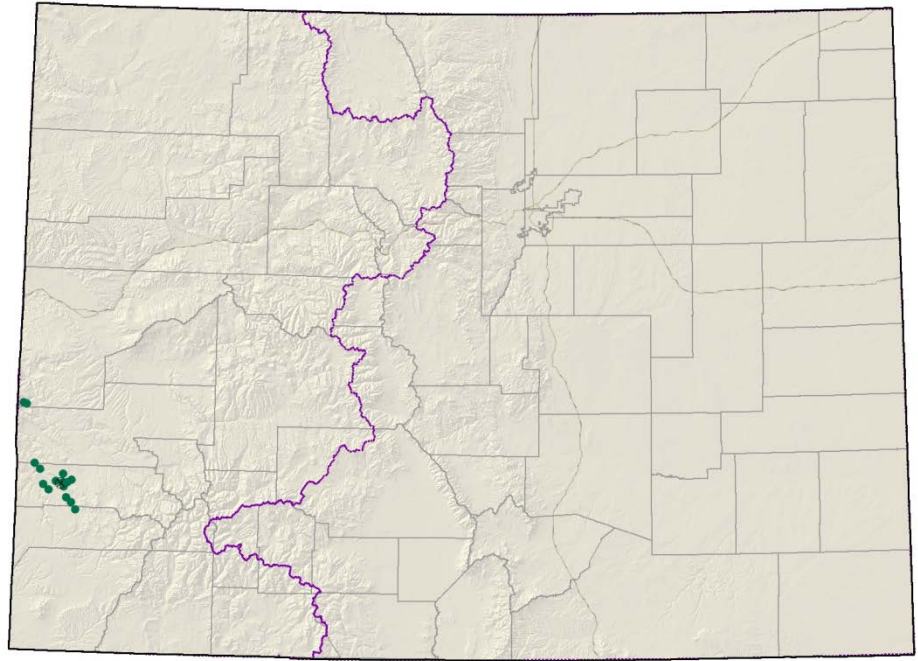


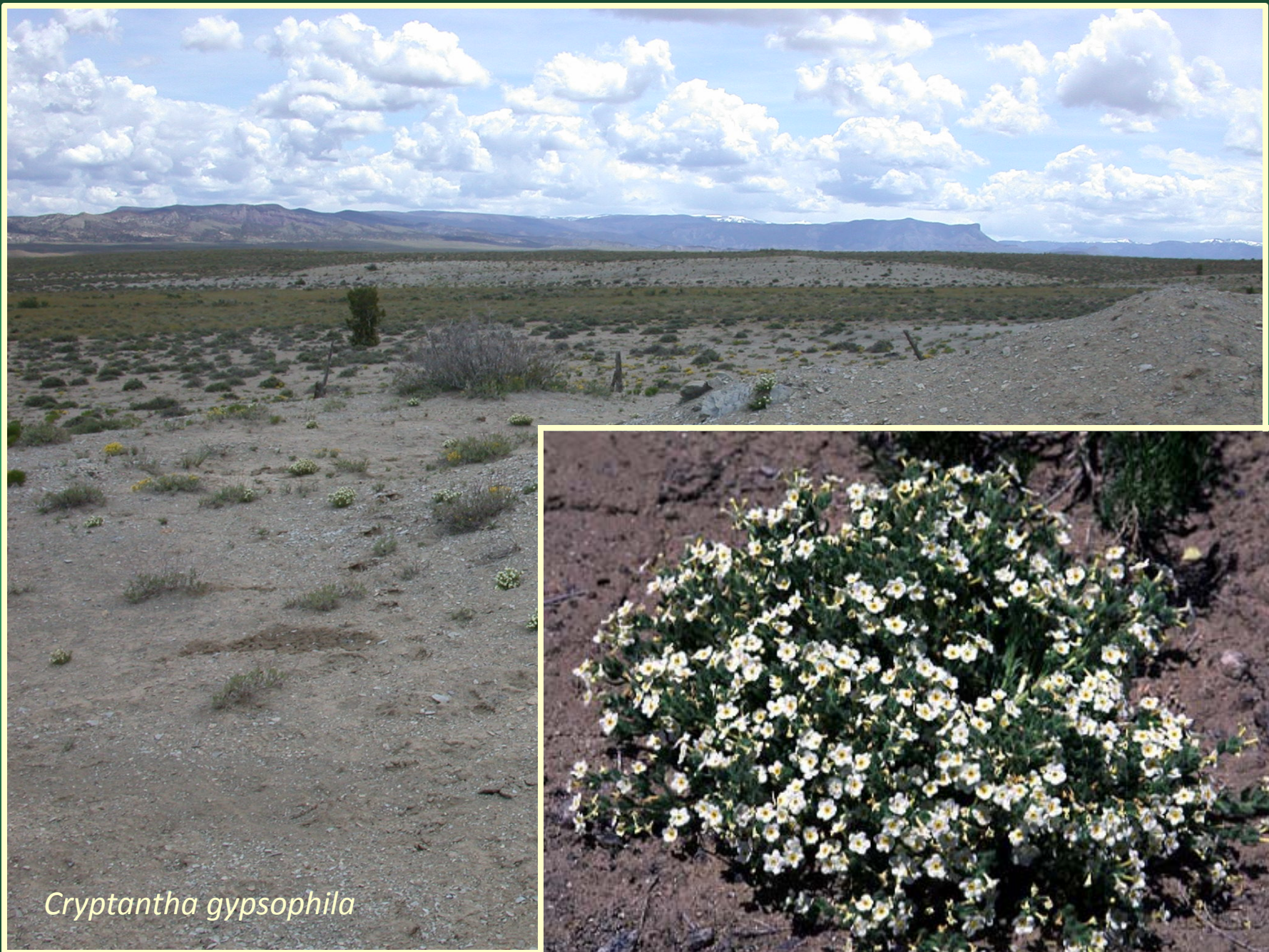
Cryptantha gypsophila

Gypsum Valley Cat-eye

Conservation Action Plan

- Federal status: **BLM Sensitive**
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic, Mesa, Montrose & San Miguel Counties
- Last observed: **2010**
- Occurrences: 16 (1 historical)
- Individuals: 25,100+
- Primary threats: oil and gas development, grazing, ATVs, recreation, roads
- Land ownership/management: BLM, Private, **State (CDOW)**



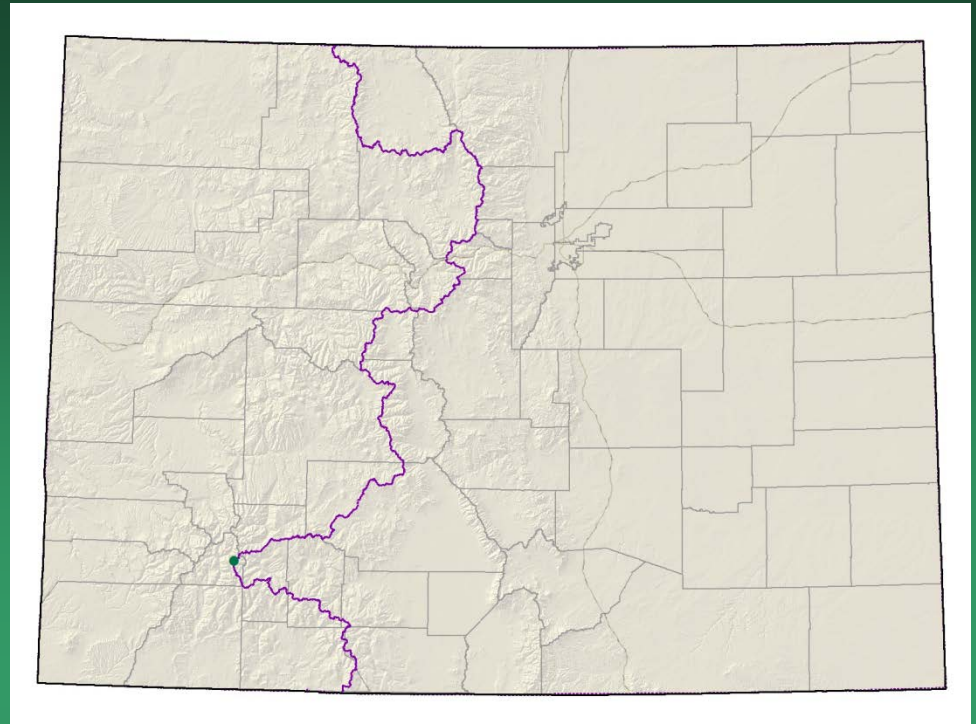


Cryptantha gypsophila

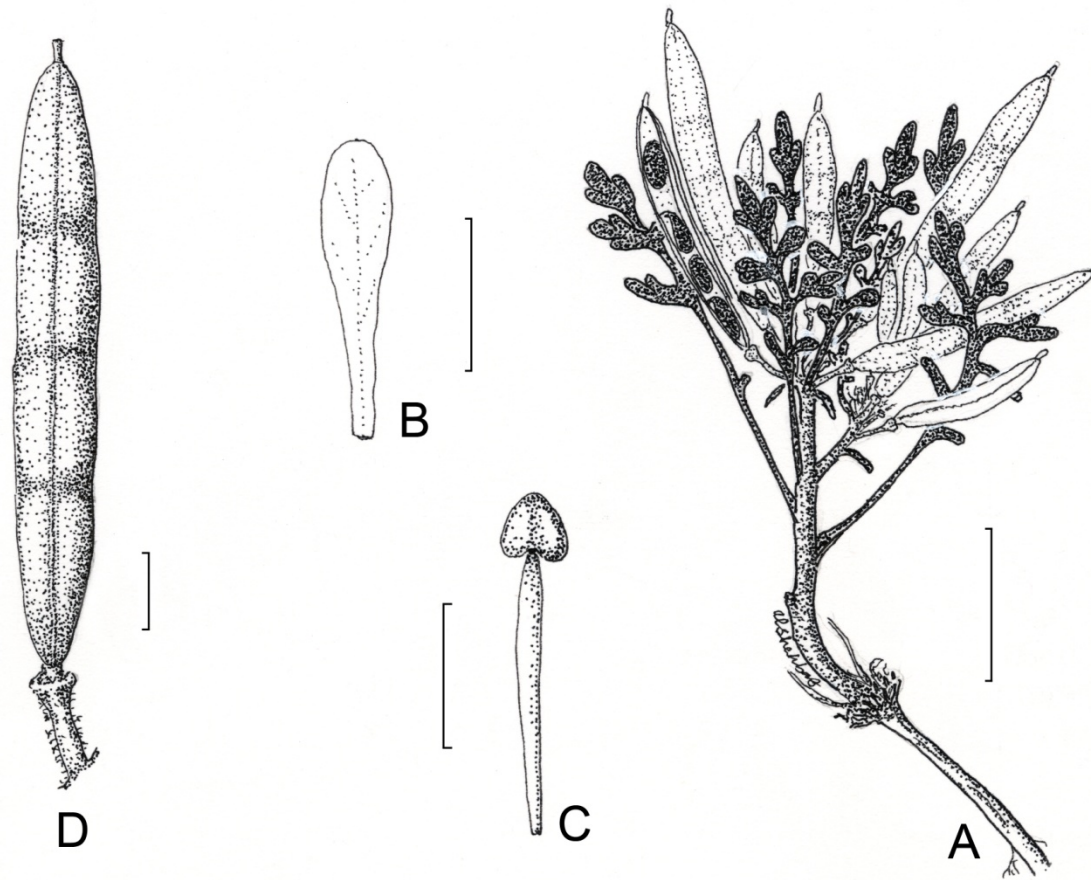


Descurainia kenheilii

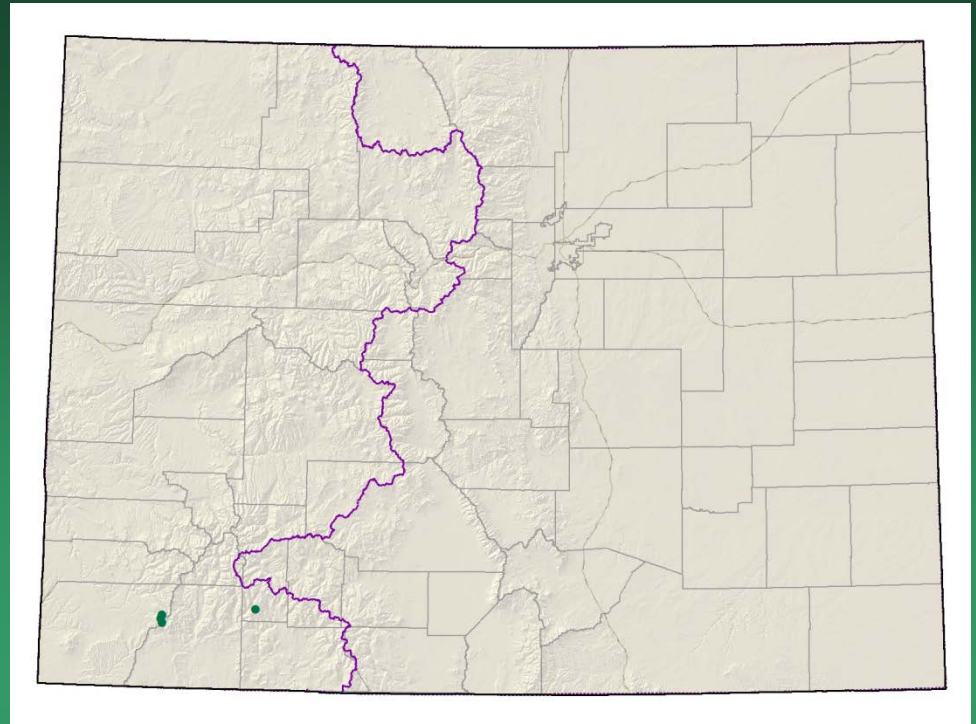
Heil's tansy mustard



- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Endemic to CO; San Juan County
- Last observed in Colorado: 1997
- Colorado occurrences: 1
- Colorado individuals: unknown
- Primary threats: unknown
- Land ownership/management: Rio Grande NF; BLM, private



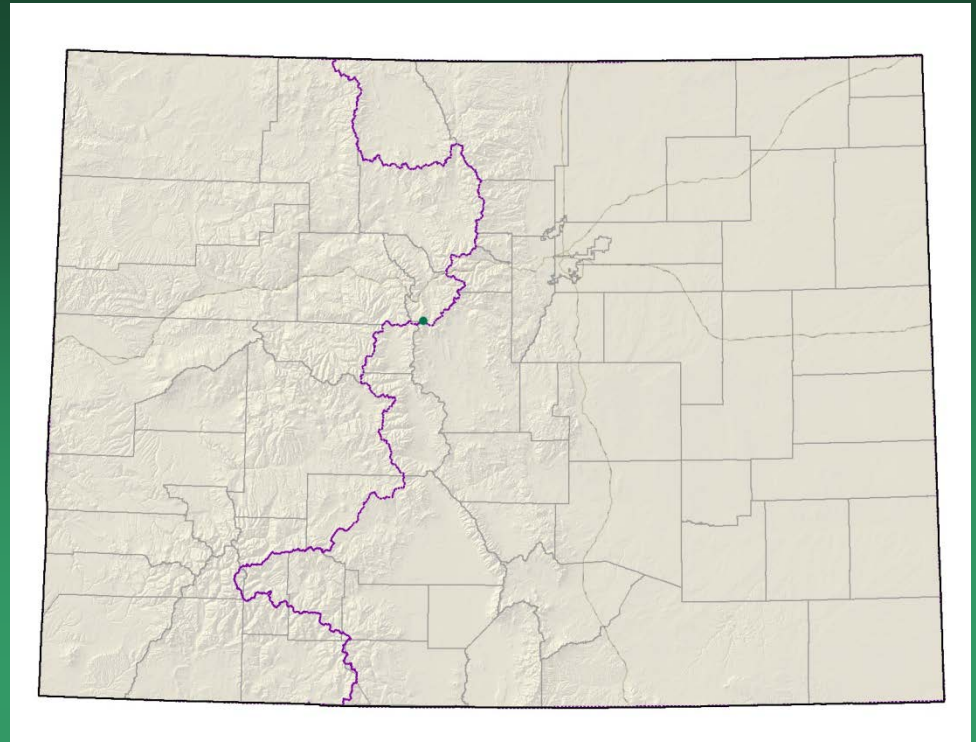
Draba malphigiaceae whitlow- grass



- Federal status: none
- Heritage ranks: G1G2/S1S2
- Global distribution: Endemic to CO; Hinsdale, La Plata and Montezuma counties
- Last observed in Colorado: 1995
- Colorado occurrences: 4
- Colorado individuals: unknown
- Primary threats: unknown
- Land ownership/management: San Juan NF, private

Draba weberi

Weber's draba



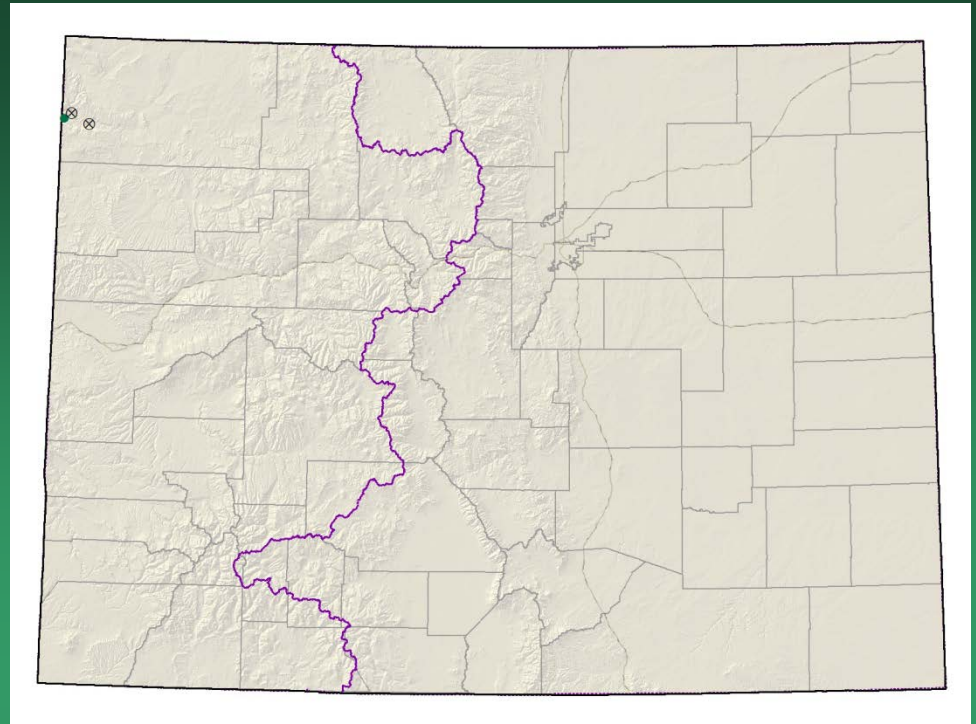
- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Monte Cristo Creek drainage in Summit County
- Last observed: 2010
- Occurrences: 1
- Individuals: 20-100
- Primary threats: road and dam construction and maintenance, environmental stochasticity, recreation, mining, 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

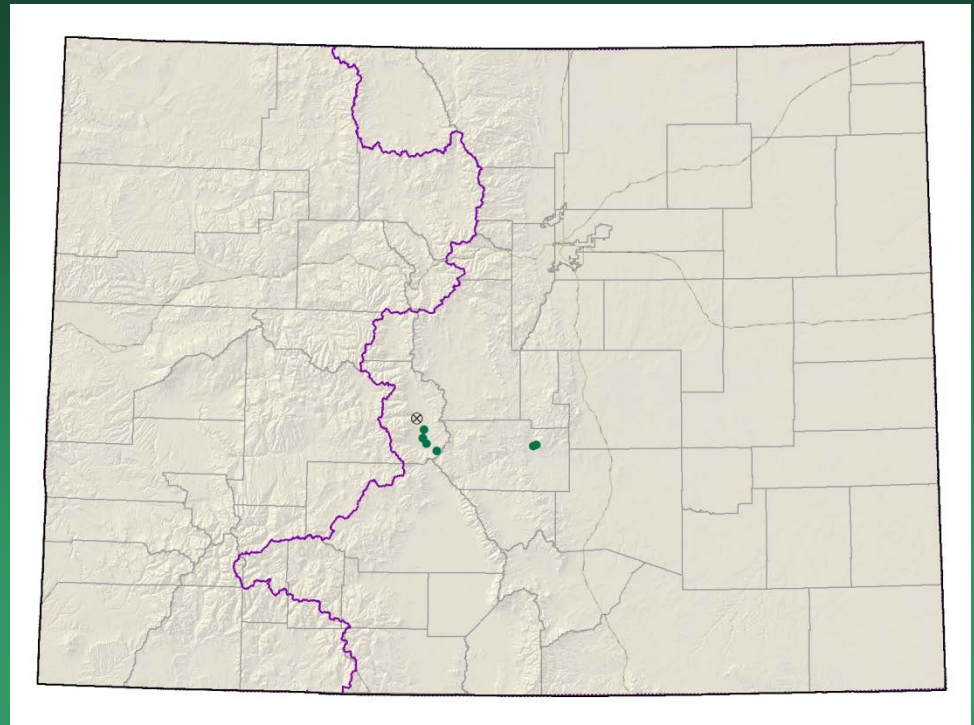
Erigeron wilkenii



Eriogonum brandegeei

Brandegee's buckwheat

- Federal status: USFS & BLM sensitive
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic, Chaffee and Fremont counties
- Last observed: 2010
- 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

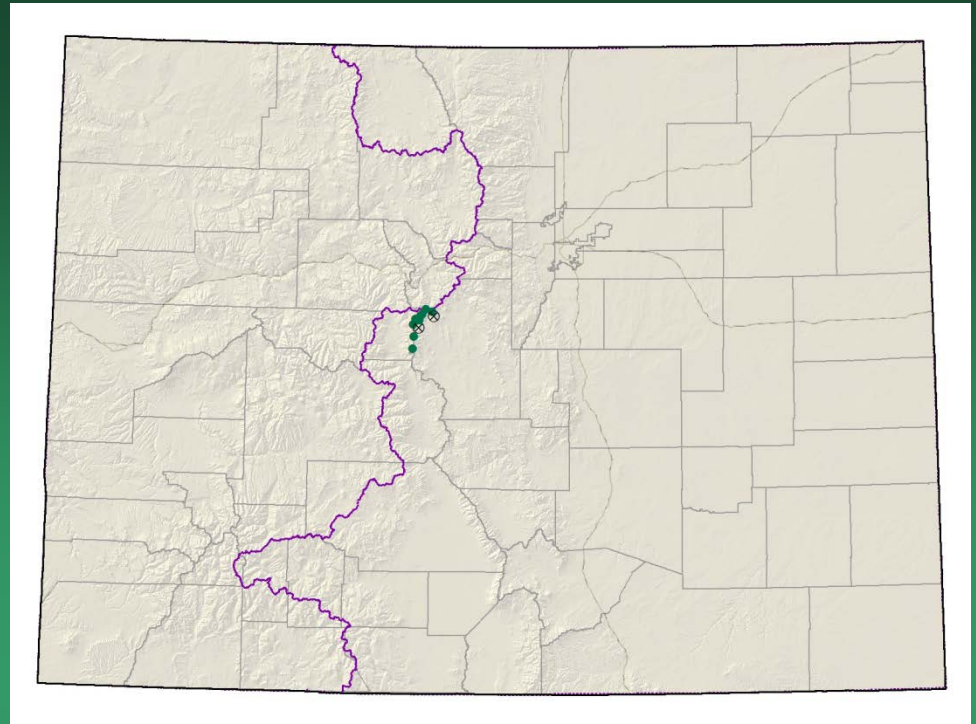




Eriogonum brandegeei

Eutrema penlandii

Penland alpine fen mustard



- Federal status: Endangered
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic
- Last observed: 2010
- Occurrences: 11+ (2 historical)
- Individuals: 10,000-12,000
- Primary threats: mining, recreation
- Land ownership/management: private, USFS, BLM, State

Eutrema penlandii

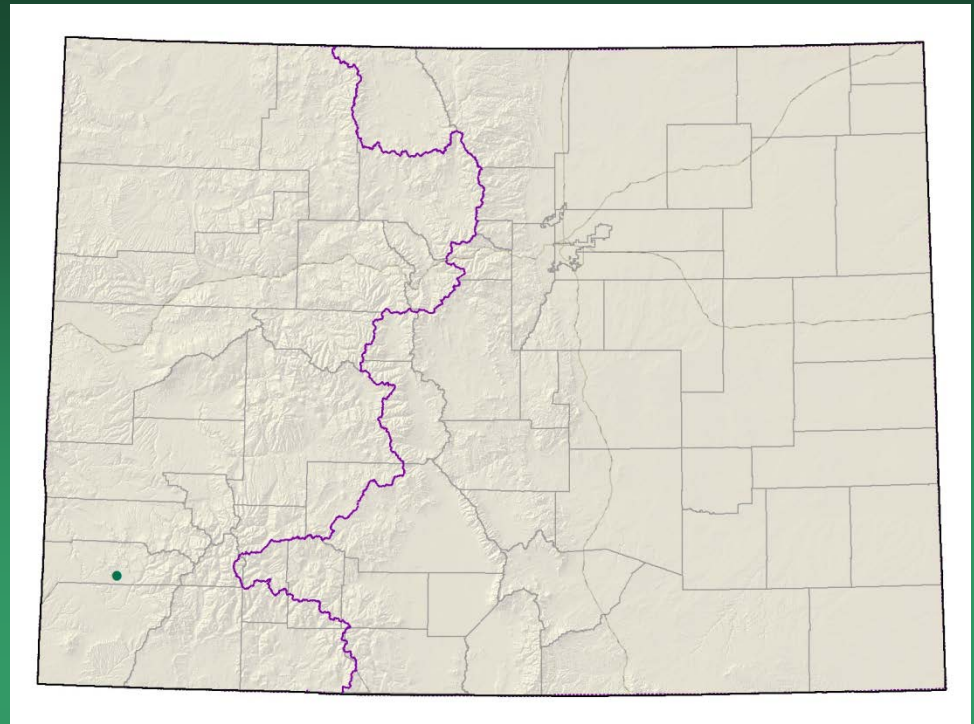


Gutierrezia elegans

Lone Mesa snakeweed

Conservation Action Plan

- Federal status: **BLM sensitive**
- Heritage ranks: G1/S1
- Global distribution: Endemic to Colorado; Dolores County
- Last observed in Colorado: 2009
- Colorado occurrences: 1
- Colorado individuals: 30,000
- Primary threats: grazing, recreation
- Land ownership/management: BLM, San Juan NF, State, private

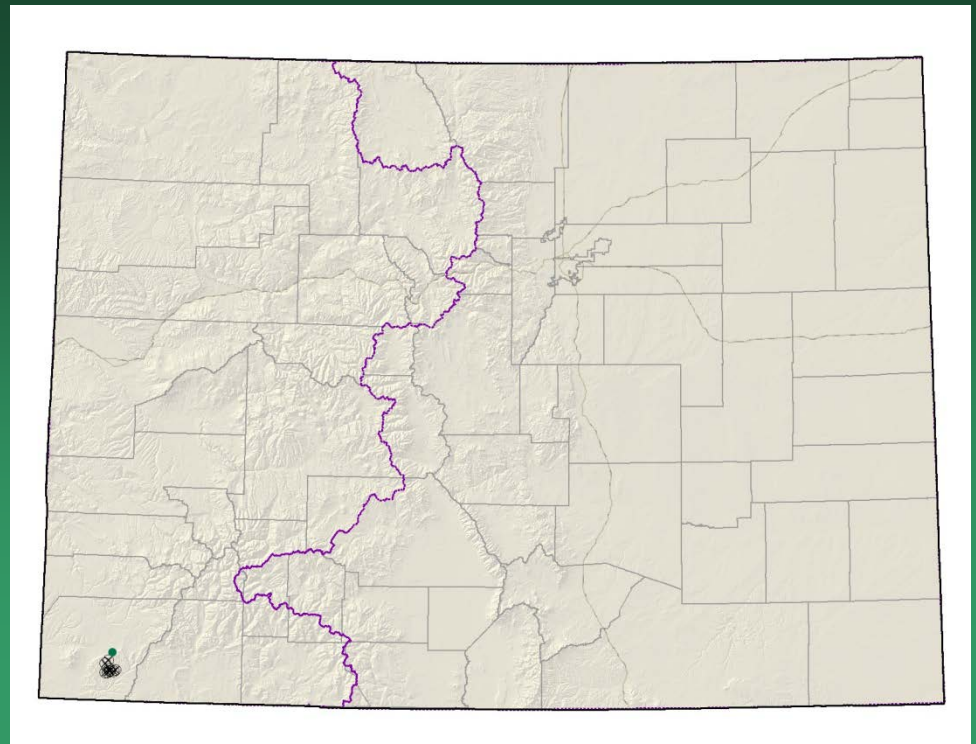




Gutierrezia elegans

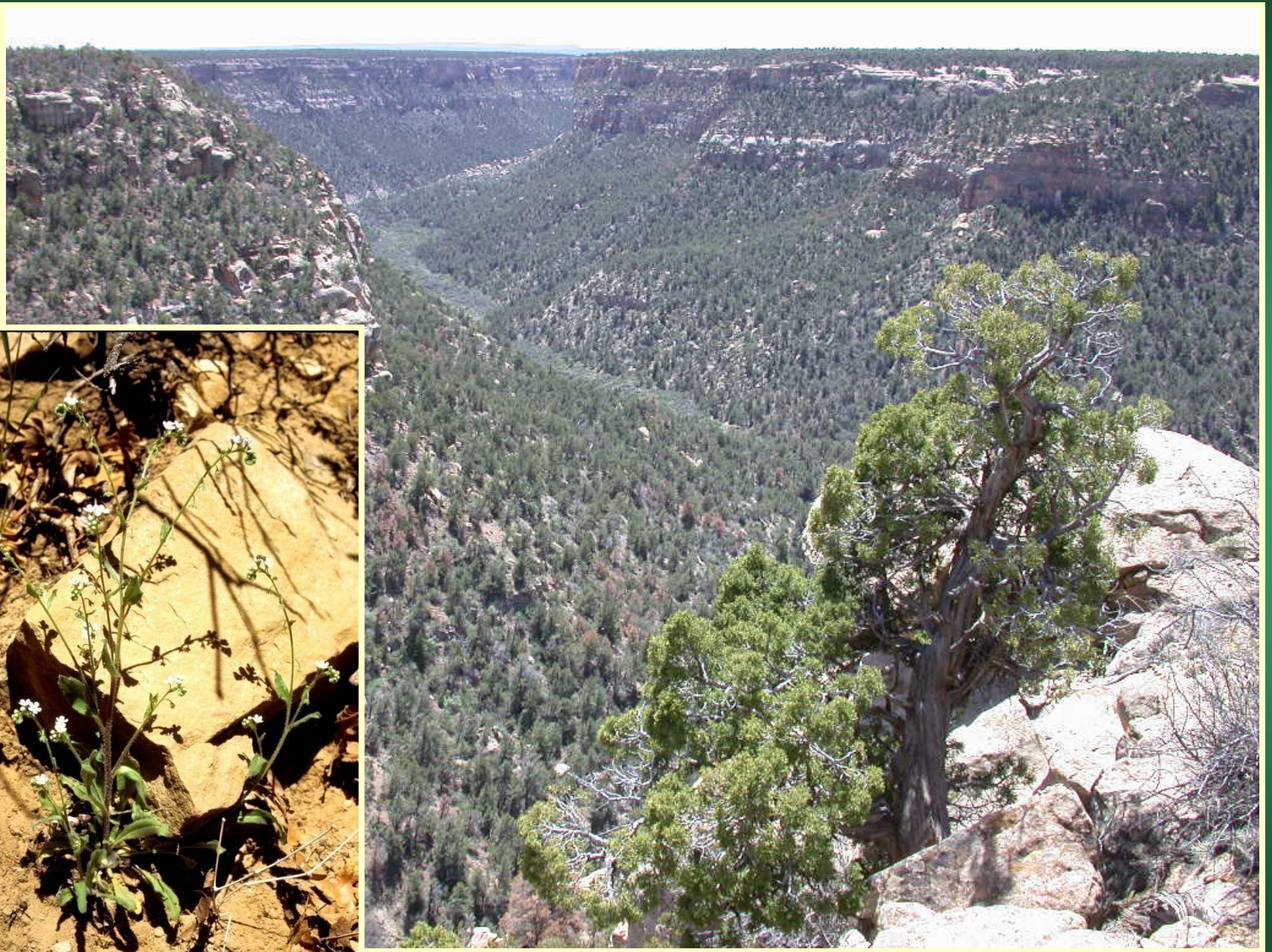
Hackelia gracilenta

Mesa Verde stickseed



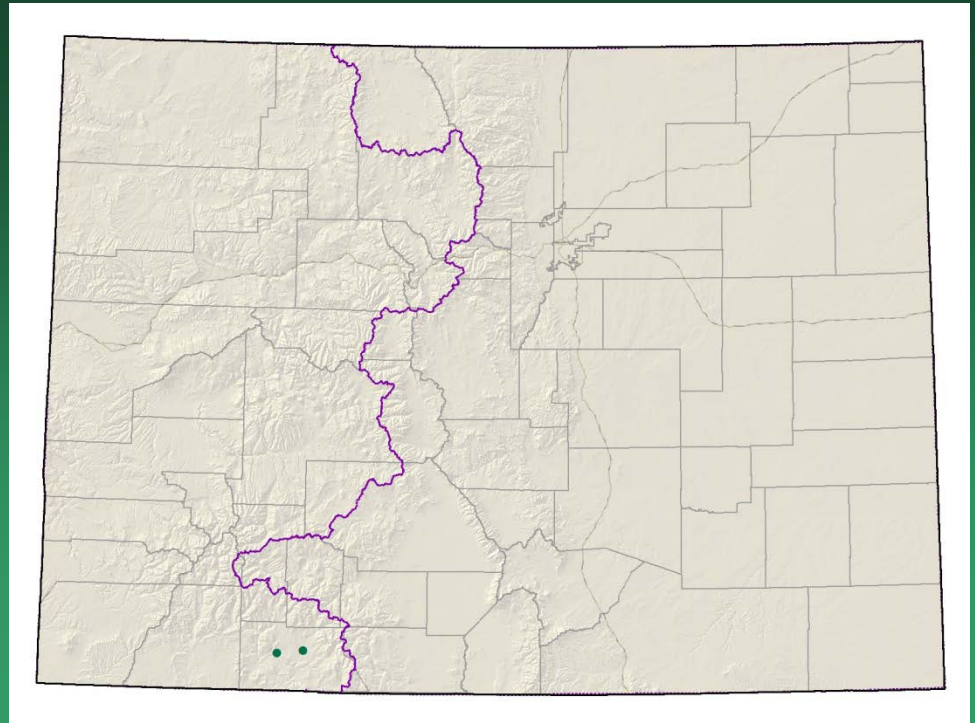
- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Mesa Verde National Park, Montezuma County
- Last observed: 1997
- Occurrences: 10 (9 are historical)
- Individuals: unknown, may be <1000
- Primary threats: Unknown, possibly recreation, and/or developments in the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

Hackelia gracilentia



Ipomopsis polyantha *Pagosa gilia*

Conservation Action Plan



- Federal status: Candidate , BLM & USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Archuleta County
- Last observed: 2009
- Individuals: 250,000
- Occurrences: 2
- Primary threats: residential development, road construction and maintenance, overgrazing
- Land ownership/management: private, highway right of way

Ipomopsis polyantha

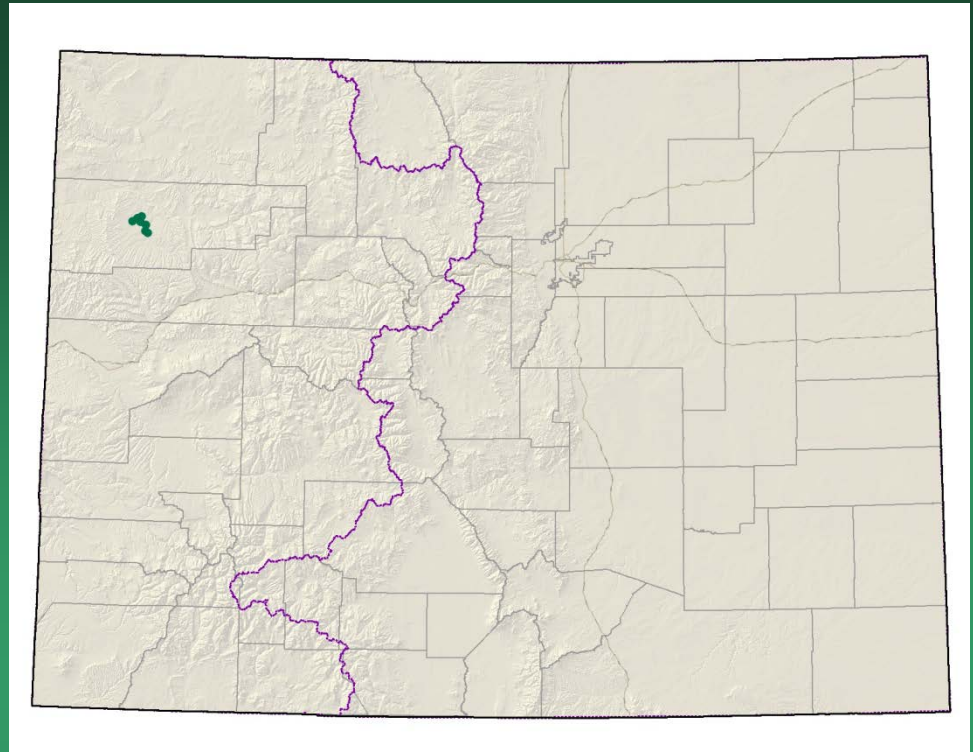


Lesquerella congesta

Dudley Bluffs bladderpod

Conservation Action Plan

- Federal status: Threatened
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2010
- 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



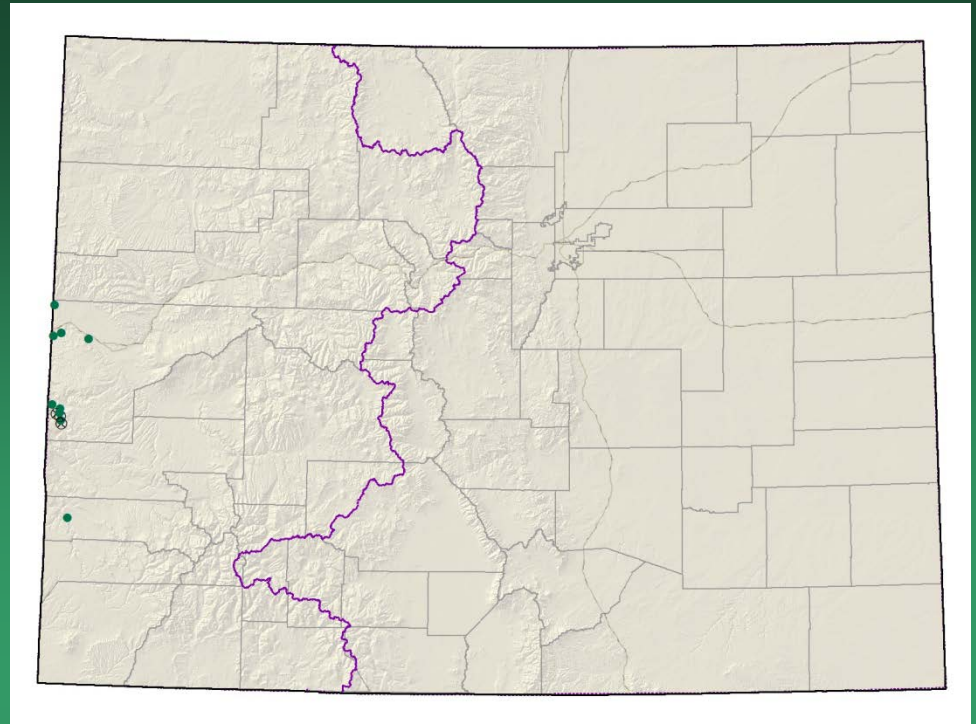
Lesquerella congesta



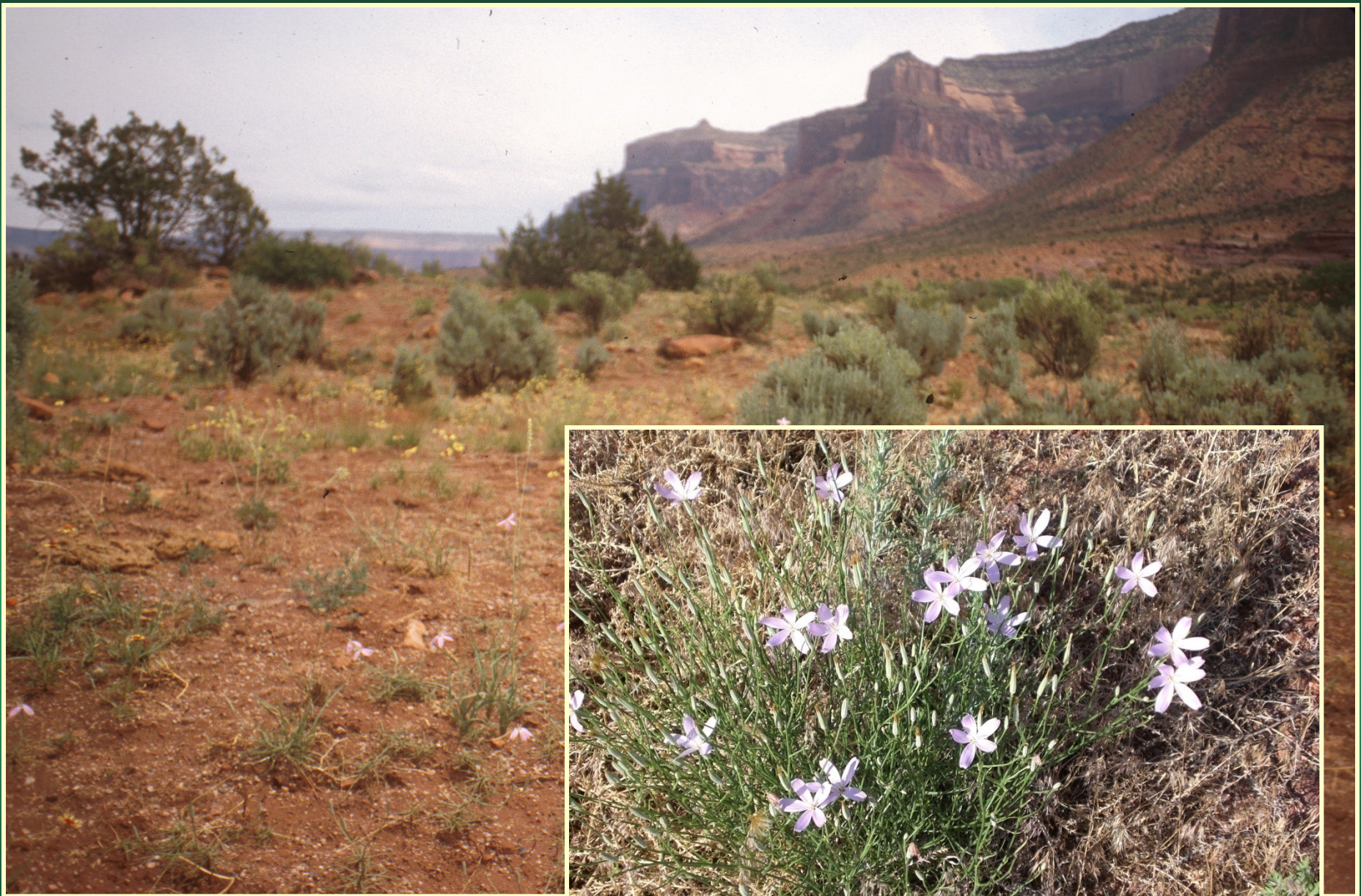
Lygodesmia doloresensis

Dolores River skeletonplant

Conservation Action Plan



- Federal status: BLM sensitive in CO
- Heritage ranks: G1G2/S1
- Global distribution: Utah and Colorado (Mesa & **San Miguel** counties)
- Last observed in Colorado: **2009**
- Colorado occurrences: **12** (4 are historical)
- Colorado individuals: **3700**
- Primary threats: deer, rabbit, and cattle grazing, private land development, road maintenance, weeds
- Land ownership/management: private, BLM

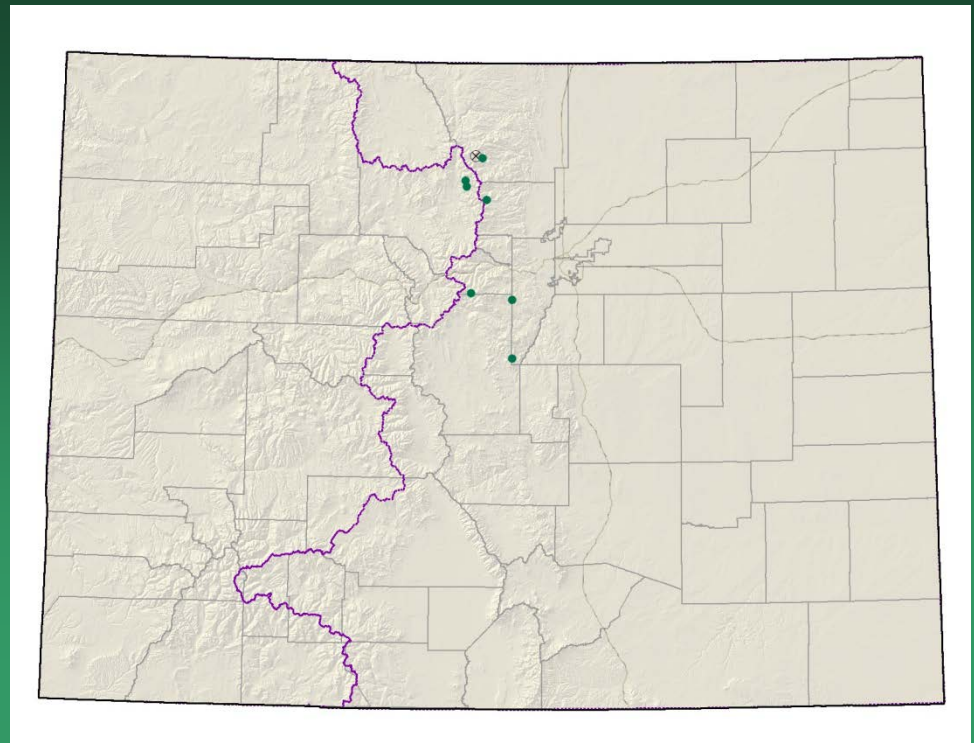


Lygodesmia doloresensis

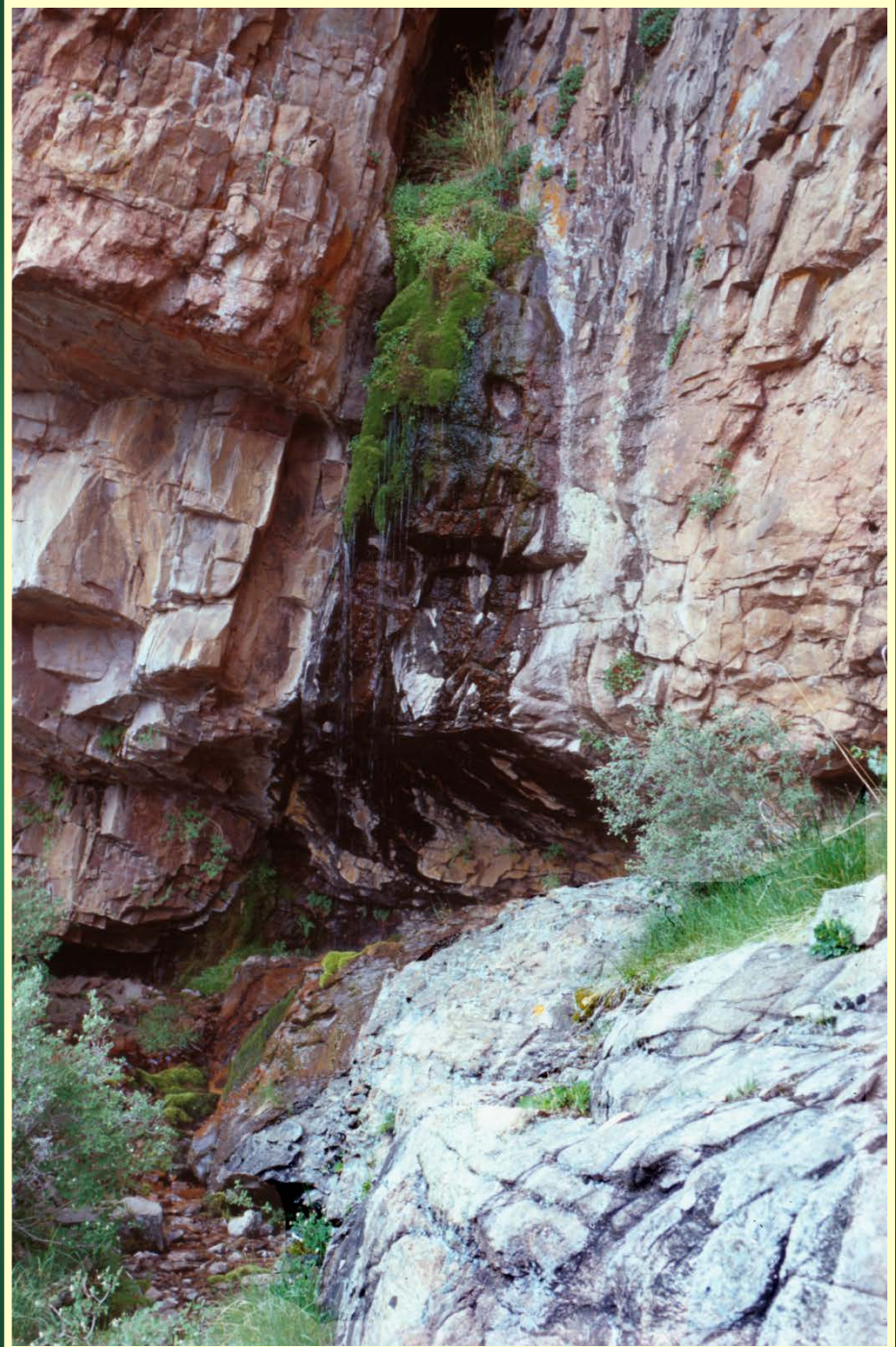
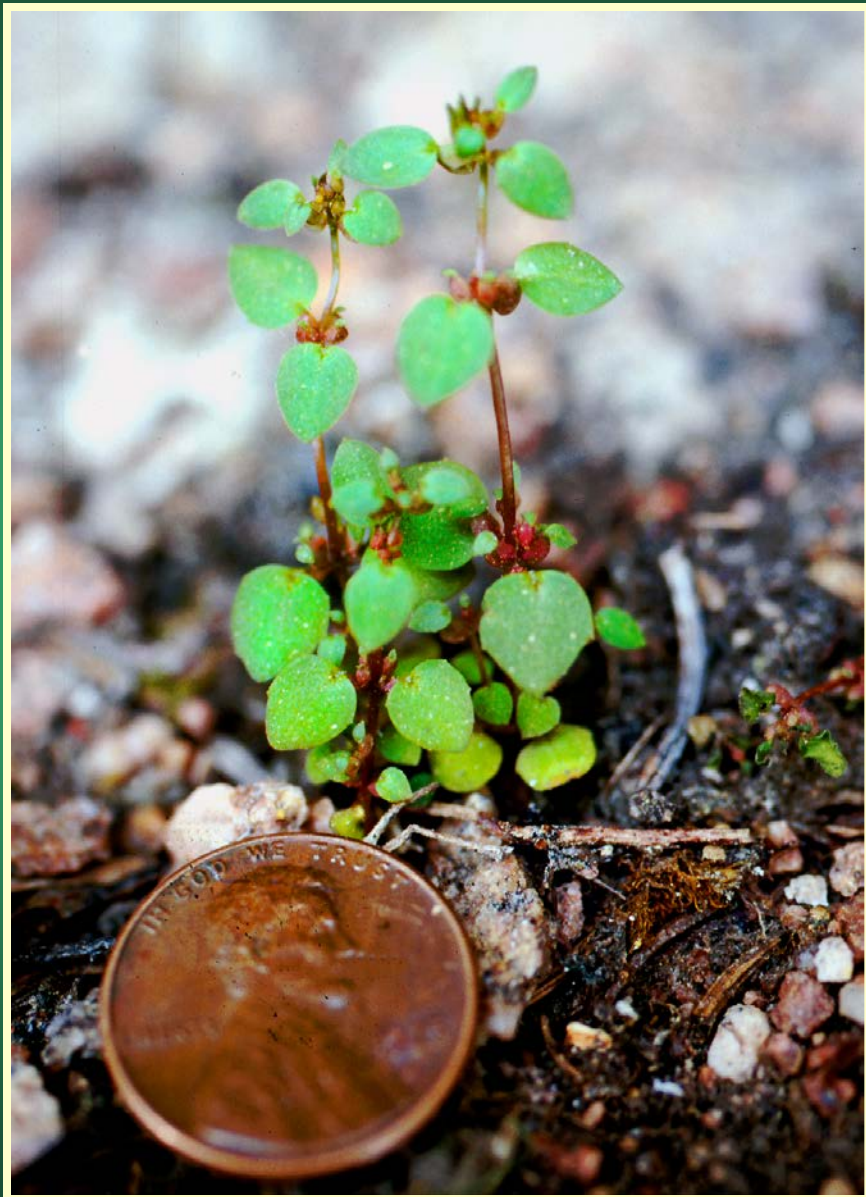
Mimulus gemmiparus

Budding monkeyflower

- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Boulder, Clear Creek, Jefferson, Grand, and Larimer counties
- Last observed: 2010
- Occurrences: 8 (1 historical)
- 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, State Parks



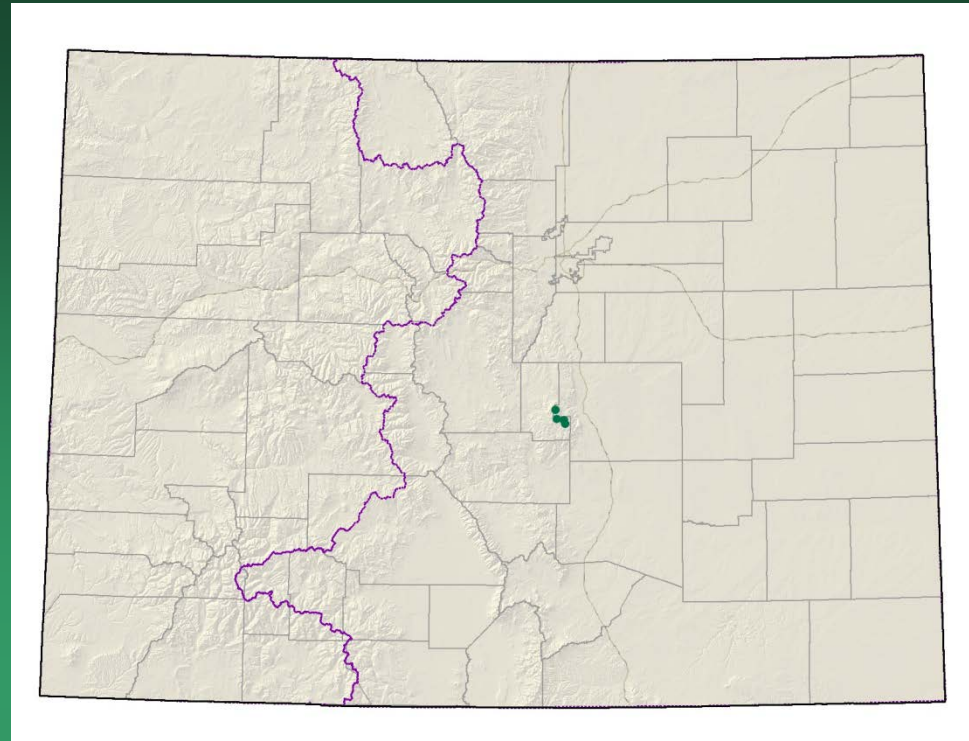
Mimulus gemmiparus



Oreoxis humilis

Pike's Peak alpine parsley

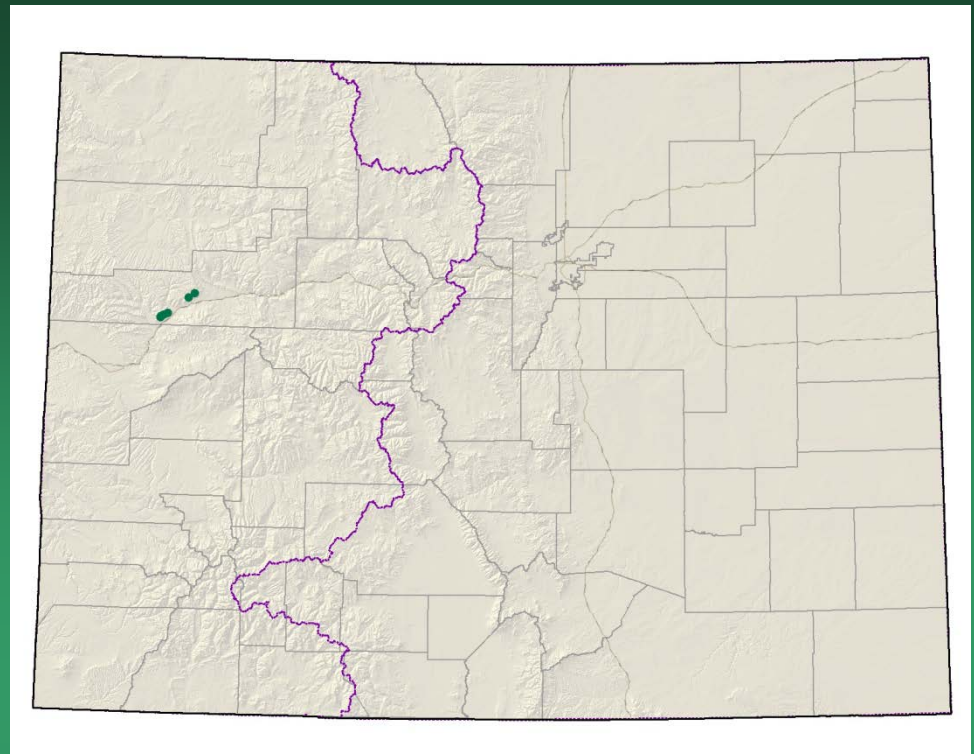
- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic (El Paso and Teller counties)
- Last observed: 2008
- Occurrences: 3 principal occurrences
- Individuals: 4,340 (tens of thousands estimated)
- Primary threats: road erosion and construction, structure maintenance, motorized and non-motorized recreation, herbivory, weeds
- Land ownership/management: Pike National Forest, private (Colorado Springs Utilities)



Oreoxis humilis



Penstemon debilis
Parachute penstemon



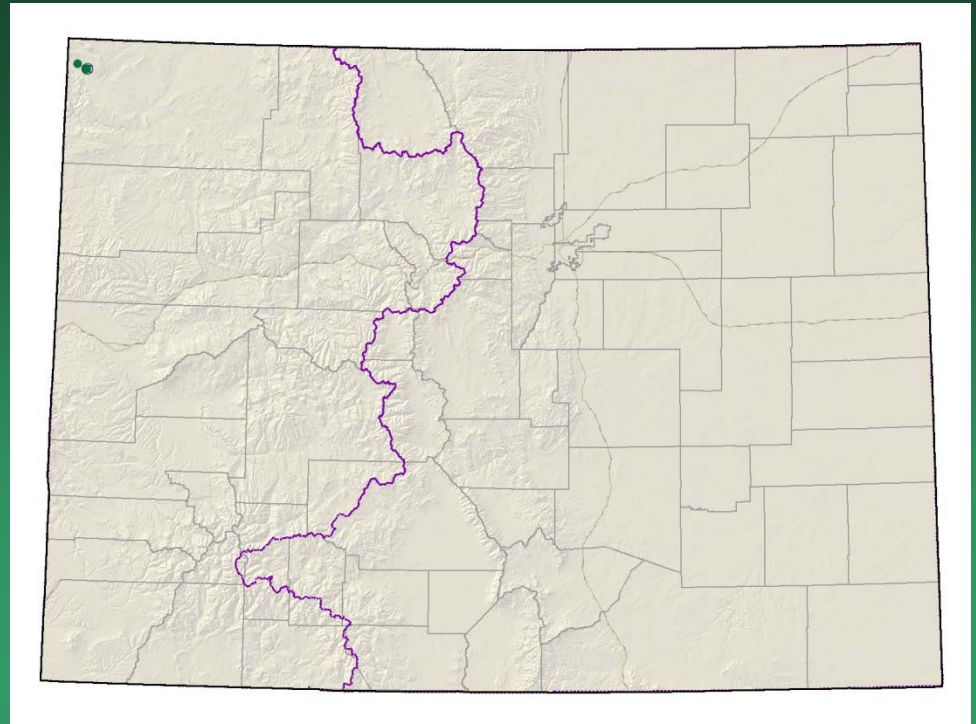
- Federal status: Candidate, BLM
- sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Garfield County
- Last observed: 2009
- Occurrences: 6 (2 D ranked)
- Individuals: 7600
- Primary threats: oil and gas development, oil shale development, recreation
- Land ownership/management: private, BLM



Penstemon debilis

Penstemon gibbensii

Gibbens' beardtongue



- Federal status: BLM sensitive
- Heritage ranks: G1G2/S1
- Global distribution: SC Wyoming, NE Utah, and NW Colorado (Moffat County)
- Last observed in Colorado: **2010**
- Occurrences: 7 total, **2 in CO**
- Individuals: 17,000 individuals total, **5200 in Colorado**
- Primary threats in CO: noxious weeds, grazing, recreational activities, and uranium mining
- Land ownership in CO: BLM, National Wildlife Refuge

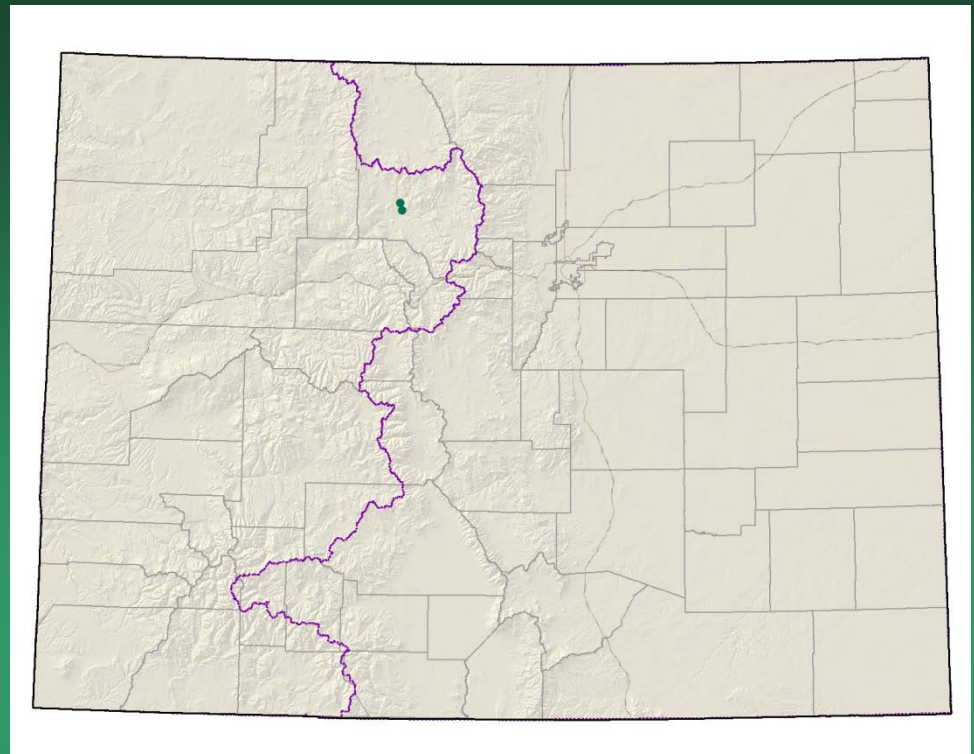
Penstemon gibbensii



Penstemon penlandii

Penland beardtongue

Conservation Action Plan



- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2010
- Occurrences: 2
- Individuals: 8000-12,000
- Primary threats: road maintenance (grading, spraying, snow plowing), ORV use
- Land ownership/management: BLM, private

Penstemon penlandii

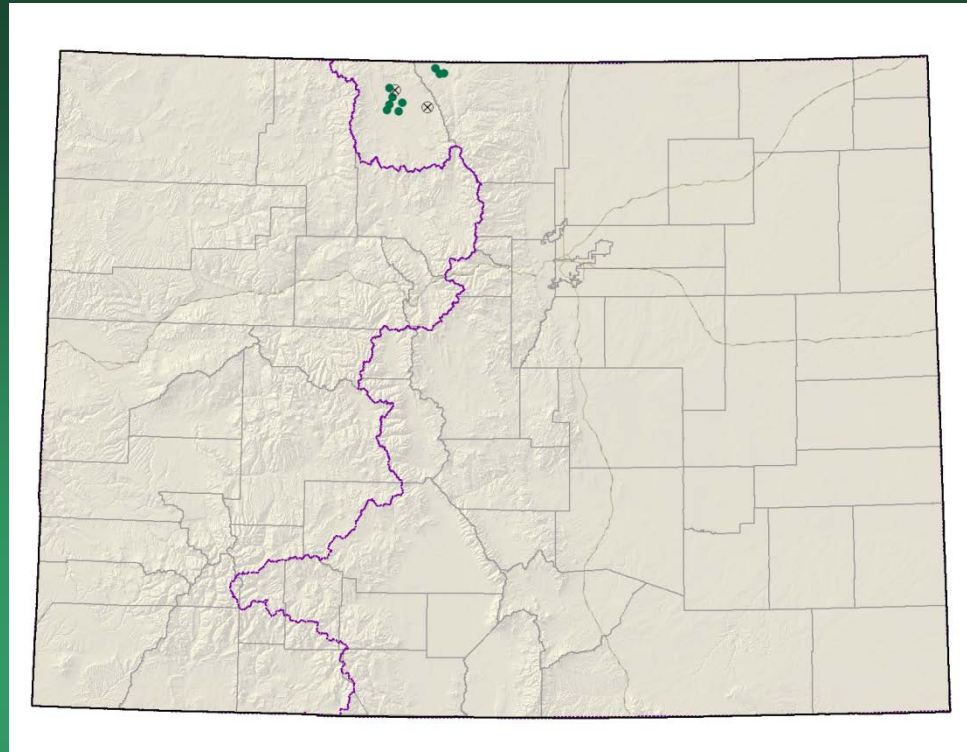


Phacelia formosula

North Park phacelia

Conservation Action Plan

- Federal status: Endangered
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic
- Last observed: 2009
- Occurrences: 11 (2 are historical)
- Individuals: 4500
- Primary threats: ORV use, coal extraction, overgrazing, oil and gas development
- Land ownership/management: BLM, private, USFWS, State



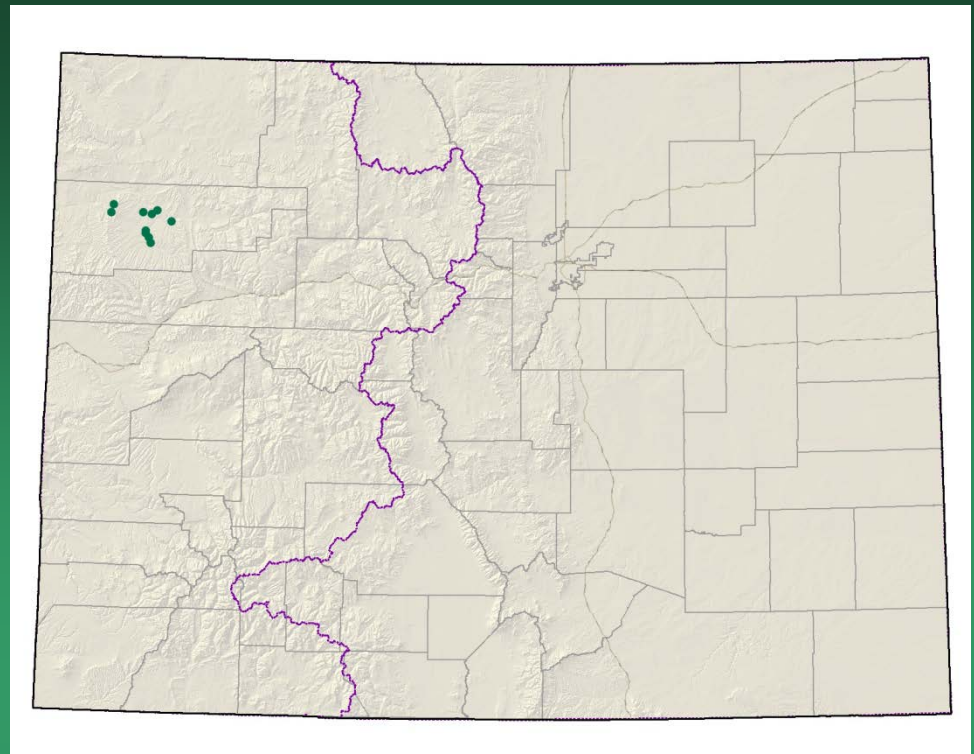


Phacelia formosula

Physaria obcordata

Piceance twinpod

Conservation Action Plan



- Federal status: Threatened
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic
- Last observed: 2010
- Occurrences: 10
- Individuals: 25,000
- Primary threats: oil and gas development, oil shale and nahcolite mining, ORV use, trampling by wild horses
- Land ownership/management: BLM, state, private



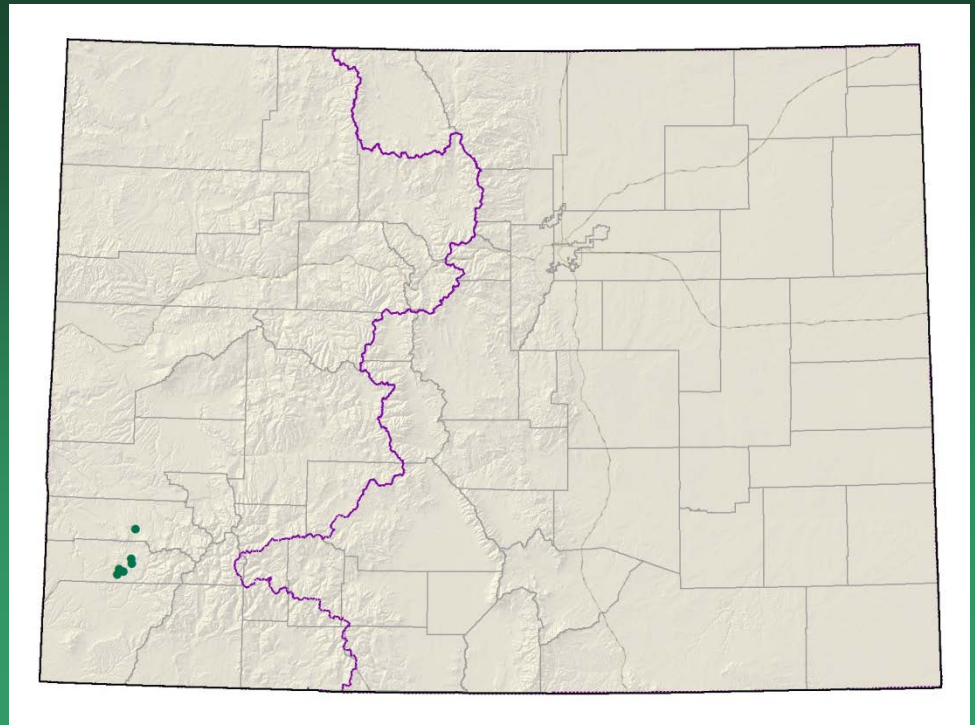
Physaria obcordata



Physaria pulvinata

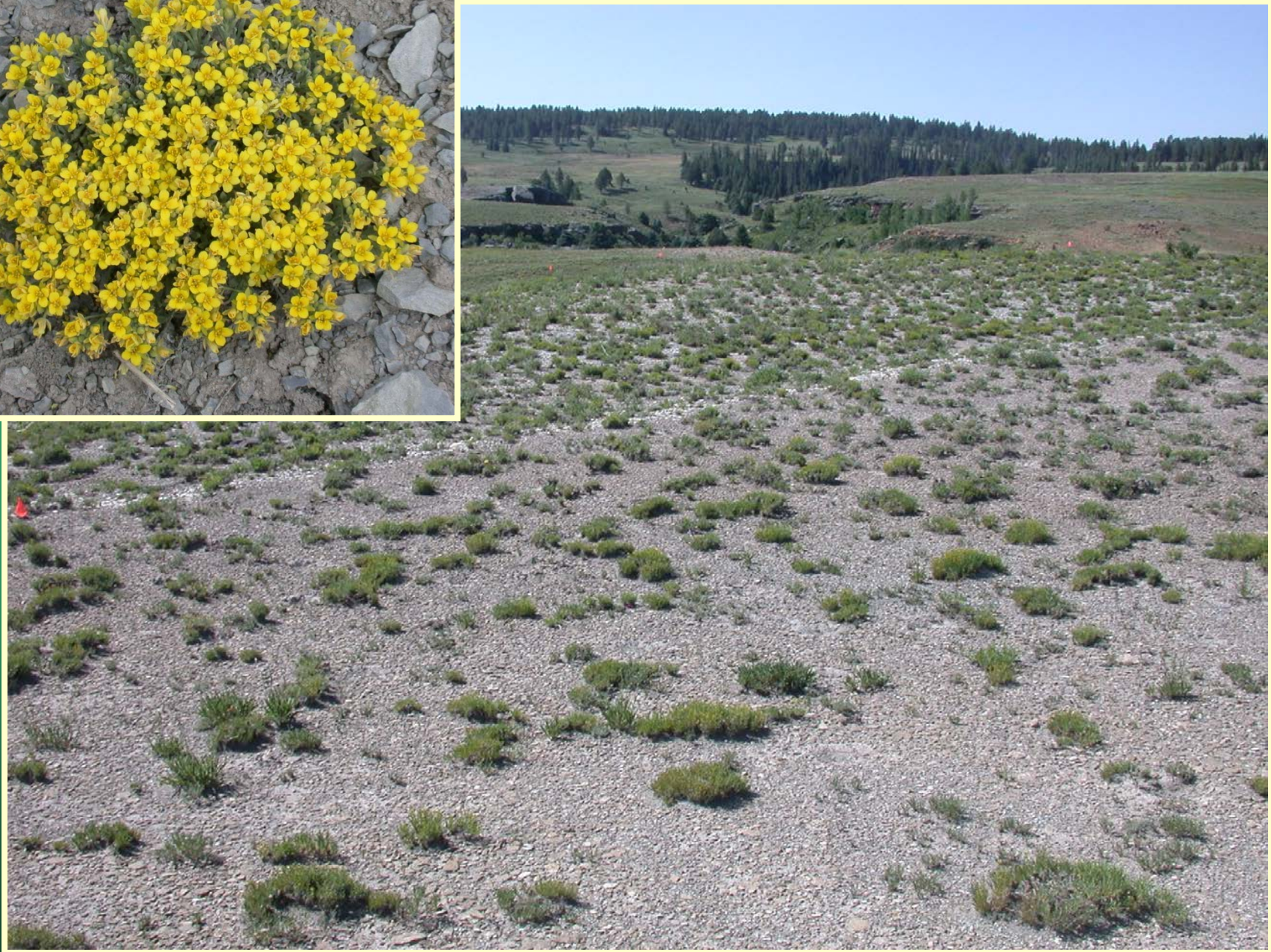
Cushion bladderpod

Conservation Action Plan



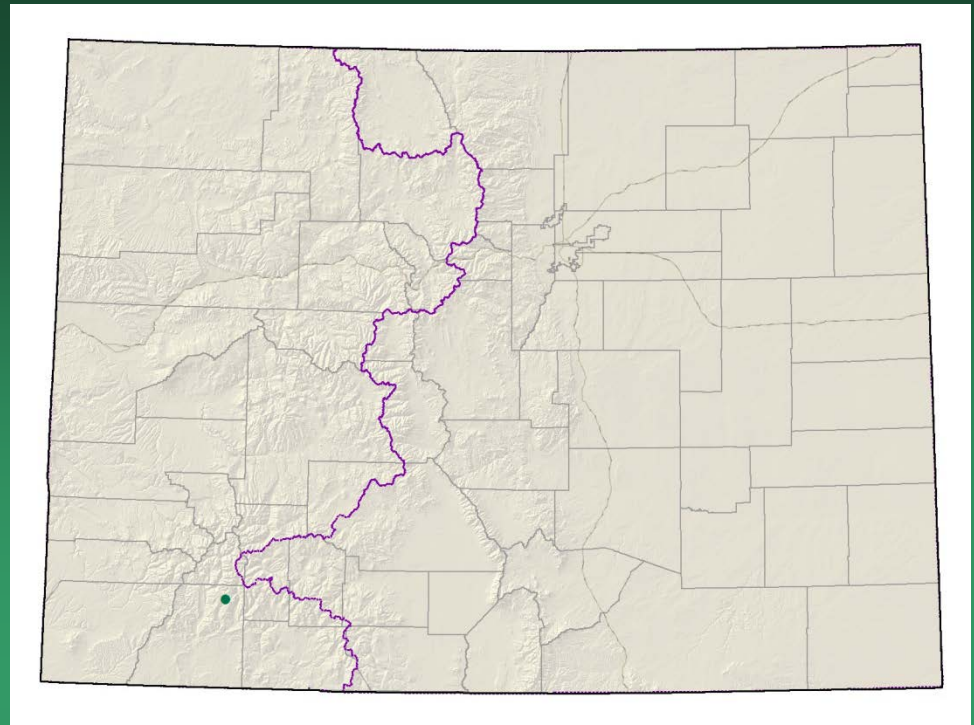
- Federal status: **BLM** & USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, San Miguel and Dolores counties
- Last observed: **2009**
- Occurrences: **6**
- Individuals: **22,000**
- Primary threats: recreation, livestock trampling, weed control, habitat modification for sage grouse management, roads
- Land ownership/management: Colorado: Miramonte SWA and Lone Mesa State Park, San Juan NF; BLM, private

Physaria pulvinata



Physaria scrotiformis

West Silver bladderpod



- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, La Plata County
- Last observed in Colorado: 2006
- Colorado occurrences: 1
- Colorado individuals: unknown
- Primary threats: unknown
- Land ownership/management: San Juan NF

Physaria scrotiformis

