

Review of Previous Meetings

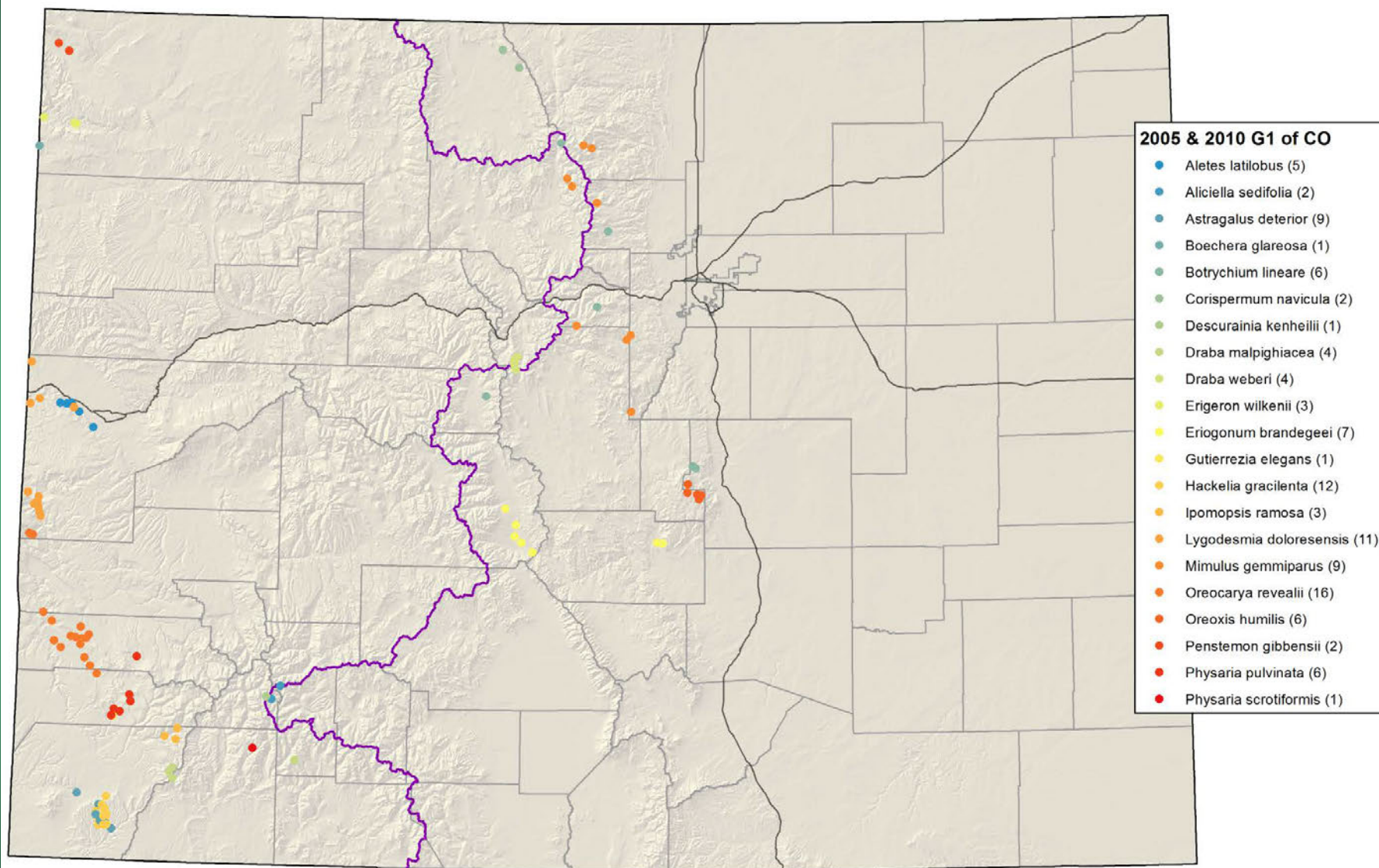
Colorado Rare Plant Symposia

Statewide G1 (2005/2010)

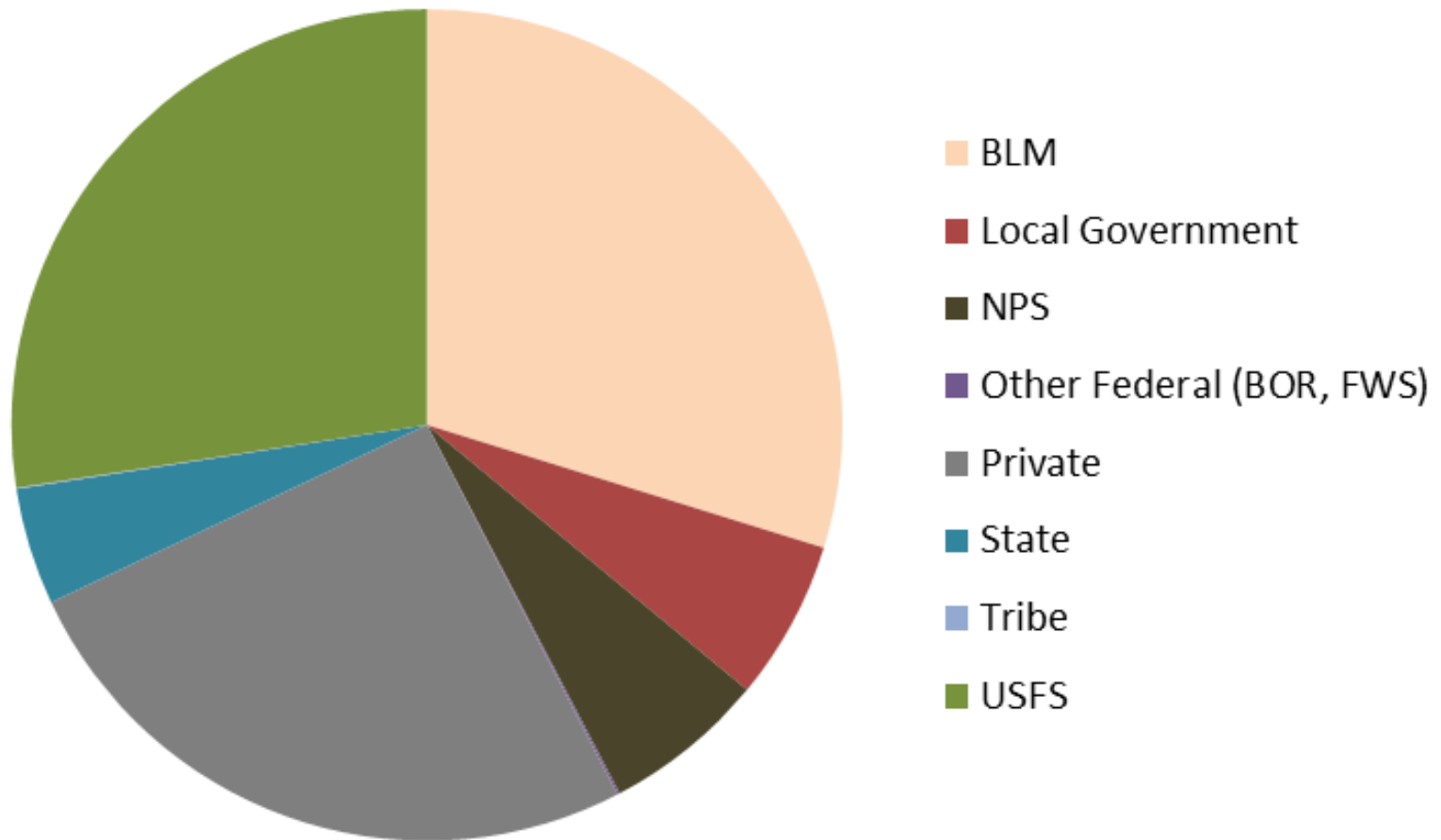
SE Colorado G2 (2006/2012)



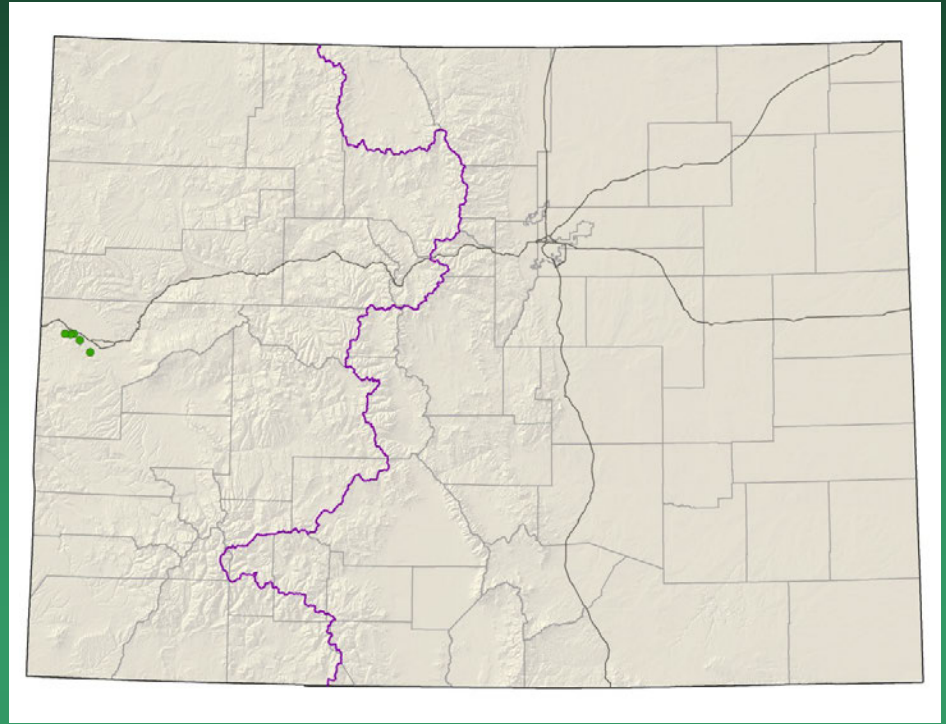
2005/2010
Pagosa Springs/Denver
Statewide
G1 species
(excluding T,E&C species)



Land Ownership of G1 Plant Species of Colorado

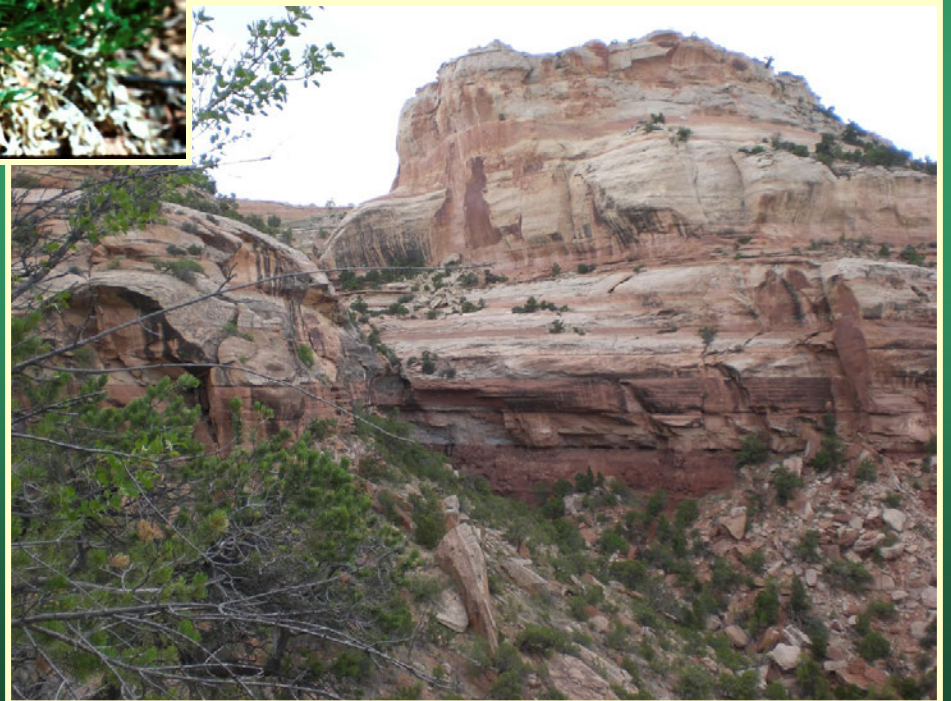


Aletes latilobus=
Lomatium latilobum
Canyonlands biscuitroot

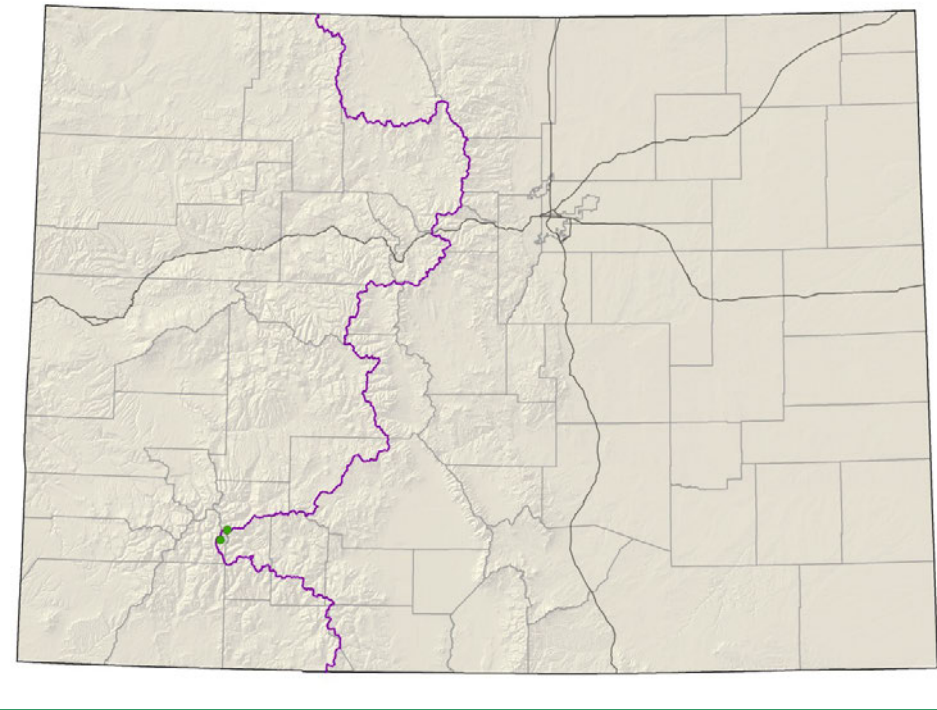


- Federal status: BLM sensitive
- Heritage ranks: G1 **G2**/S1
- Global distribution: Utah (Grand and San Juan counties) and Colorado (Mesa County-- Colorado National Monument and Rattlesnake Canyon)
- Elevation range: 4,540-5,800 ft.
- Last observed in Colorado: 2009
- Colorado occurrences: 5
- Colorado individuals: >5,000
- Primary threats: Habitat disturbance, Park developments, trampling by hikers
- Land ownership/management: BLM, NPS

Aletes latilobus



Aliciella sedifolia
=*Gilia sedifolia*
Stonecrop gilia



- Federal status: BLM & USFS
- sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, San Juan Mountains, Hinsdale County
- Elevation range: 12,720-13,830 ft.
- Last observed: 2007
- Occurrences: 2
- Individuals: 1,100
- Primary threats: non-motorized recreation
- Land ownership/management: USFS

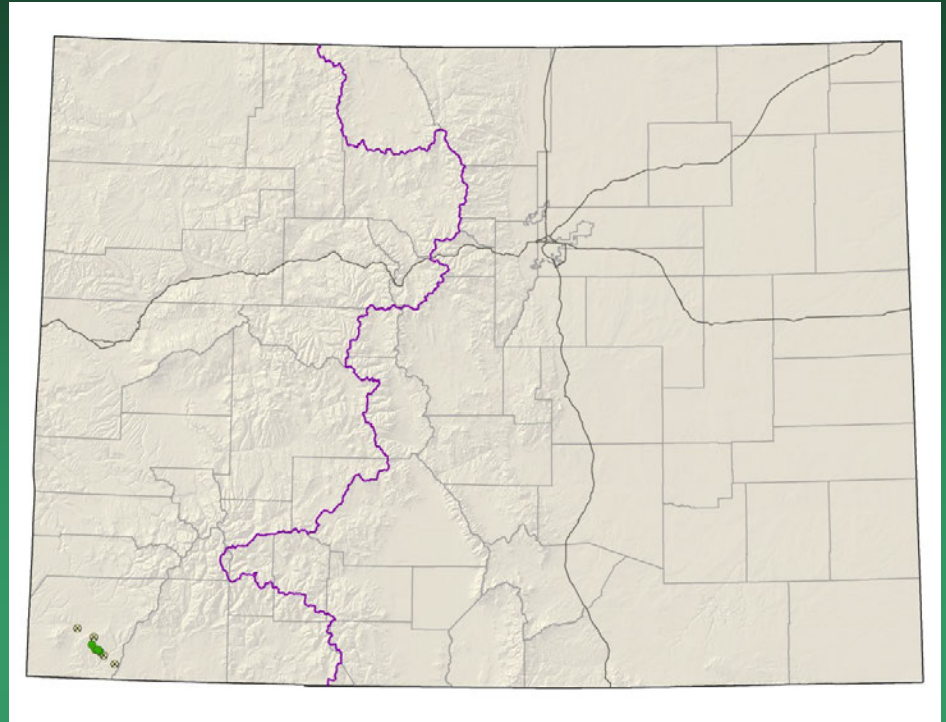
Aliciella sedifolia



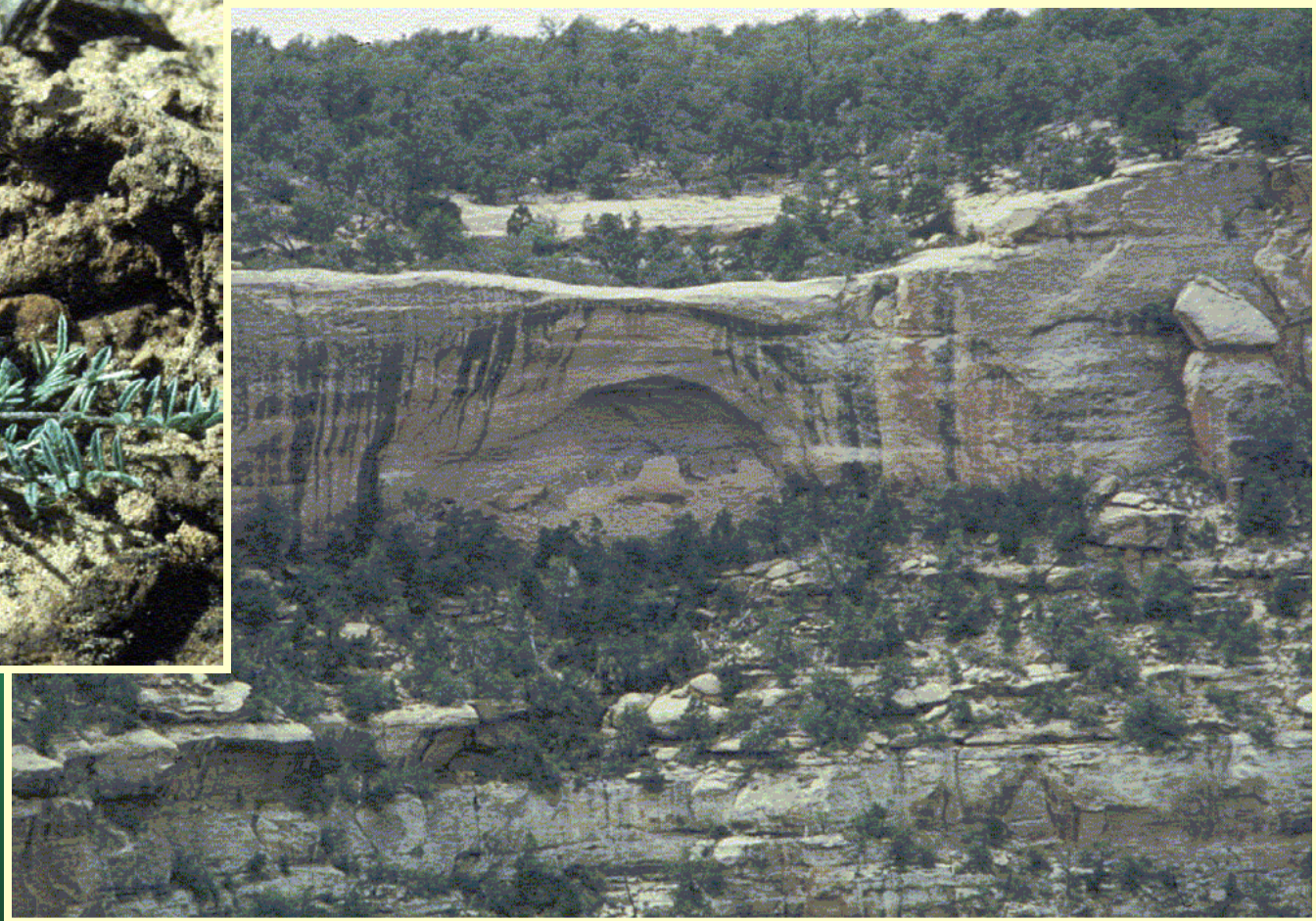
Astragalus deterior

Cliff Palace milkvetch

- Federal status: None
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic (Montezuma County)
- Elevation range: 5,740-8,130 ft.
- Last observed in Colorado: 2012
- Colorado occurrences: 10 (5 historical)
- Colorado individuals: ~5000
- Primary threats: Non-motorized recreation, exotics
- Land ownership/management: BLM, NPS, private, tribe



Astragalus deterior



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

As a result of 2011
surveys the occurrence
in CO was determined to
be *A. lonchocarpus*

- Federal status: none
- Heritage ranks: G4T1/SNA
- Global distribution: Uintah County, Utah
- Last observed in Colorado: 1991
- Colorado occurrences: 0
- Colorado individuals:
- Primary threats: unknown, area heavily grazed in past, OHV and oil & gas development for UT occurrences.
- Land ownership/management: BLM, NPS, state, private, tribe

Astragalus lonchocarpus
var. *hamiltonii*



Boechera glareosa snowbasin rockcress



- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Utah and Colorado (Moffat county)
- Elevation range: 6,715-6,970 ft.
- Last observed in Colorado: 2002
- Colorado occurrences: 1
- Colorado individuals: unknown
- Primary threats: unknown
- Land ownership/management: BLM

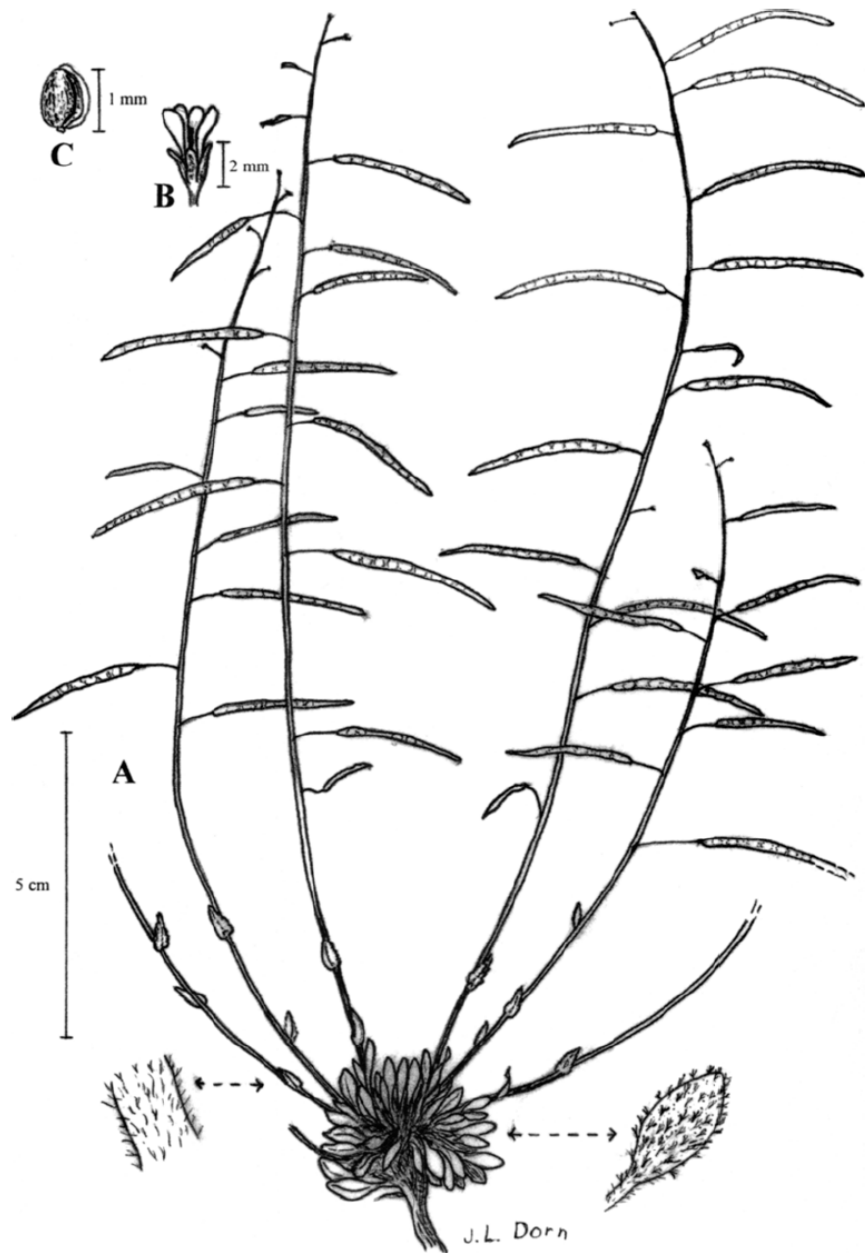
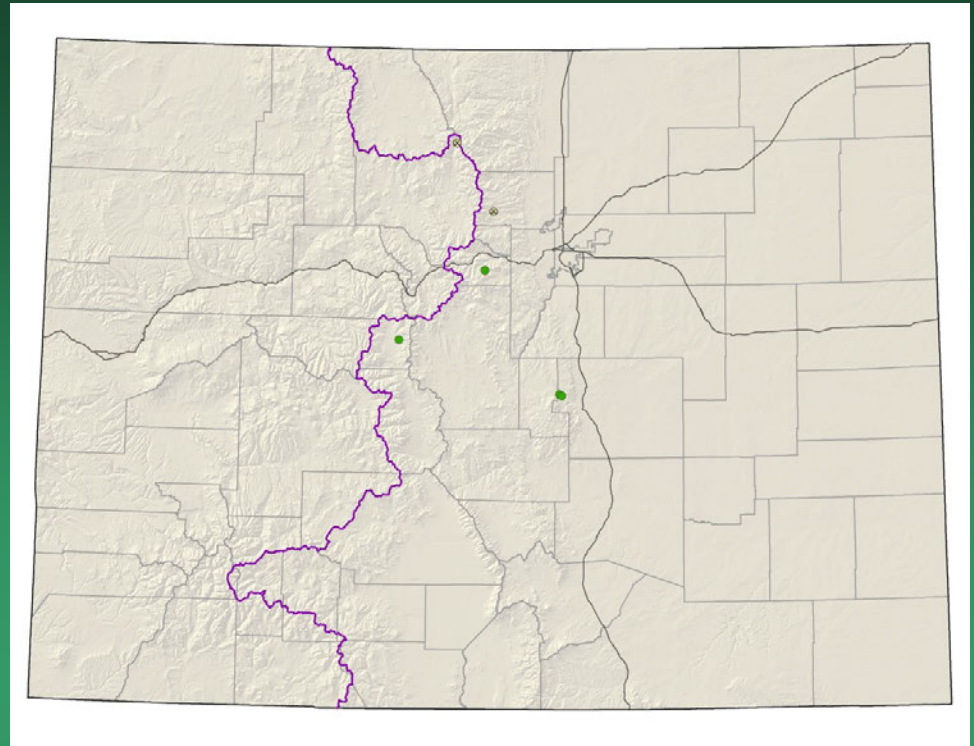


FIG. 1. *Boechera glareosa*. A. Fruiting plant. B. Flower. C. Seed. (From Dorn 8734 & 9106, RM.)

Boechera glareosa

Botrychium lineare =
Botrychium campestre ssp. *lineare*
Narrowleaf grapefern



- Federal status: Removed;
USFS Sensitive
- Heritage ranks: G2G3 / S2S3
- Global distribution: New Brunswick, Quebec, **Alaska**, Idaho, Montana, Oregon, California, **South Dakota**, Wyoming, and Colorado
- Elevation range: 8,540-11,900 ft.
- Last observed in Colorado: 2005+
- Colorado occurrences: **10+**
- Colorado individuals: **500**
- Primary threats: road maintenance, weeds
- Land ownership/management: BLM, local government, NPS, state, private, USFS

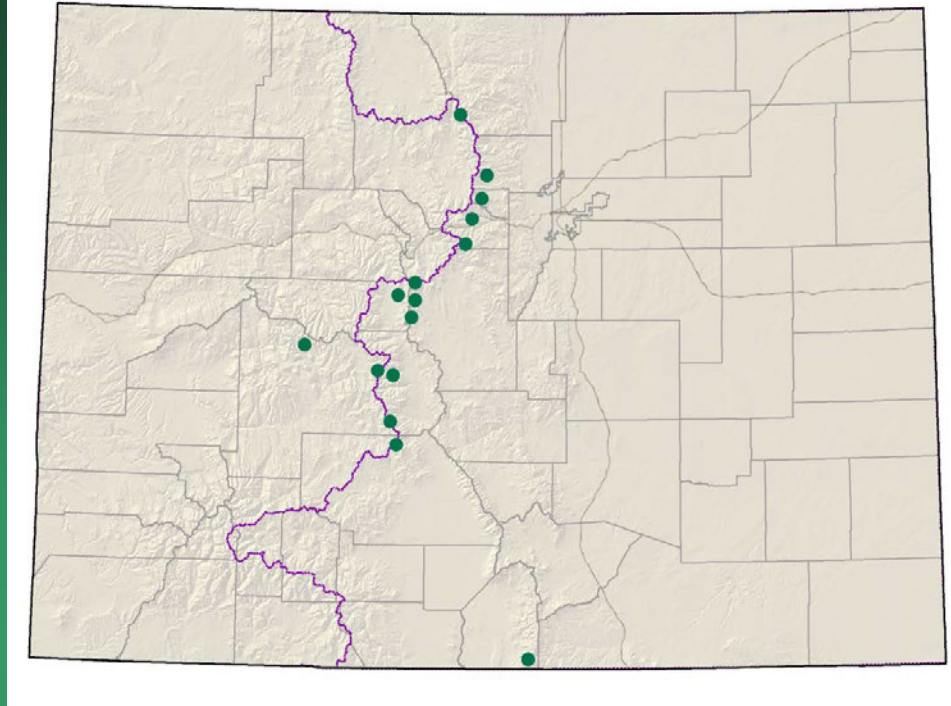
Botrychium lineare



Botrychium tax. nov.

“*furcatum*” =

Botrychium campestre
forkleaved moonwort



- Federal status: none
- Heritage ranks: GNR / SNR
- 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: to be subsumed under *B. campestre*
- Colorado individuals: ~1200
- Primary threats: maintenance and improvements of roads and earthen dams
- Land ownership/management: USFS, NPS, Private

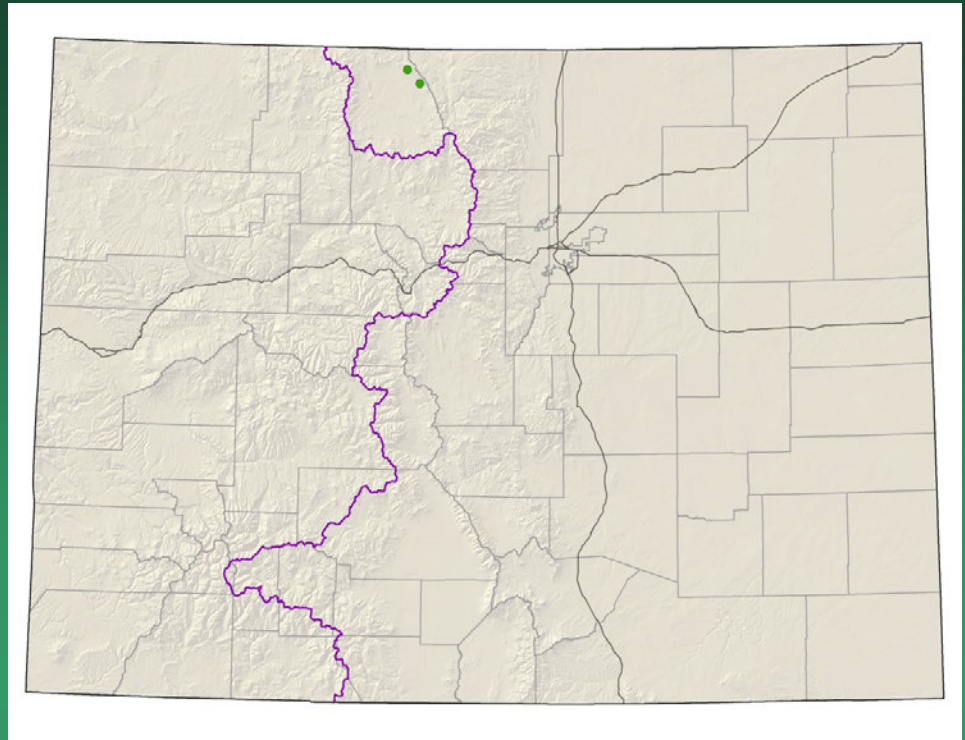
Botrychium tax. nov. "furcatum"



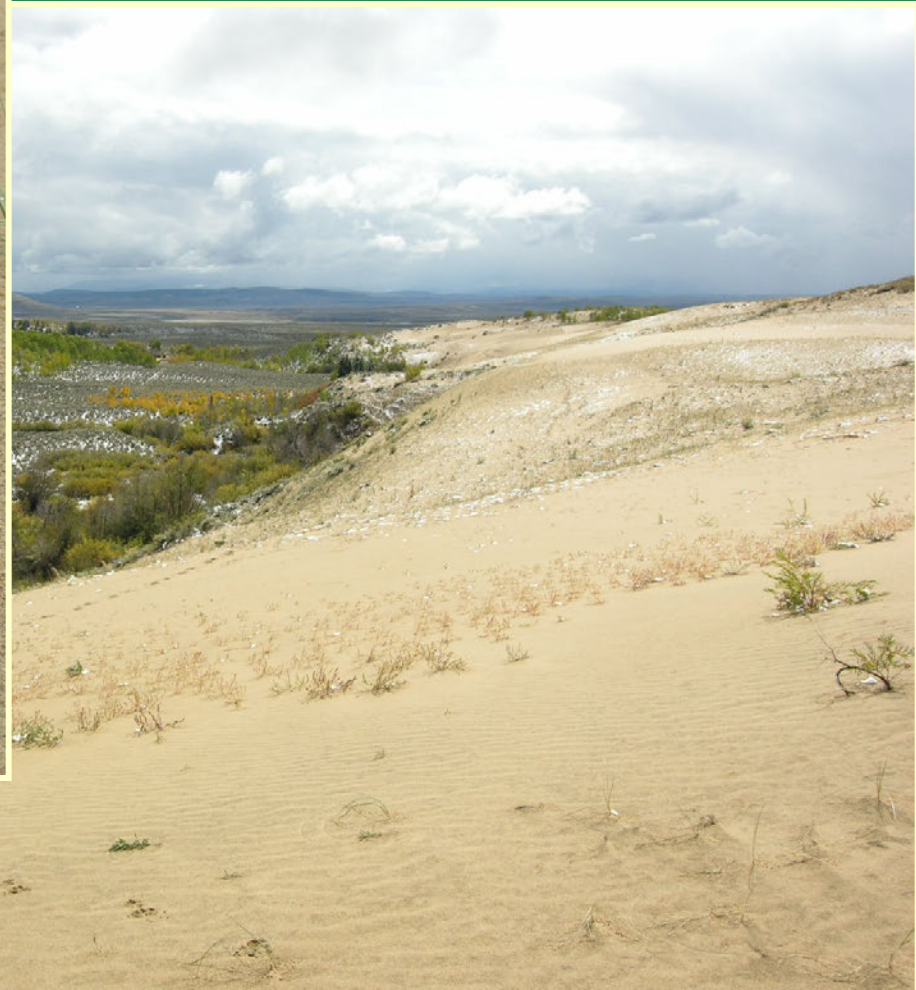
Corispermum navicula

Crescent bugseed

- Federal status: BLM sensitive
- Heritage ranks: G1?/S1
- Global distribution: Colorado endemic (Jackson County), possibly Oklahoma?
- Elevation range: 8,230-8,730 ft.
- Last observed: 2014
- Occurrences: 2 principal occurrences
- Individuals: common locally
- Primary threats: off-road vehicle use
- Land ownership/management: BLM, state



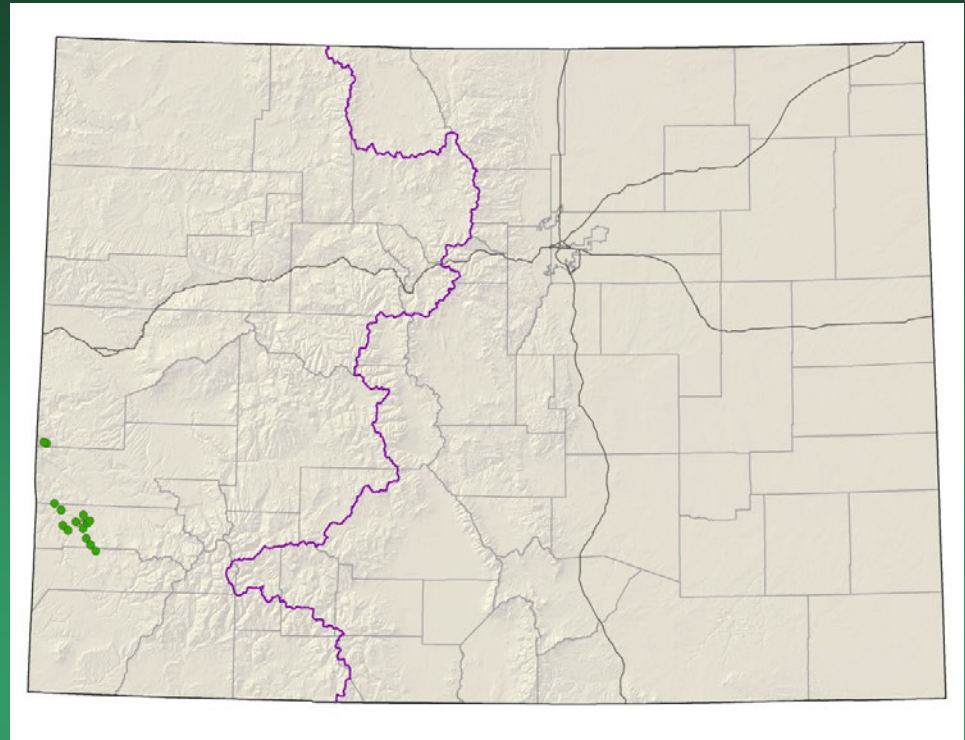
Corispermum navicula

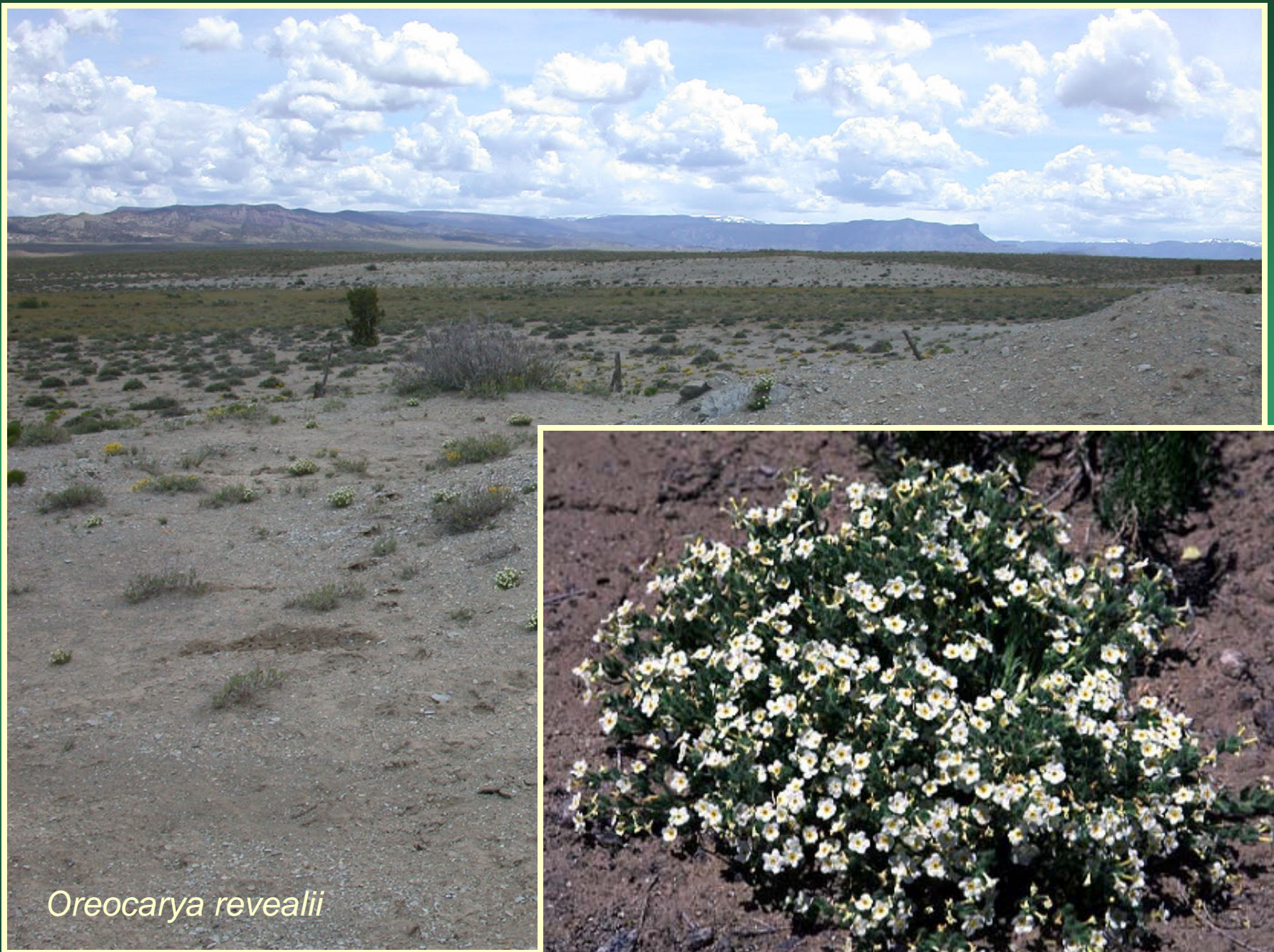


Oreocarya revealii=
Cryptantha gypsophila
Gypsum Valley Cat-eye

Conservation Action Plan

- Federal status: BLM Sensitive
- Heritage ranks: G2/S2
- Global distribution: Colorado endemic, Mesa, Montrose & San Miguel Counties
- Elevation range: 5,400-6,790 ft.
- Last observed: 2012
- Occurrences: 16 (1 historical)
- Individuals: 25,100+
- Primary threats: oil and gas development, grazing, ATVs, recreation, roads
- Land ownership/management: BLM, state, private

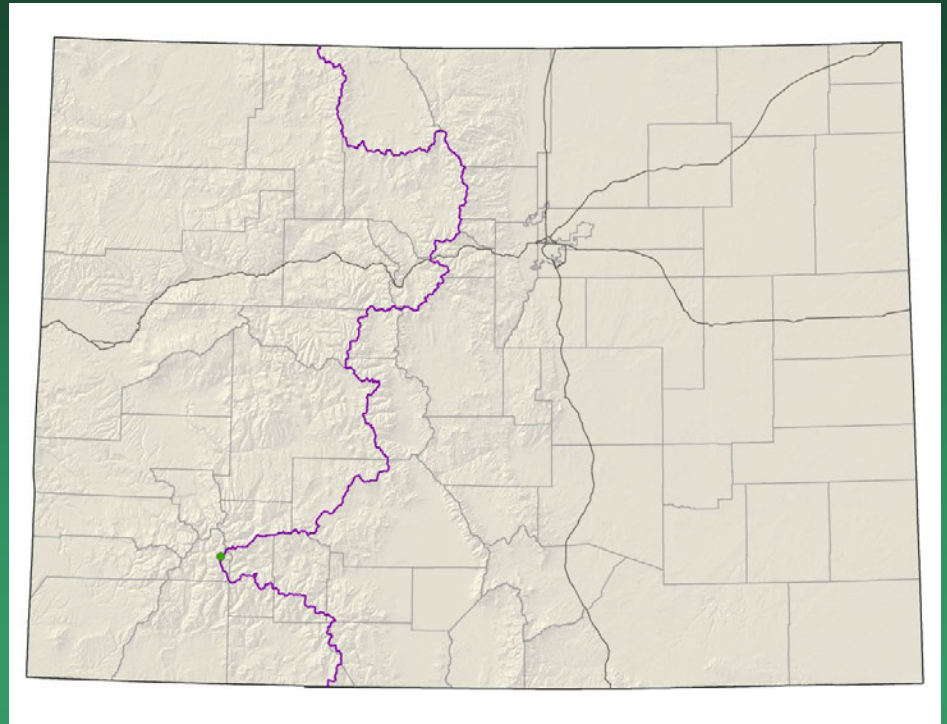




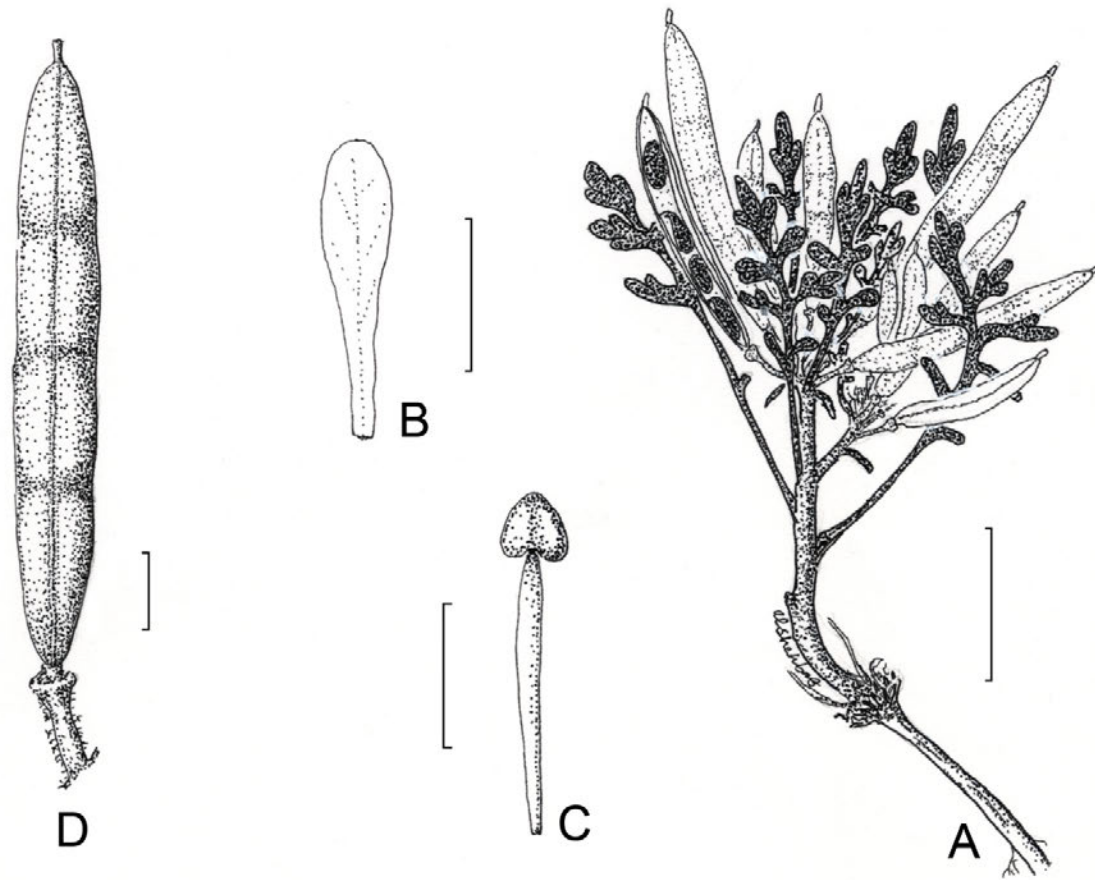
Oreocarya revealii

Descurainia kenheilii

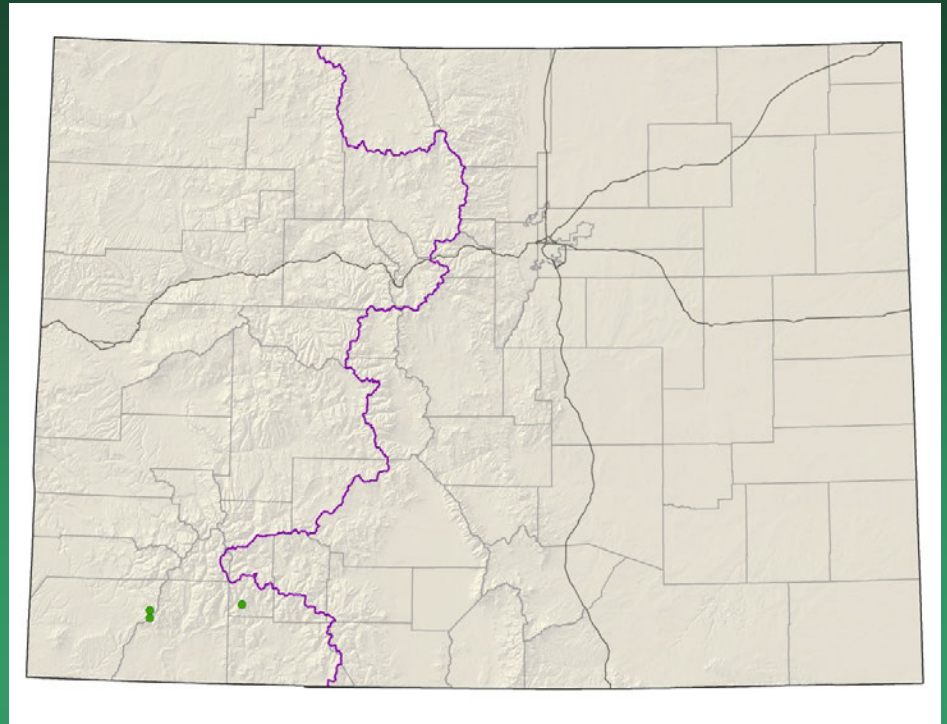
Heil's tansy mustard



- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: Endemic to CO; San Juan County
- Elevation range: 12,200-12,950 ft.
- Last observed in Colorado: 1997
- Colorado occurrences: 1
- Colorado individuals: unknown
- Primary threats: unknown
- Land ownership/management: BLM, private, USFS



Draba malphigiaceae whitlow- grass



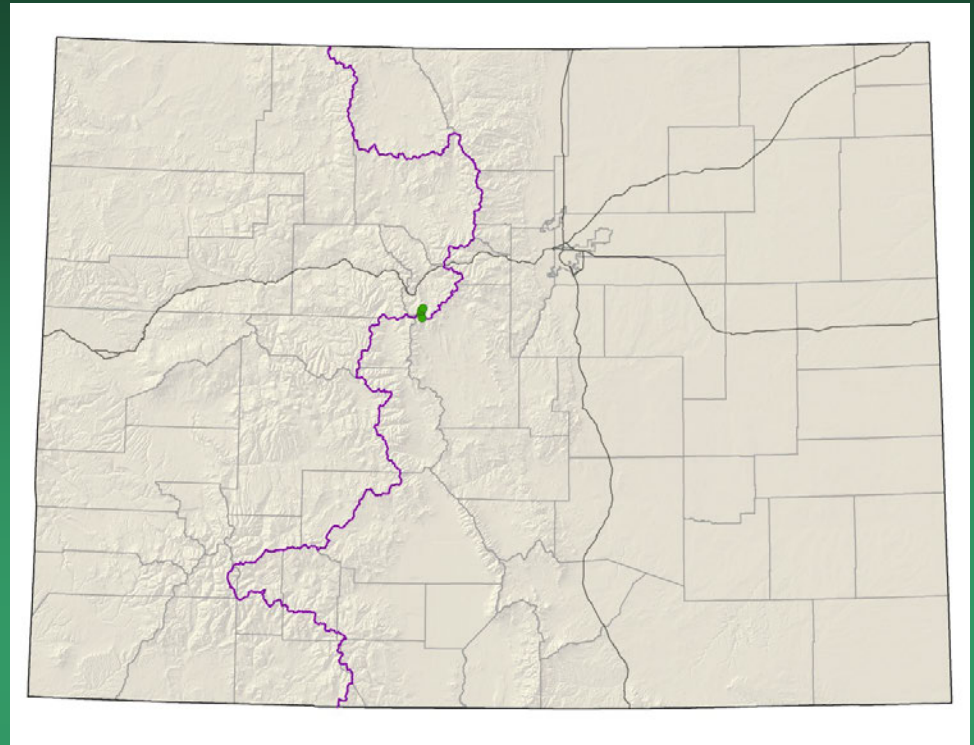
- Federal status: none
- Heritage ranks: G1?/**S1?**
- Global distribution: Endemic to CO; Hinsdale, La Plata and Montezuma counties
- Elevation range: 9,760-12,990 ft.
- Last observed in Colorado: **2012**
- Colorado occurrences: 4
- Colorado individuals: unknown
- Primary threats: unknown
- Land ownership/management: private, USFS

Draba malphigiaceae



Draba weberi

Weber's draba



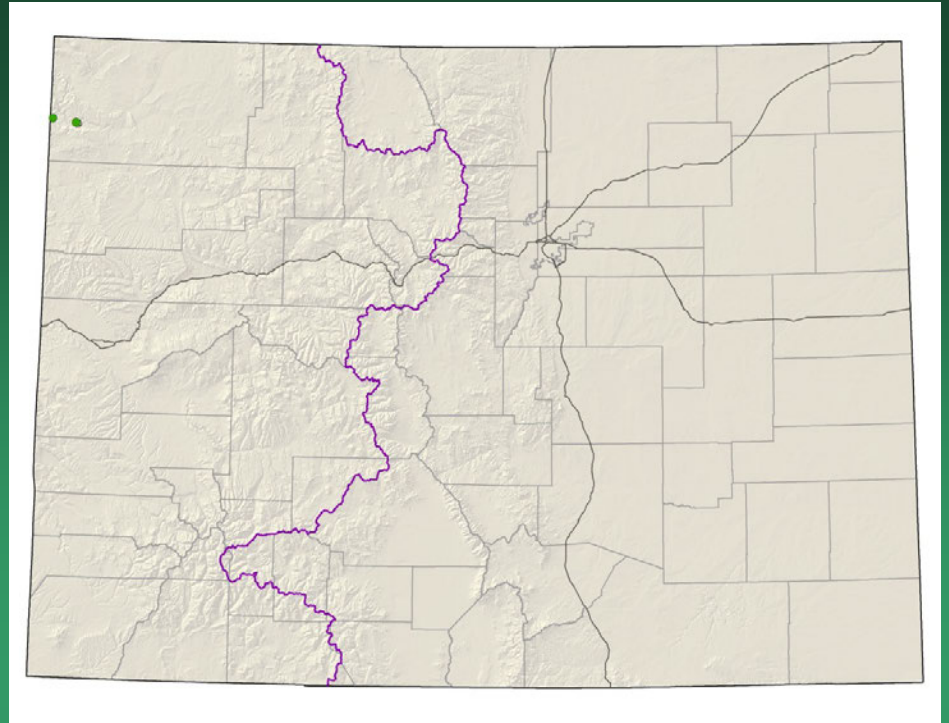
- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Park and Summit counties
- Elevation range: 11,120-11,160 ft.
- Last observed: 2014
- Occurrences: 4?
- Individuals: 20-100
- Primary threats: road and dam construction and maintenance, environmental stochasticity, recreation, mining, noxious weeds, climate change
- Land ownership/management: private, USFS

Draba weberi



Erigeron wilkenii

Dieter's fleabane



- Federal status: none
- Heritage ranks: G1/S1
- Global distribution: endemic to Colorado (Dinosaur National Monument, Moffat County)
- Elevation range: 5,160-6,030 ft.
- Last observed: 2012
- Occurrences: 3 (1 is historical)
- Individuals: 1,000-3,000
- Primary threats: no specific threats known
- Land ownership: NPS

Erigeron wilkenii

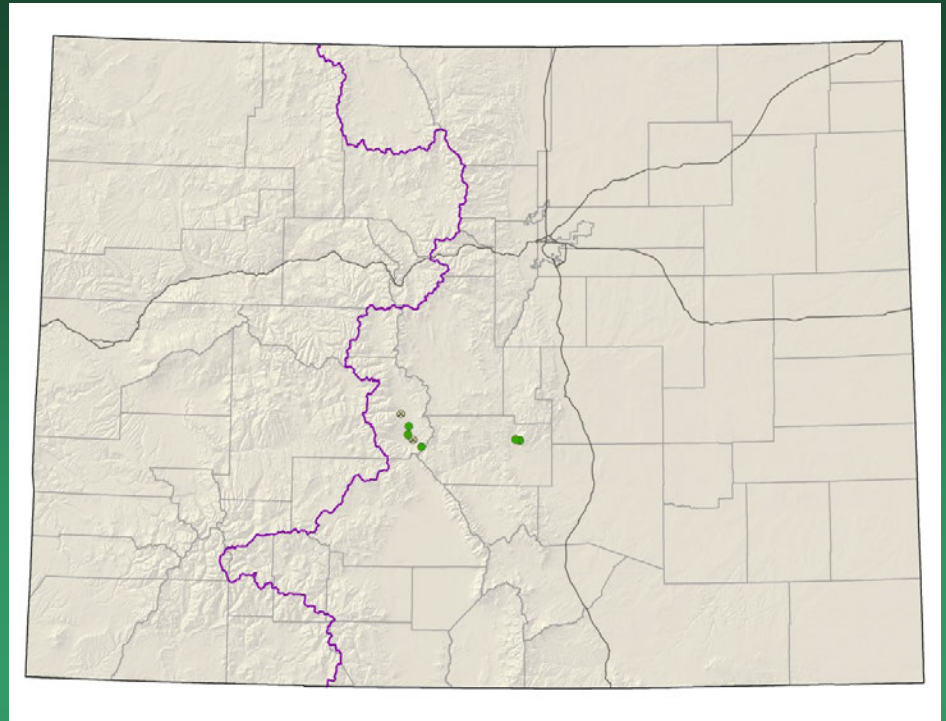


Eriogonum brandegeei

Brandegee's buckwheat

Conservation Action Plan

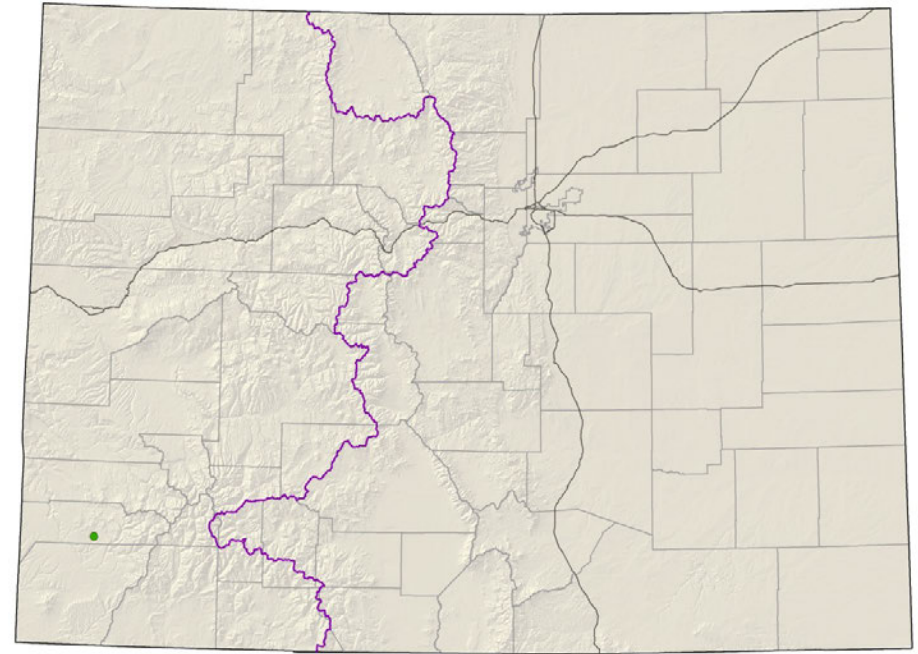
- Federal status: USFS & BLM
- sensitive
- Heritage ranks: G1G2/S1S2
- Global distribution: Colorado endemic, Chaffee and Fremont counties
- Elevation range: 5,715-8,650 ft.
- Last observed: 2013-14
- Individuals: 35,000+
- Occurrences: 8 (3 are historical)
- Primary threats: off-road vehicle use and other recreation, residential and commercial development, timbering, mining, highway maintenance, weeds, grazing
- Land ownership/management: BLM, state, private, USFS





Eriogonum brandegeei

Gutierrezia elegans
Lone Mesa
snakeweed
Conservation Action Plan



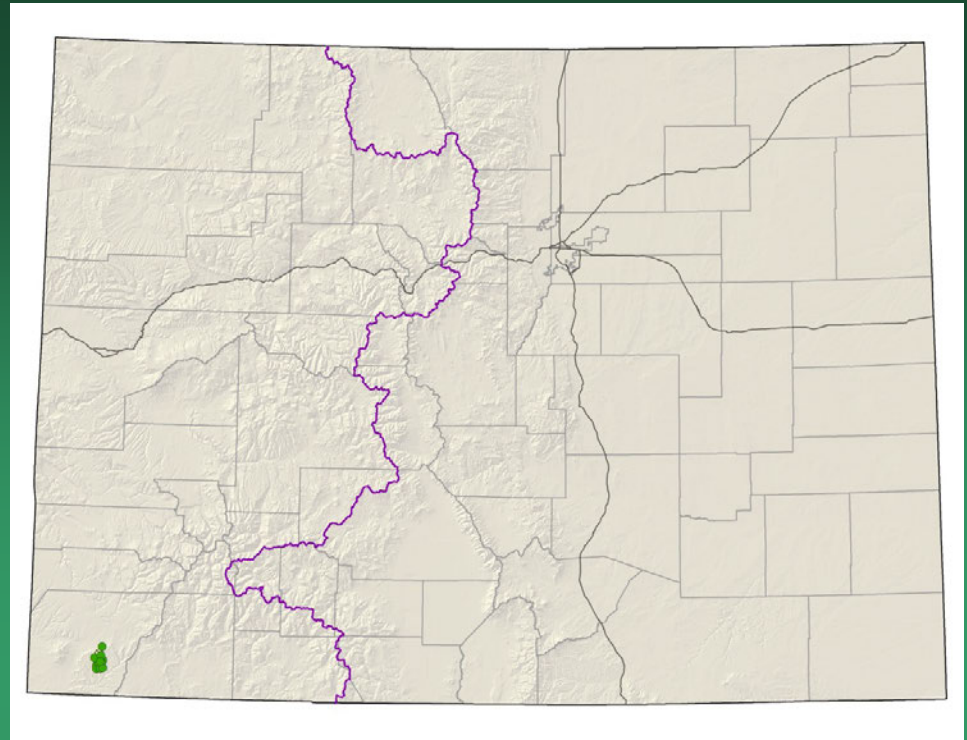
- Federal status: BLM & USFS
- sensitive
- Heritage ranks: G1/S1
- Global distribution: Endemic to Colorado; Dolores County
- Elevation range: 7,530-7,800 ft.
- Last observed in Colorado: 2012
- Colorado occurrences: 1
- Colorado individuals: 30,000
- Primary threats: grazing, recreation
- Land ownership/management: BLM, state, private, USFS



Gutierrezia elegans

Hackelia gracilenta

Mesa Verde stickseed



- Federal status: none
- Heritage ranks: **G1G2/S1S2**
- Global distribution: Colorado endemic, Mesa Verde National Park, Montezuma County
- Elevation range: 6,180-8,180 ft.
- Last observed: **2013**
- Occurrences: **12** (**1** is 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: BLM, NPS, private, tribe

Hackelia gracilentia

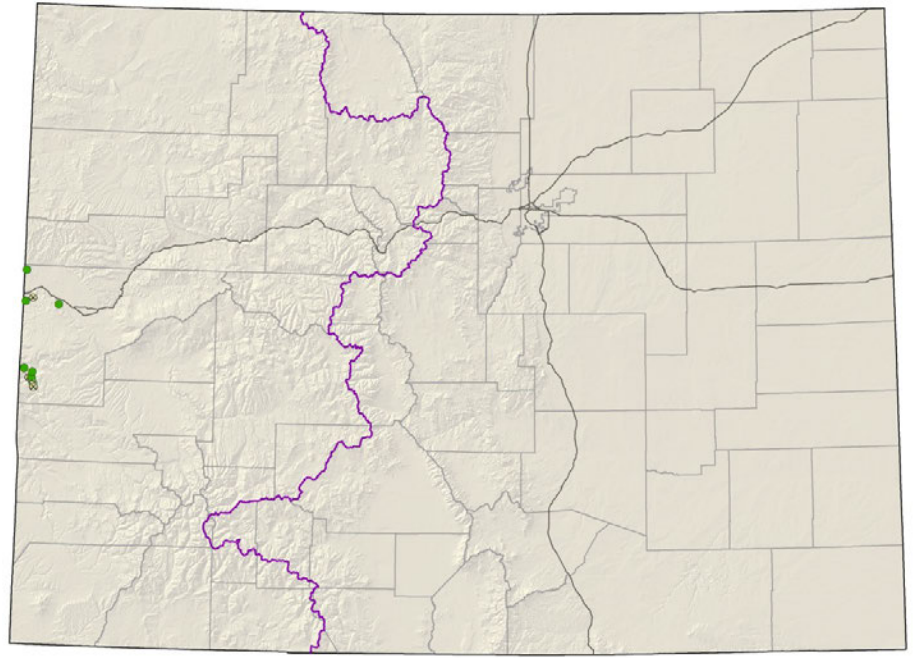


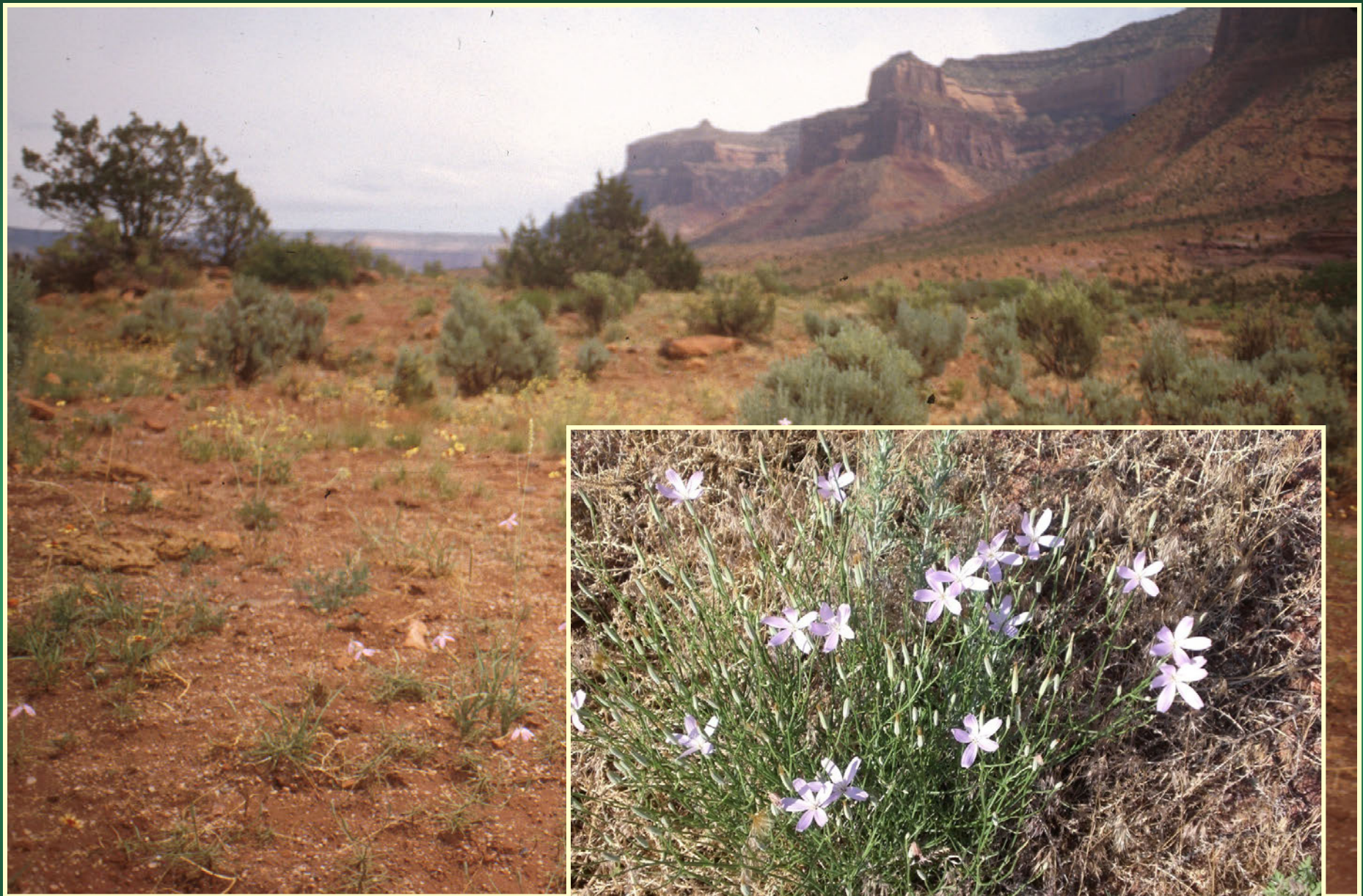
Lygodesmia doloresensis

Dolores River skeletonplant

Conservation Action Plan

- Federal status: BLM sensitive in CO
- Heritage ranks: G1G2/S1S2
- Global distribution: Utah and Colorado (Mesa county)
- Elevation range: 4,475-6,125 ft.
- Last observed in Colorado: 2012
- Colorado occurrences: 11 (4 are historical)
- Colorado individuals: 3700
- Primary threats: deer, rabbit, and cattle grazing, private land development, road maintenance, weeds
- Land ownership/management: BLM, private



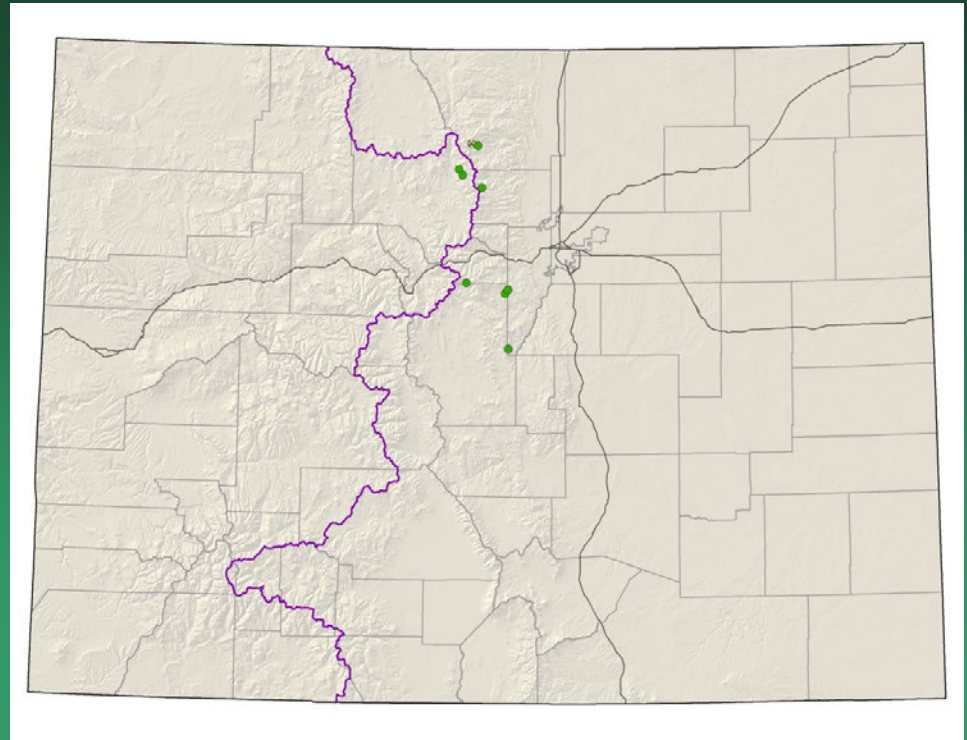


Lygodesmia doloresensis

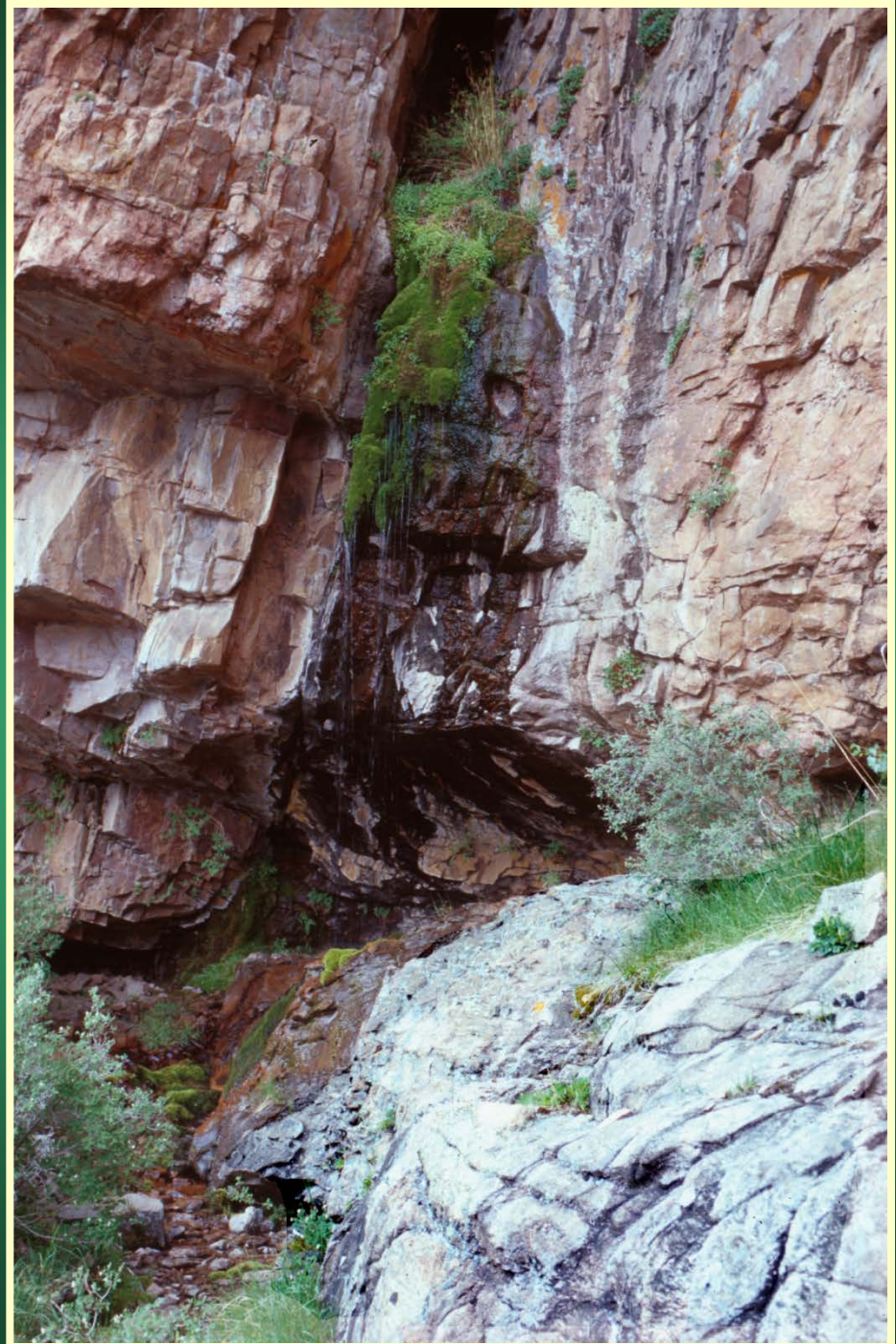
Mimulus gemmiparus

Budding monkeyflower

- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, Boulder, Clear Creek, Jefferson, Grand, and Larimer counties
- Elevation range: 8,360-11,200 ft.
- Last observed: 2013
- Occurrences: 9 (1 historical)
- Individuals: >125,000
- Primary threats: recreational activities, trampling, competition from other plants, interference with hydrology
- Land ownership/management: NPS, state, USFS



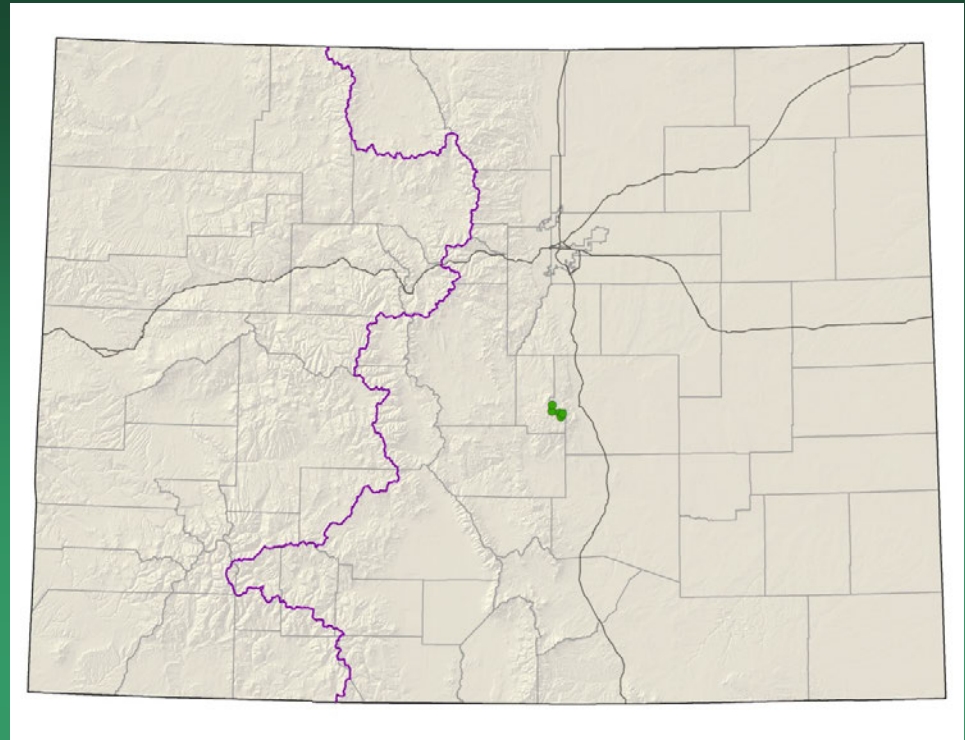
Mimulus gemmiparus



Oreoxis humilis

Pike's Peak alpine parsley

- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic (El Paso and Teller counties)
- Elevation range: 9,635-12,810 ft.
- Last observed: 2010
- Occurrences: 4 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: private, USFS

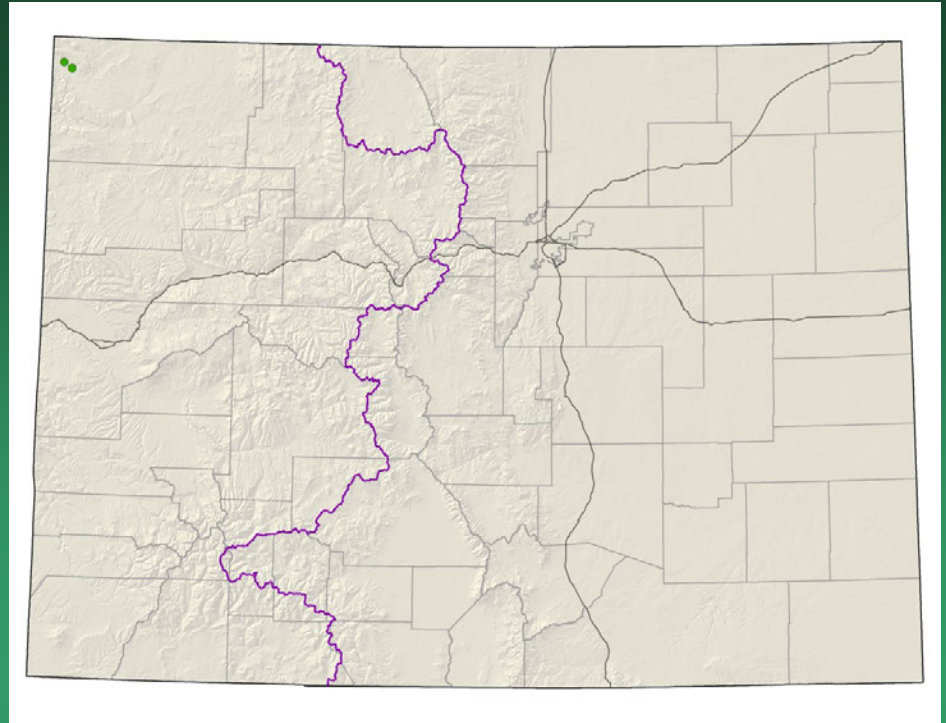


Oreoxis humilis



Penstemon gibbensii

Gibbens' beardtongue



- Federal status: BLM sensitive
- Heritage ranks: G1G2/S1
- Global distribution: SC Wyoming, NE Utah, and NW Colorado (Moffat County)
- Elevation range: 5,400-5,730 ft.
- Last observed in Colorado: 2010
- Occurrences: 2 in CO; 7 total
- Individuals: 5200 in Colorado; 17,000 individuals total
- Primary threats in CO: noxious weeds, grazing, recreational activities, and uranium mining
- Land ownership in CO: BLM, federal

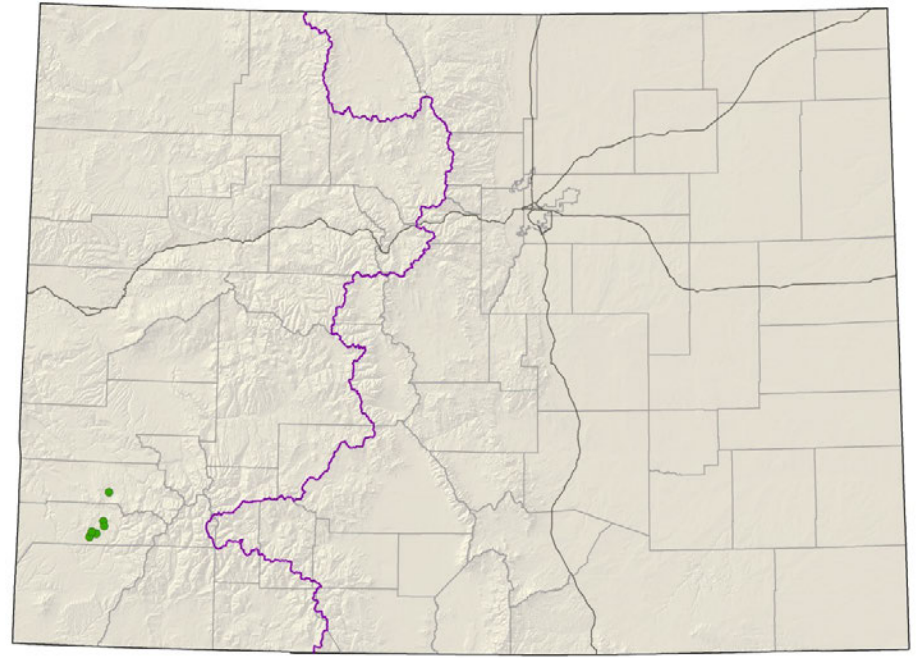
Penstemon gibbensii



Physaria pulvinata

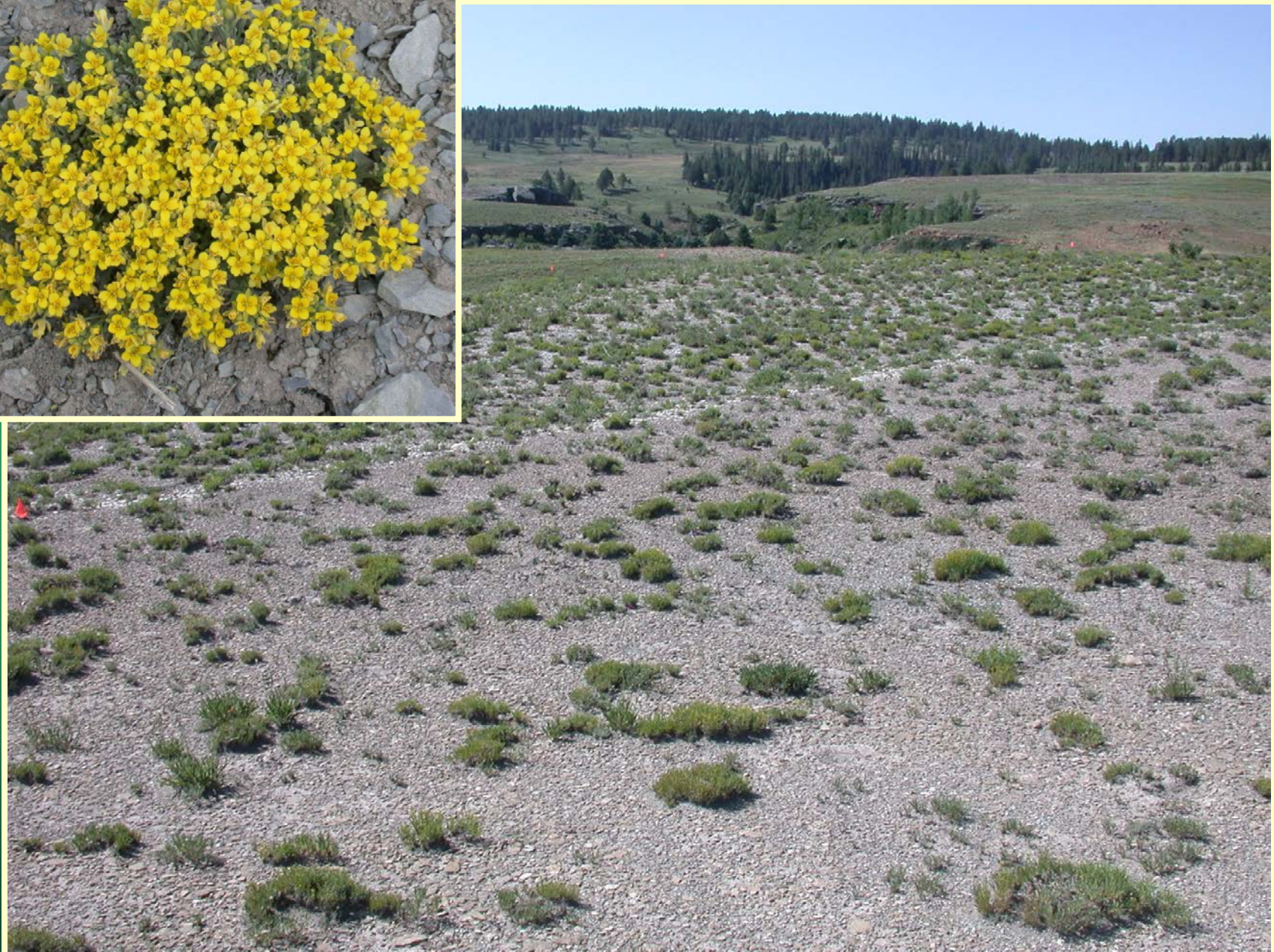
Cushion bladderpod

Conservation Action Plan



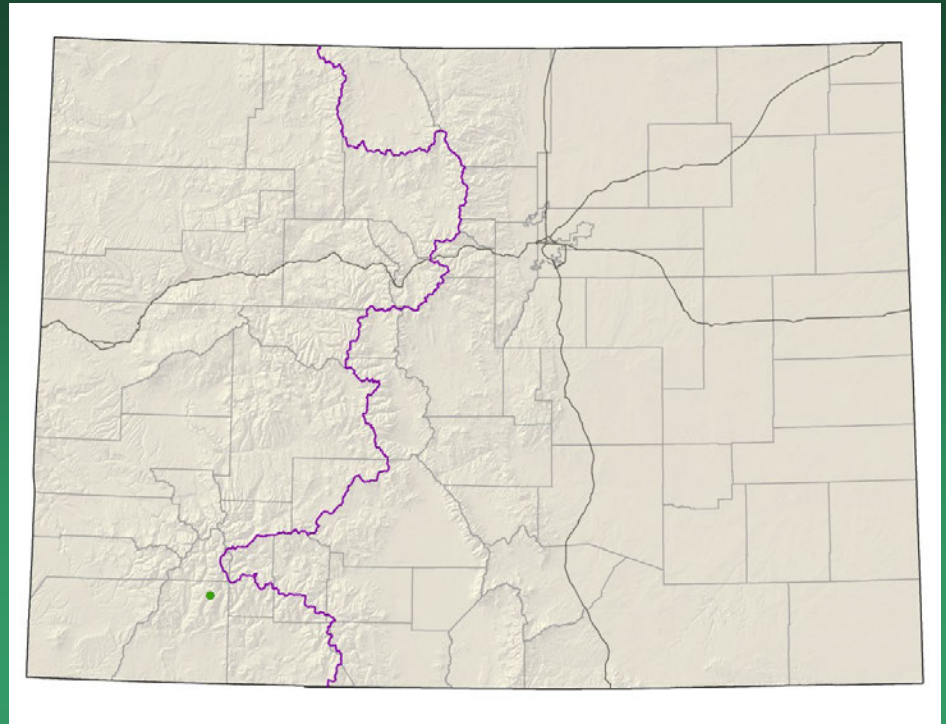
- Federal status: BLM & USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, San Miguel and Dolores counties
- Elevation range: 7,540-8,490 ft.
- Last observed: 2013
- Occurrences: 6
- Individuals: 22,000
- Primary threats: recreation, livestock trampling, weed control, habitat modification for sage grouse management, roads
- Land ownership/management: BLM, state, private, USFS

Physaria pulvinata



Physaria scrotiformis

West Silver bladderpod



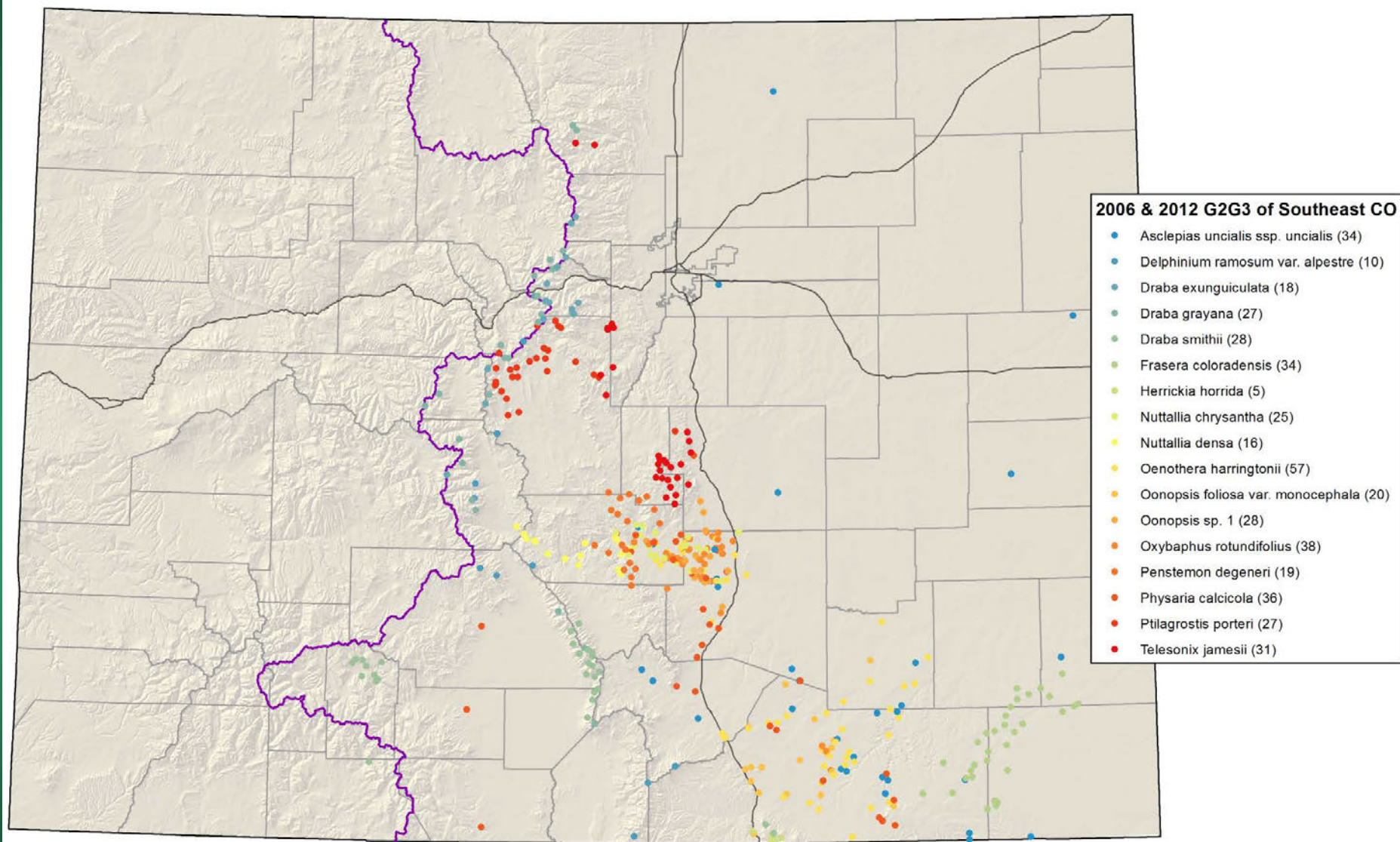
- Federal status: USFS sensitive
- Heritage ranks: G1/S1
- Global distribution: Colorado endemic, La Plata County
- Elevation range: 11,555-11,830 ft.
- Last observed in Colorado: 2006
- Colorado occurrences: 1
- Colorado individuals: unknown
- Primary threats: unknown
- Land ownership/management: USFS

Physaria scrotiformis

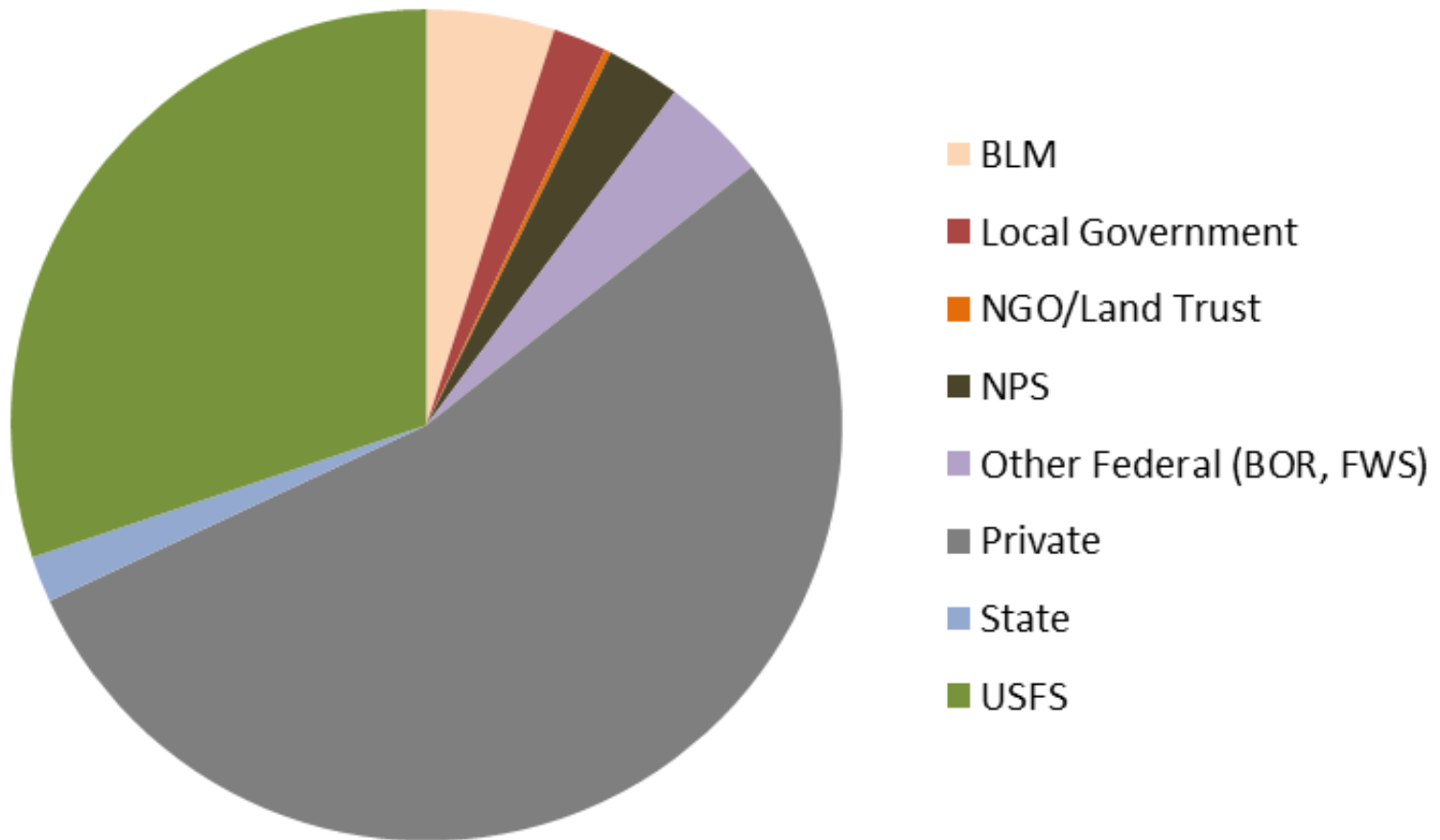


2006/2012

SE Colorado
G2G3 species



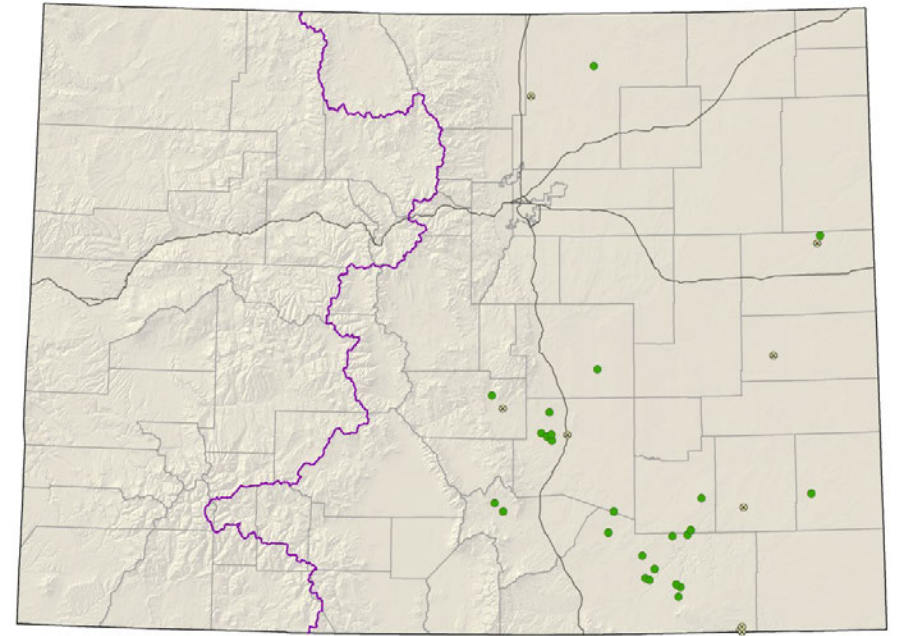
Land Ownership of G2G3 Plant Species of SE Colorado



Asclepias uncialis ssp. *uncialis*

Dwarf milkweed

- Federal status: BLM/USFS sensitive
- Heritage ranks: G3G4T2T3/S2
- Global distribution: Arizona, Texas, New Mexico, Wyoming, Oklahoma, Utah, and Eastern Colorado (Las Animas, Weld, Kit Carson, Huerfano, Pueblo, Otero, Prowers, Fremont, and El Paso counties)
- Elevation range: 3,880-7,730 ft.
- Last observed in Colorado: 2013
- Colorado occurrences: 38 (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, local government, NGO/land trust, federal, state, private, USFS





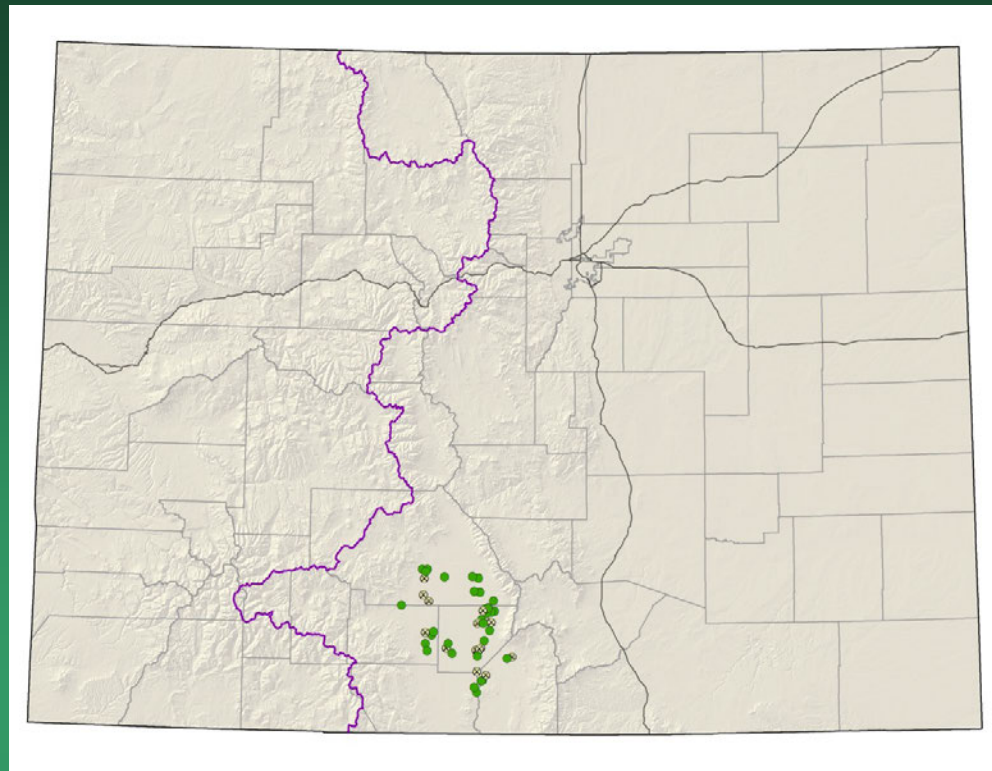
Asclepias uncialis ssp. *uncialis*

Cleome multicaulis=

Peritoma 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)
- Elevation range: 7,480-8,190 ft.
- Last observed in Colorado: 2009
- Colorado occurrences: 40 (12 are historical)
- Colorado individuals: ~5,132,000
- Primary threats: draining of wetlands
- Land ownership/management: BLM, federal, NGO/land trust, NPS, state, private

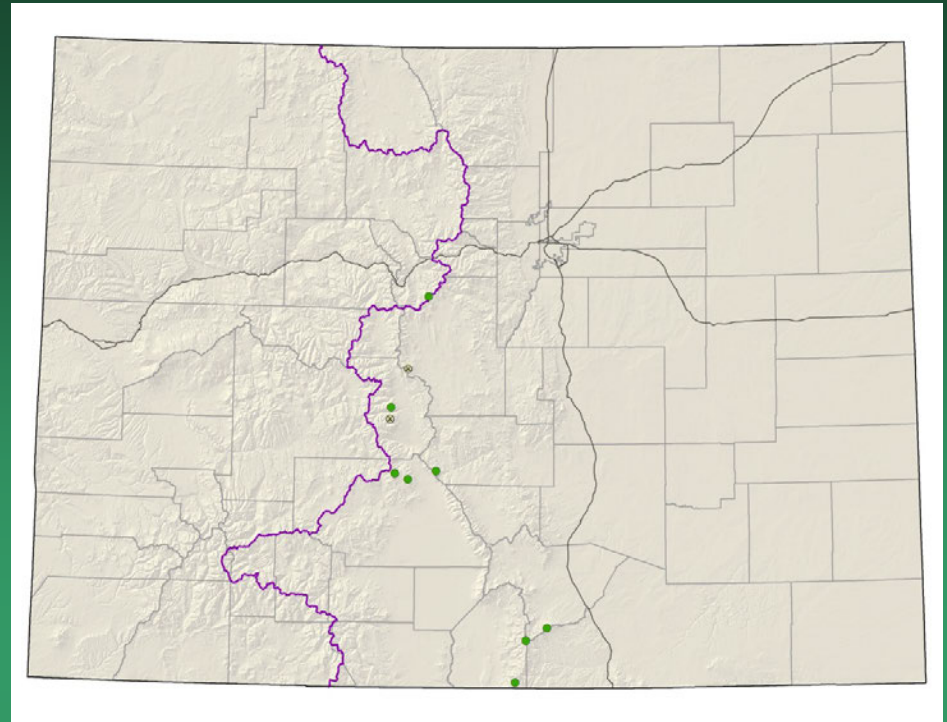


Cleome multicaulis



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

- Federal status: none
- Heritage ranks: G4T2/S2
- Global distribution: New Mexico and Colorado (Costilla, Chaffee, Fremont, Huerfano, Las Animas, Mineral, Park, Saguache, and Summit counties)
- Elevation range: 10,850-14,255 ft.
- Last observed in Colorado: 2008
- Colorado occurrences: 11 (3 are historical)
- Colorado individuals: 100+
- Primary threats: Trampling from recreational activities
- Land ownership/management: private, USFS

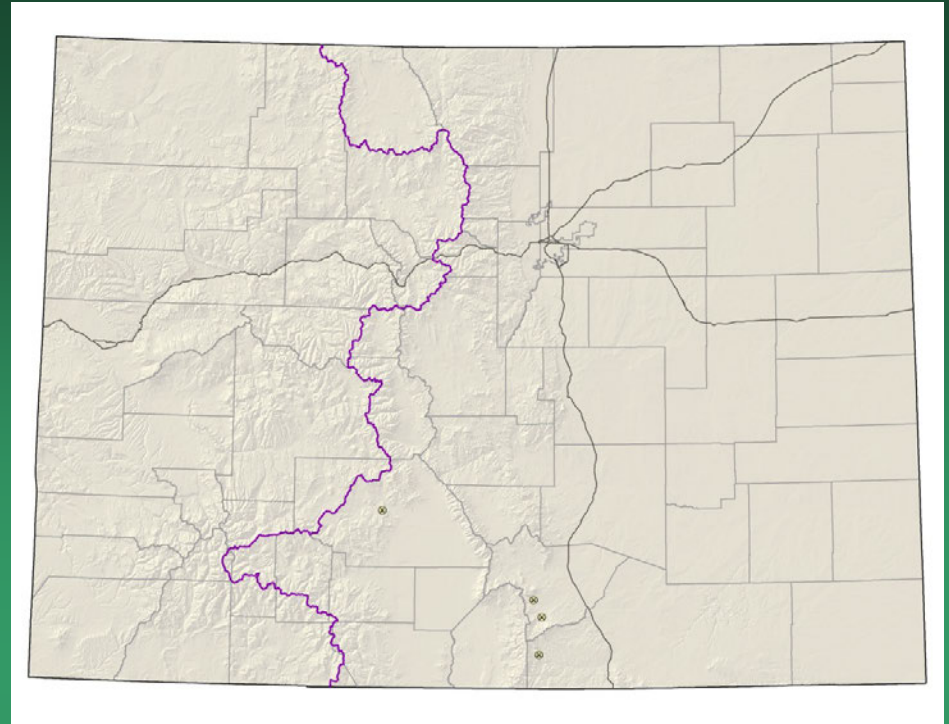


Delphinium ramosum var. *alpestre*



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)
- Elevation range: 7,000-8,500 ft.
- 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, private

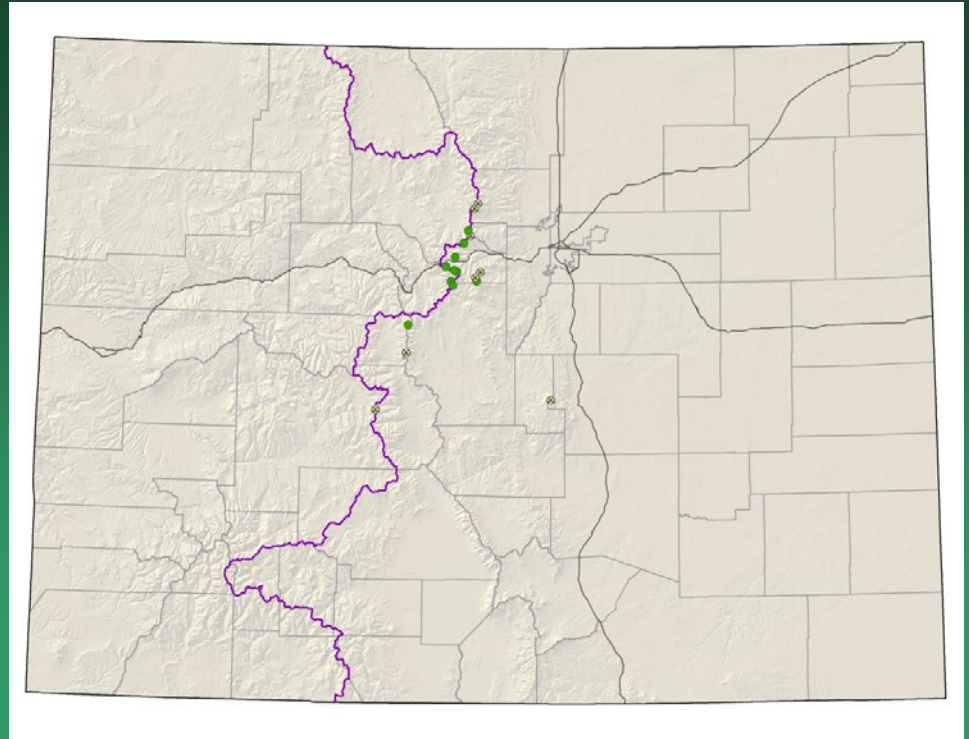
Delphinium robustum



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)
- Elevation range: 10,780-14,120 ft.
- Last observed in Colorado: 2012
- Colorado occurrences: 18 (8 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: local government, state, private, USFS



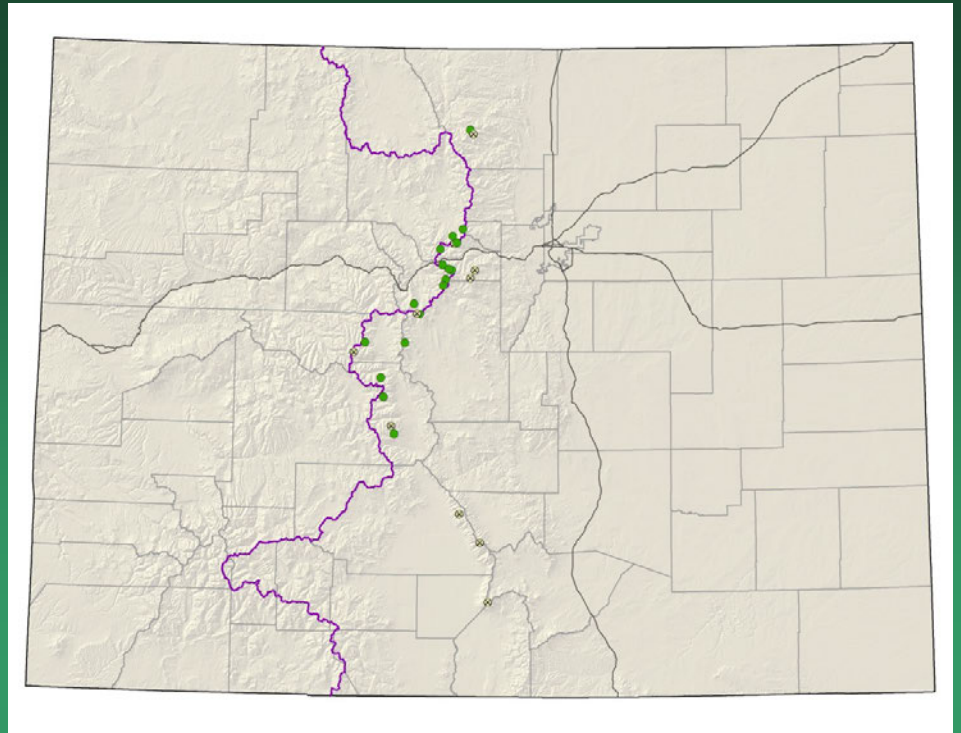


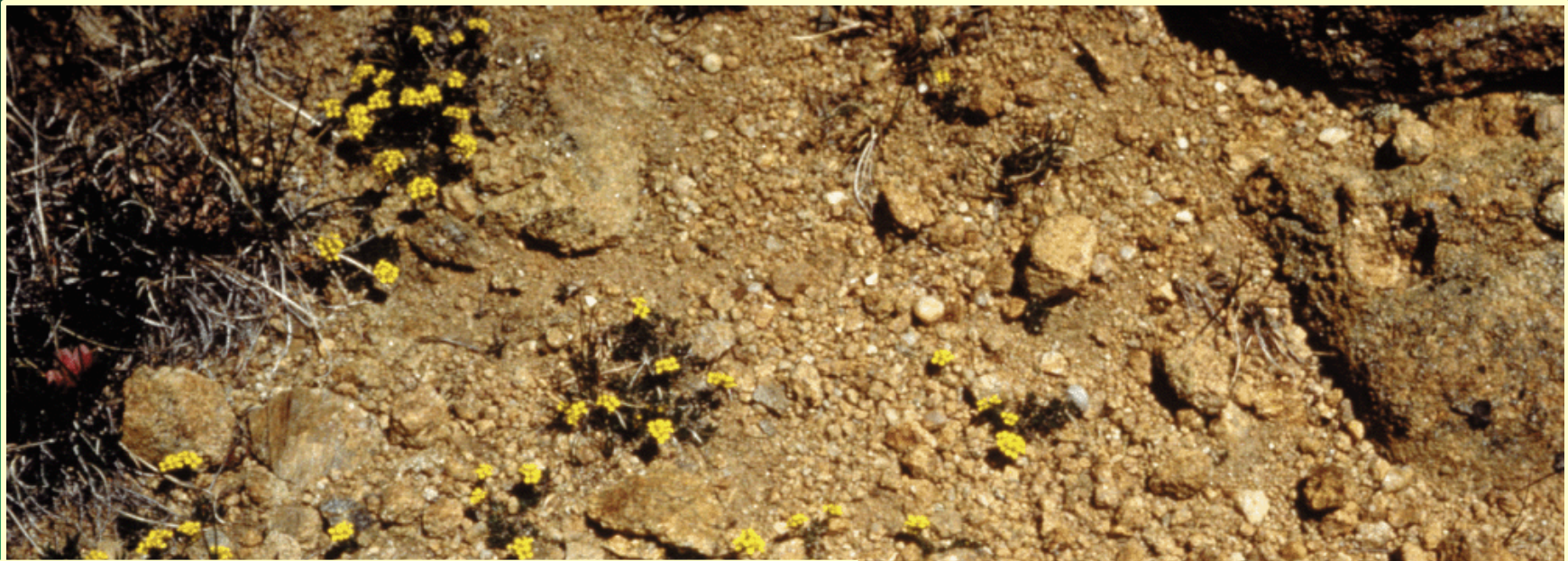
Draba exunguiculata

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)
- Elevation range: 10,630-14,350 ft.
- Last observed in Colorado: 2014
- Colorado occurrences: 27 (10 are historical)
- Colorado individuals: ~200
- Primary threats: Trampling from hikers and mountain goats, over-collection for gardens and global warming
- Land ownership/management: NPS, private, USFS



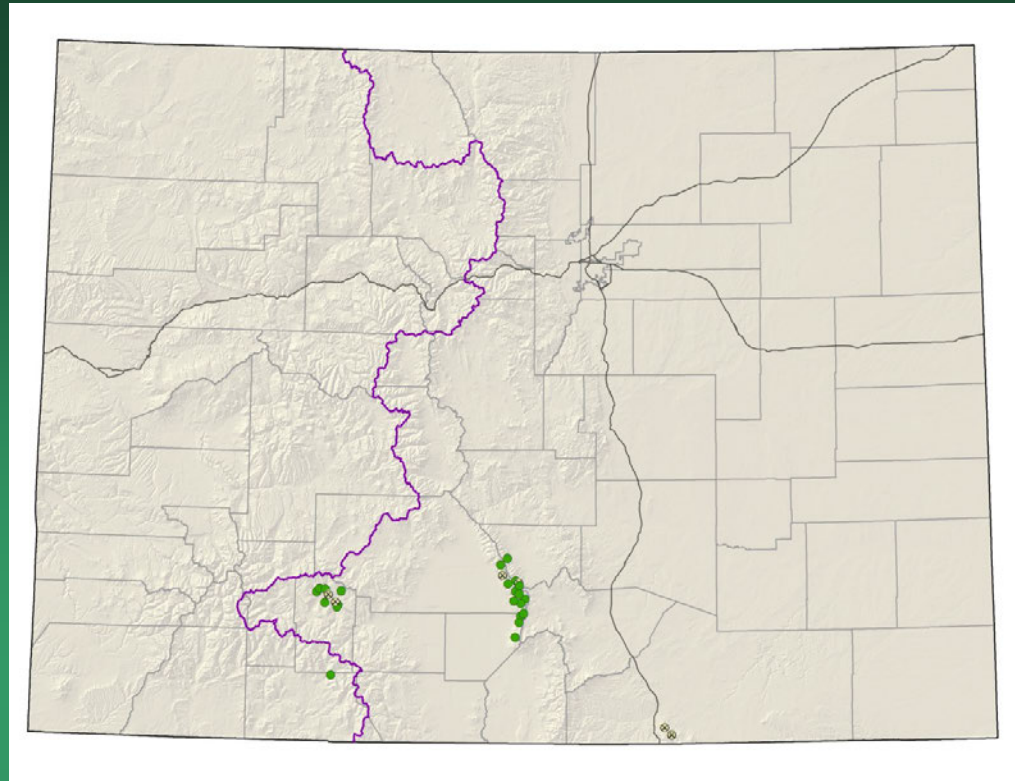


Draba grayana

Draba smithii

Smith's whitlow-grass

- Federal status: USFS sensitive
- Heritage ranks: G2/S2
- Global distribution: Colorado (Alamosa, Archuleta, Custer, Las Animas, Mineral, and Saguache counties), and NM
- Elevation range: 7,400-13,450 ft.
- Last observed in Colorado: 2009
- Colorado occurrences: 28 (6 are historical)
- Colorado individuals: ~3200
- Primary threats: Habitat modification from hiking and construction
- Land ownership/management: local government, NPS, private, USFS



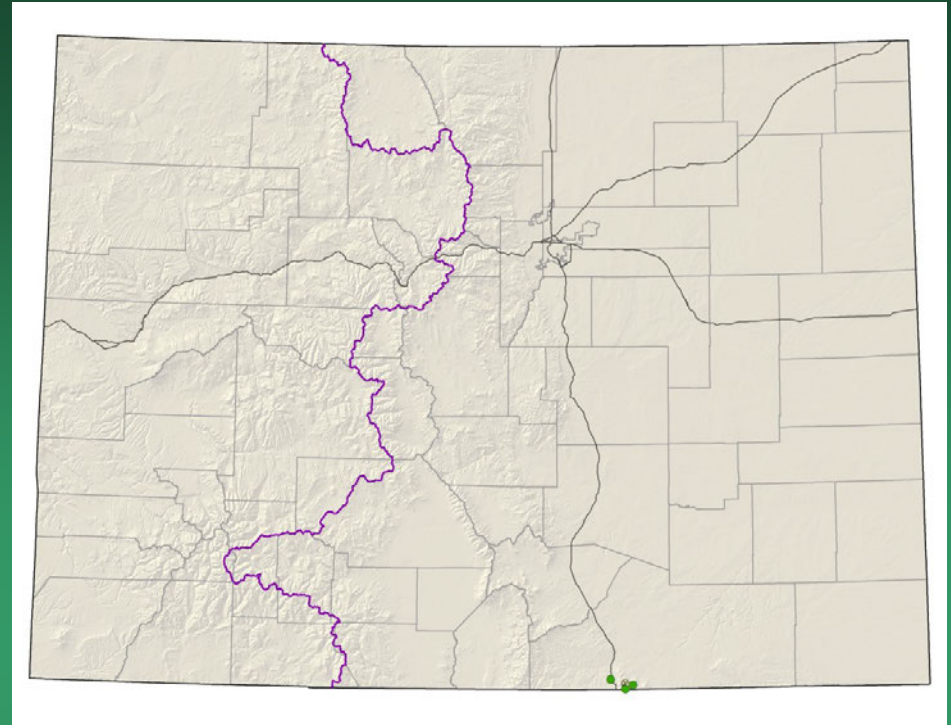
Draba smithii



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)
- Elevation range: 7,870-9,320 ft.
- Last observed in Colorado: 2010
- Colorado occurrences: 5 (2 historical)
- Colorado individuals: 500+
- Primary threats: unknown
- Land ownership/management: local government, private

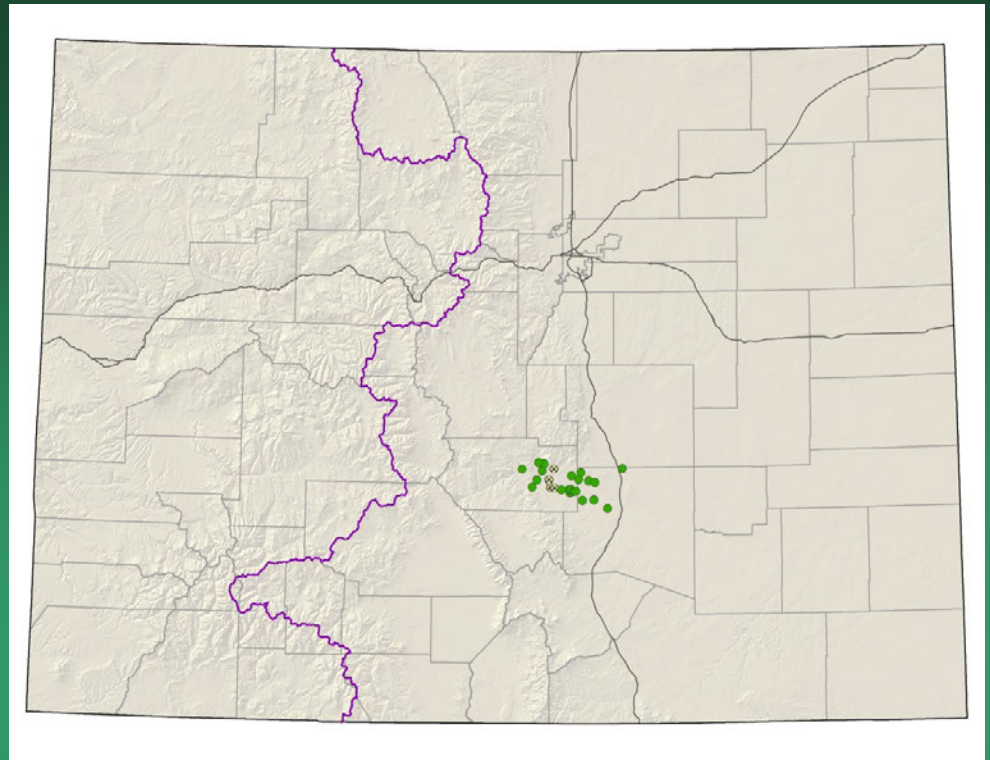


Herrickia horrida

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)
- Elevation range: 4,750-6,850 ft.
- Last observed in Colorado: 2010
- Colorado occurrences: 26 (5 are historical)
- Colorado individuals: ~4100
- Primary threats: Grazing, quarry activities, and subdivision and road construction
- Land ownership/management: BLM, federal, state, private

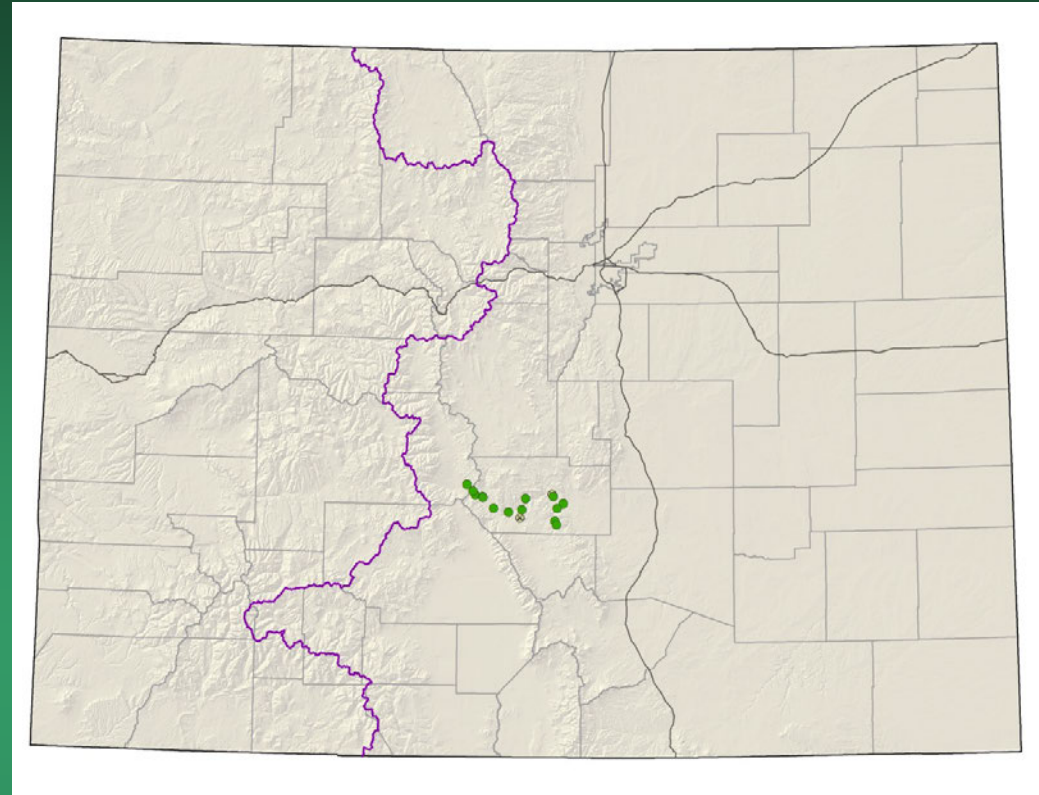




Nuttallia chrysantha

Nuttallia densa
= *Mentzelia densa*
Arkansas Canyon stickleaf

- Federal status: BLM sensitive
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Fremont County)
- Elevation range: 4,750-6,850 ft.
- Last observed in Colorado: 2009
- Colorado occurrences: 16 (2 are historical)
- Colorado individuals: ~13,500
- Primary threats: Recreational development and road construction
- Land ownership/management: BLM, state, private



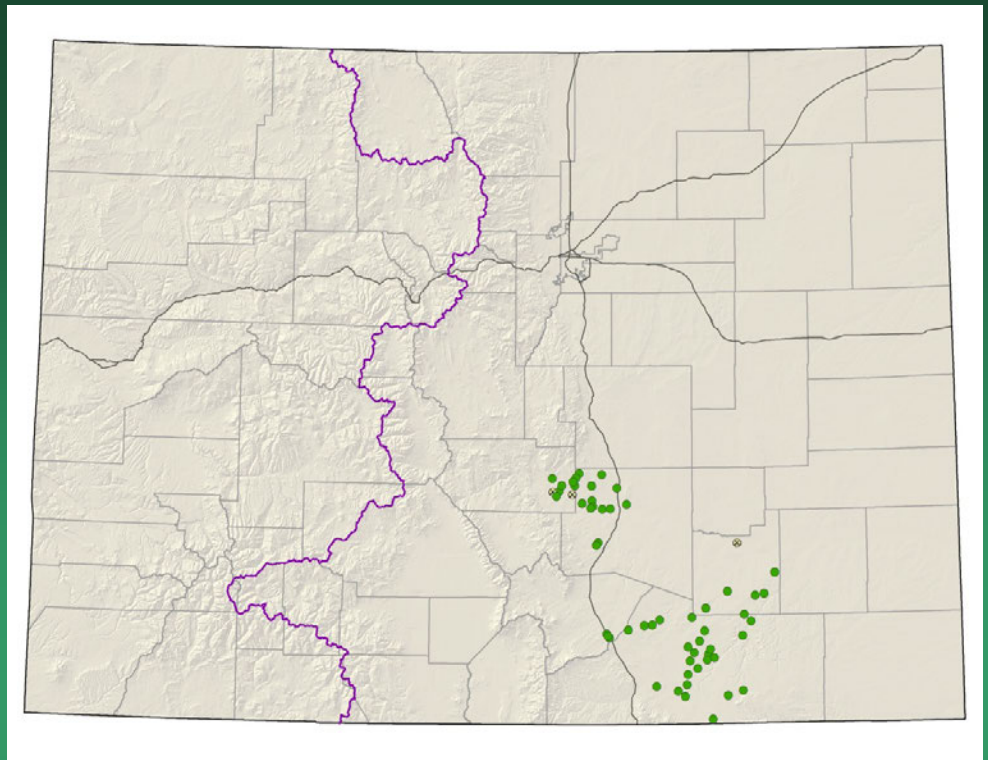


Nuttallia densa

Oenothera harringtonii

Arkansas Valley evening primrose

- Federal status: none
- Heritage ranks: G3/S3
- Global distribution: endemic to Colorado (El Paso, Fremont, Huerfano, Las Animas, Otero, and Pueblo counties)
- Elevation range: 4,130-6,450 ft.
- Last observed in Colorado: 2010
- Colorado occurrences: 62 (8 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, local government, federal, state, private, USFS

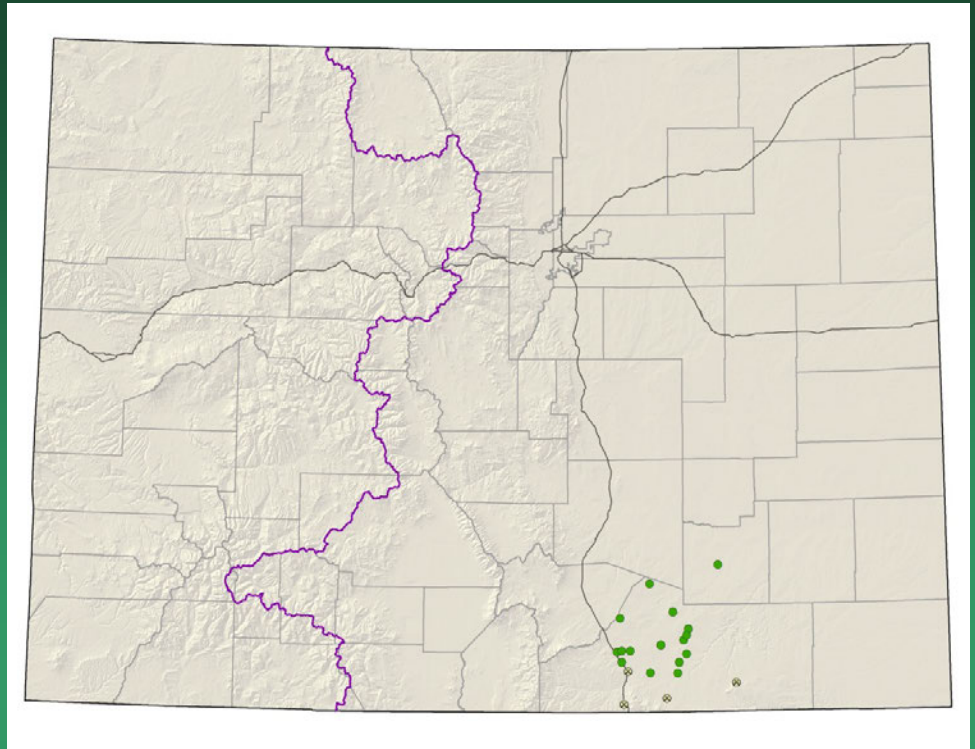




Oenothera harringtonii

Oenopsis foliosa var.
monocephala
Rayless goldenweed

- Federal status: none
- Heritage ranks: G3G4T2/S2
- Global distribution: endemic to Colorado (Las Animas, Pueblo, and Fremont counties)
- Elevation range: 4,330-7,880 ft.
- Last observed in Colorado: 2009
- Colorado occurrences: 16 (4 are historical)
- Colorado individuals: 400,000+
- Primary threats: Maintenance on current roads or further developments may disturb or destroy individuals
- Land ownership/management: federal, state, private, USFS



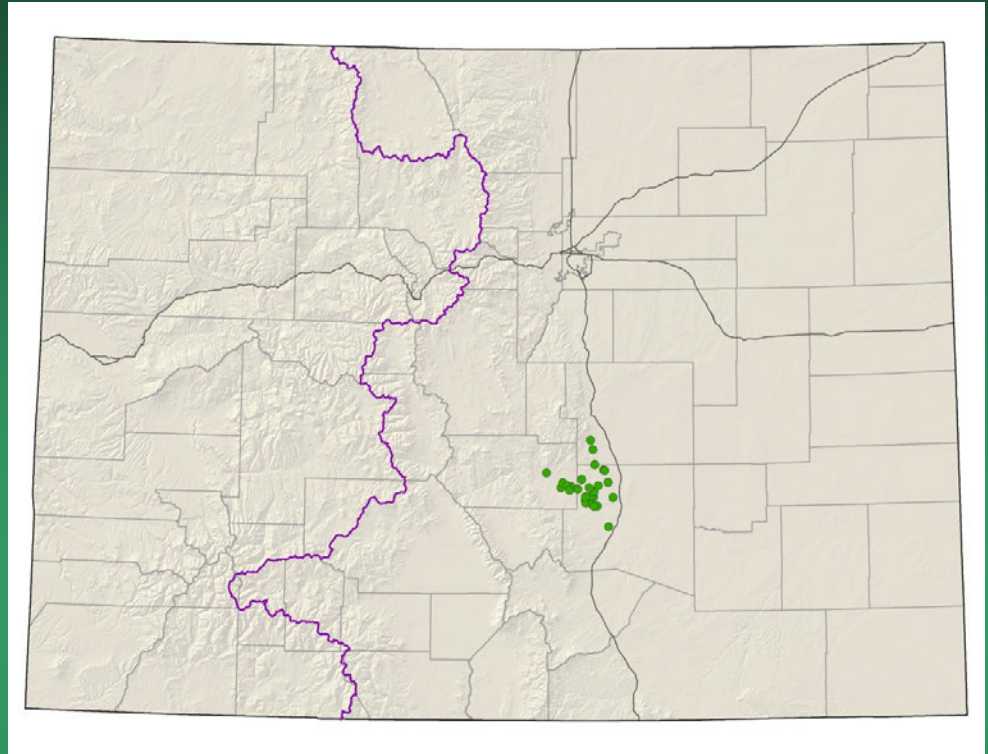


Oonopsis foliosa var. *monocephala*

Oonopsis “puebloensis”
= *Oonopsis* 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)
- Elevation range: 4,850-6,120 ft.
- Last observed in Colorado: 2009
- Colorado occurrences: 28
- Colorado individuals: ~11,000 or more
- Primary threats: Shale extraction by cement plants
- Land ownership/management: state, private



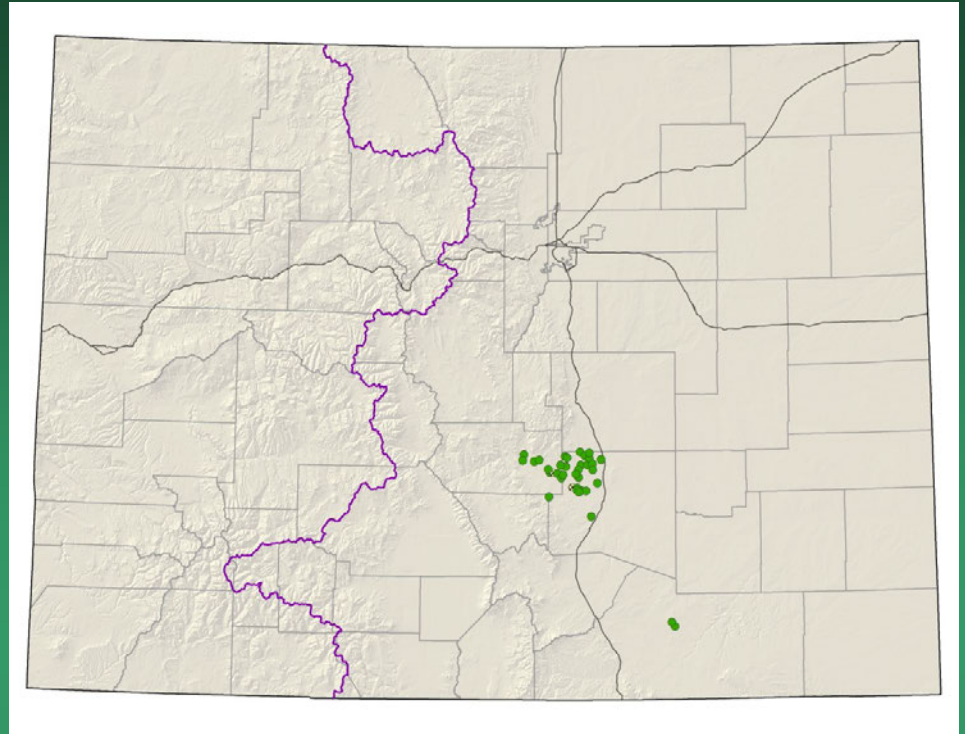


Oenopsis "puebloensis"

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)
- Elevation range: 4,900-5,900 ft.
- Last observed in Colorado: 2009
- Colorado occurrences: 38 (2 are historical)
- Colorado individuals: ~6200
- Primary threats: Highly threatened by residential and recreational development
- Land ownership/management: BLM, federal, state, private



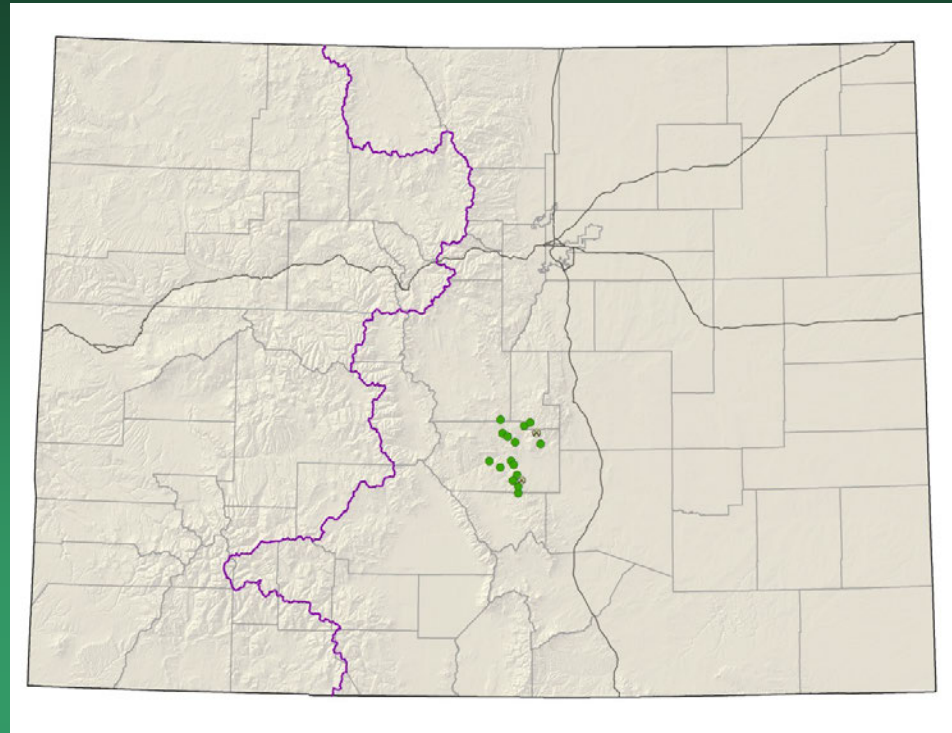


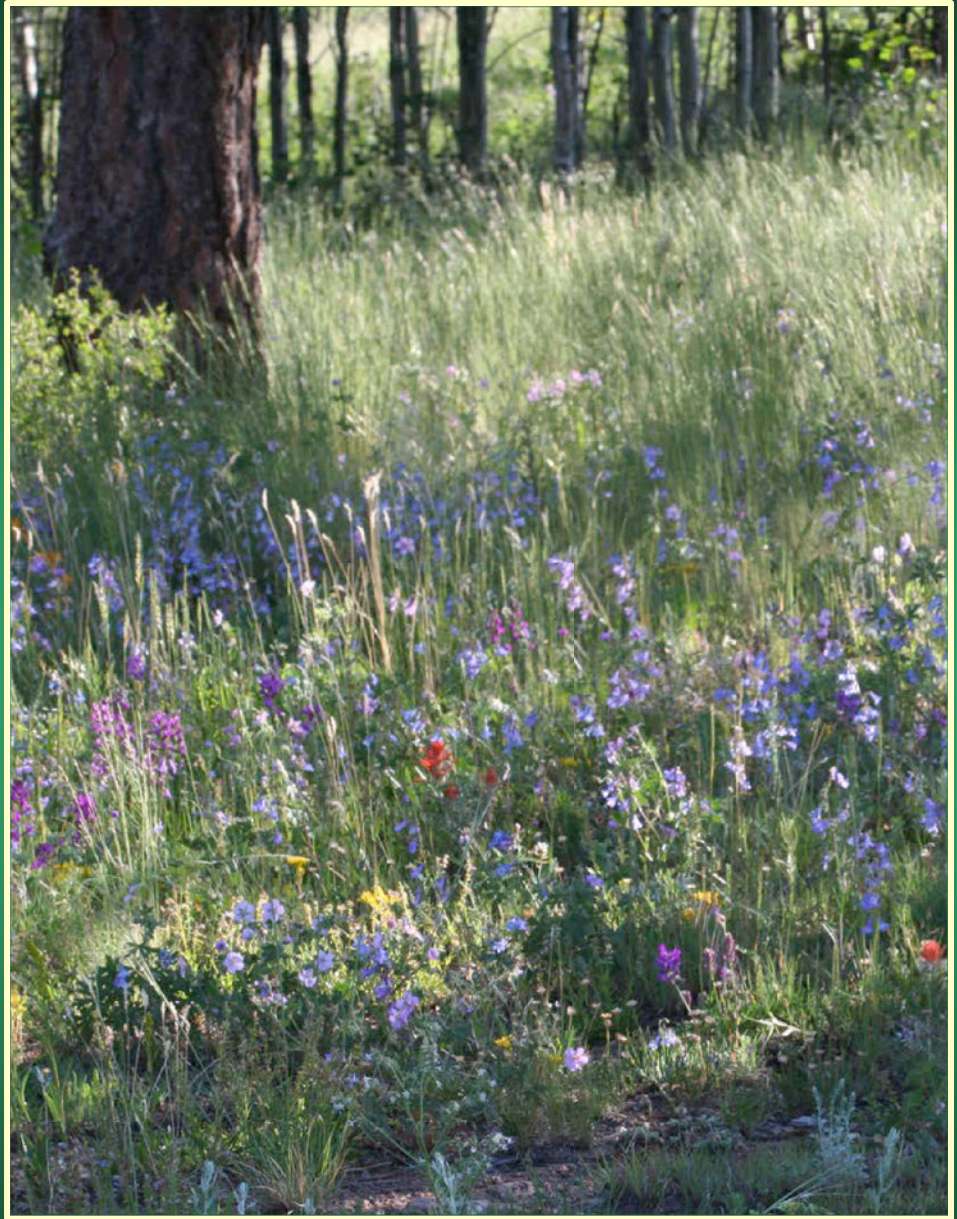
Oxybaphus rotundifolius

Penstemon degeneri

Degener beardtongue

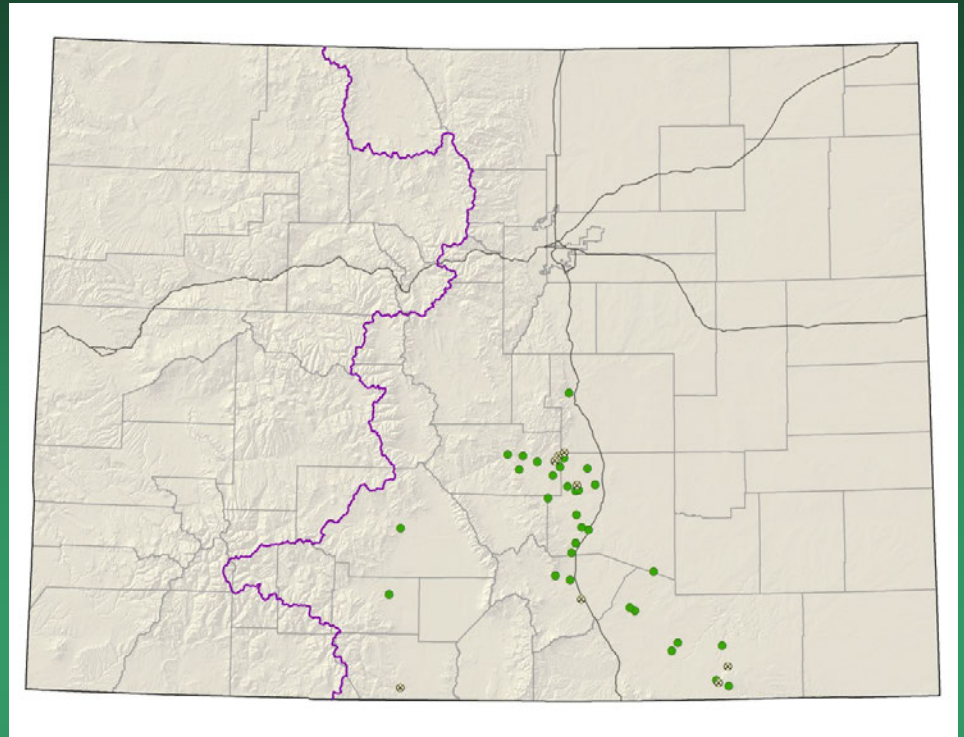
- Federal status: USFS & BLM sensitive
- Heritage ranks: G2/S2
- Global distribution: endemic to Colorado (Chaffee, Custer and Fremont counties)
- Elevation range: 6,000-9,450 ft.
- Last observed in Colorado: 2013
- Colorado occurrences: 19 (2 historical)
- Colorado individuals: ~1500
- Primary threats: Motorized and non-motorized recreation, non-native plant invasion, grazing and trampling, extensive herbivory, succession, and global environmental changes
- Land ownership/management: BLM, private, state, USFS



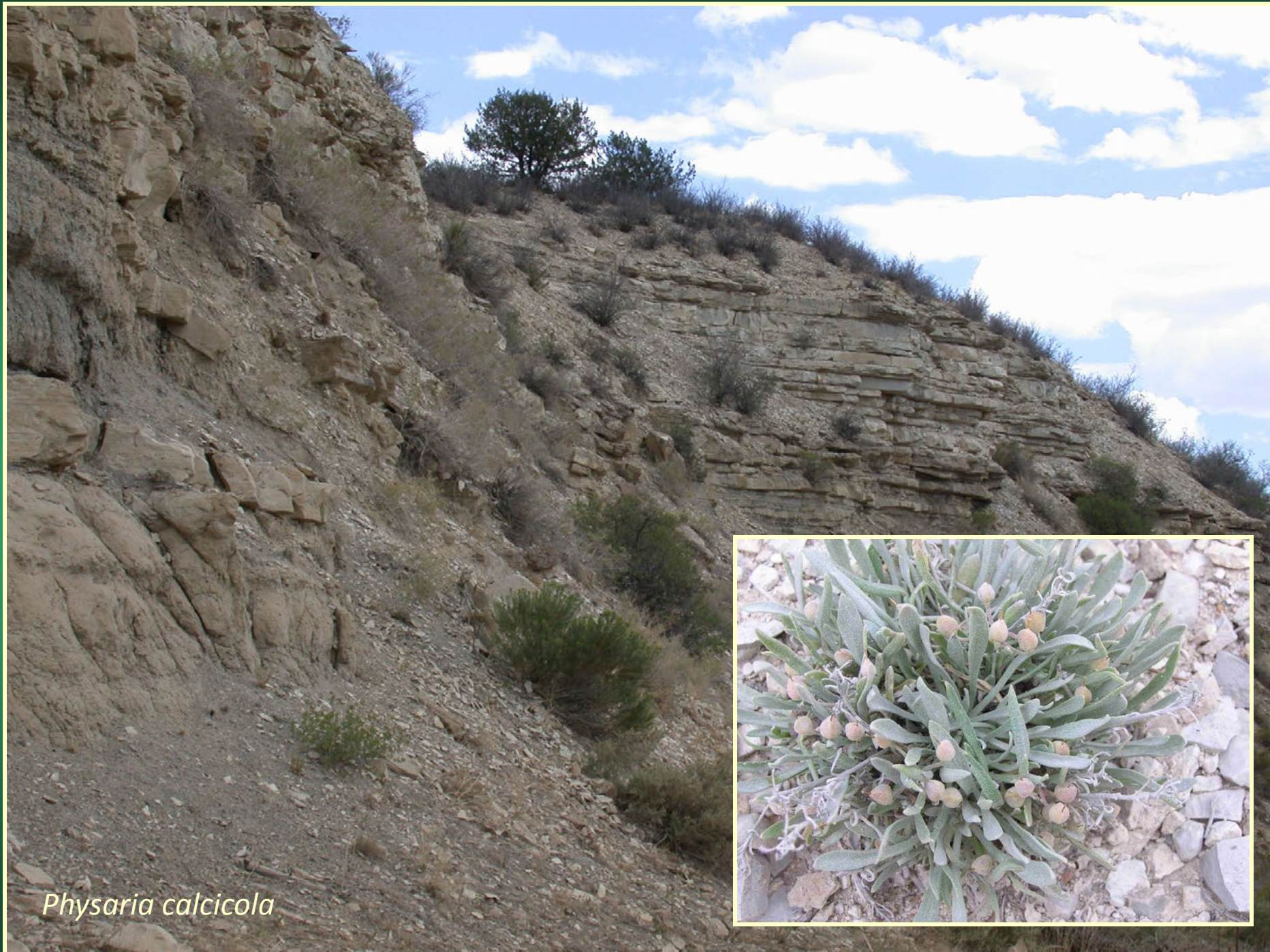


Penstemon degeneri

Physaria calcicola
= *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)
- Elevation range: 4,780-9,800 ft.
- Last observed in Colorado: 2013
- Colorado occurrences: 39 (8 are historical)
- Colorado individuals: 24,000
- Primary threats: This species occurs in areas that are experiencing rapid development pressures
- Land ownership/management: BLM, local government, federal, state, private



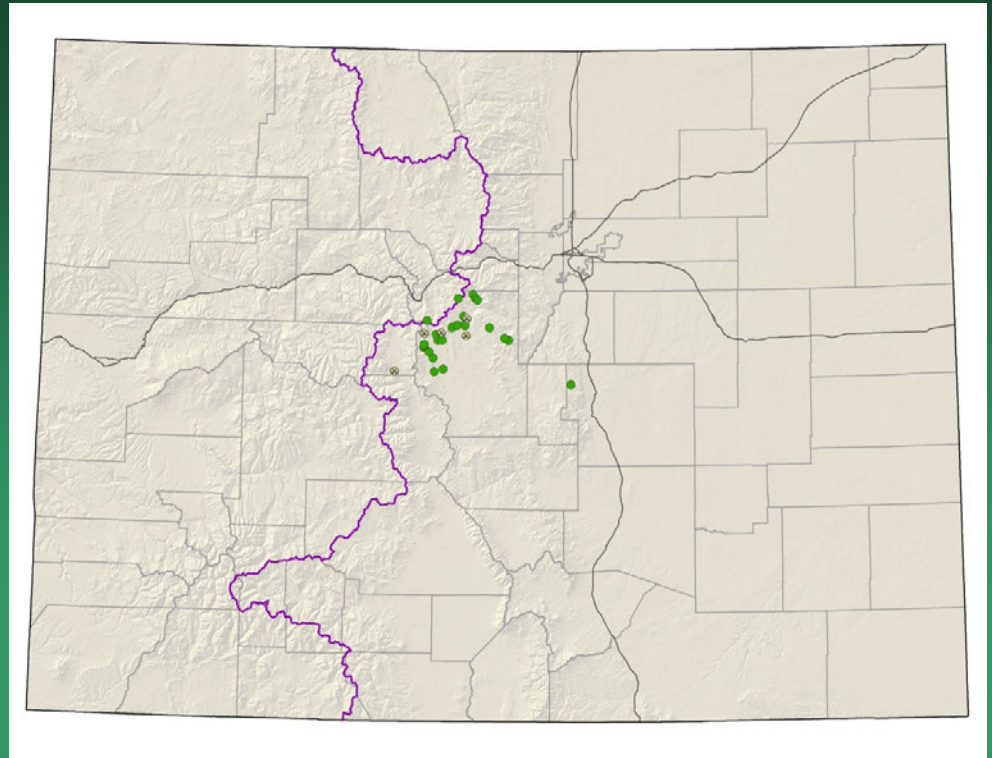
Physaria calcicola



Ptilagrostis porteri

Porter feathergrass

- Federal status: USFS sensitive
- Heritage ranks: G2/S2
- Global distribution: Colorado (El Paso, Lake, Park and Summit counties); northern NM
- Elevation range: 9,070-12,470 ft.
- Last observed in Colorado: 2011
- Colorado occurrences: 28 (5 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: NGO/land trust, private, USFS



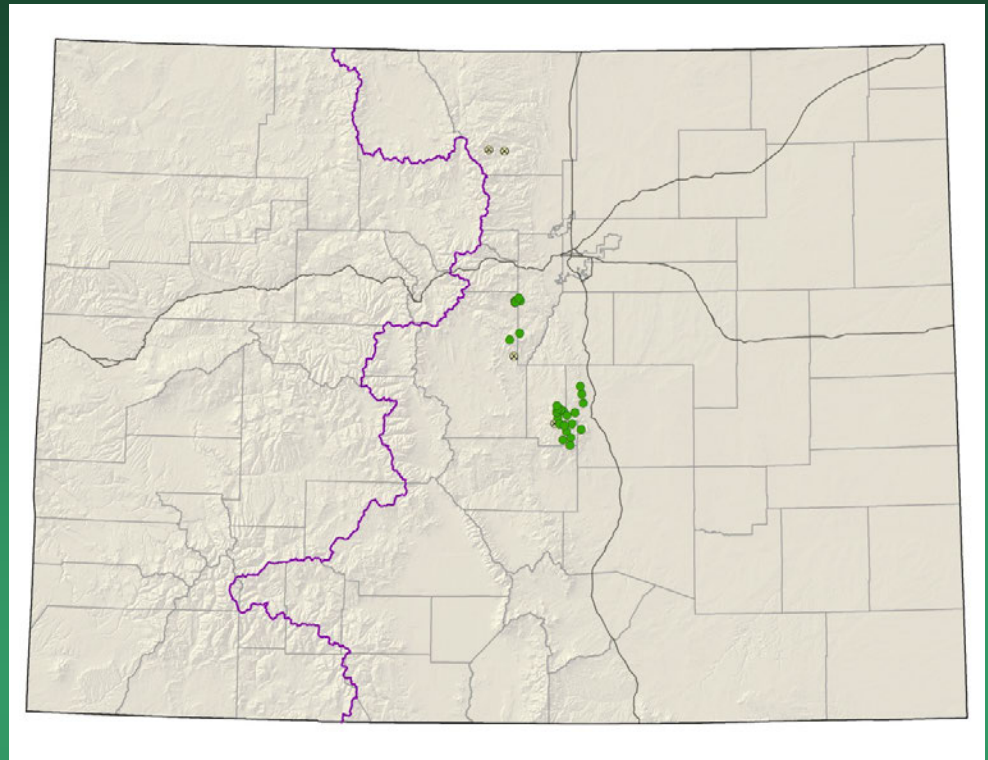


Ptilagrostis porteri

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); 6700-13,700 ft.
- Elevation range: 6,745-13,730 ft.
- Last observed in Colorado: 2012
- Colorado occurrences: 32 (5 are historical)
- Colorado individuals: ~20,000
- Primary threats: Motorized and non-motorized recreation, trail or road construction and maintenance, invasive species introduction, and horticultural collection
- Land ownership/management: BLM, NGO/land trust, NPS, state, private, USFS





Telesonix jamesii