

Antelope Bitterbrush Complex



Parks &
Open Space

5201 St. Vrain Rd., Longmont CO 80504 303-678-6200 BoulderCountyOpenSpace.org



Photo Credit: BCPOS Employee

Community Description

Consists of: Antelope Bitterbrush (*Purshia tridentata*), Fringed Sagebrush (*Artemisia frigida*), Needle-and-Thread Shrubland (*Hesperostipa comata*)

Antelope Bitterbrush (*Purshia tridentata*), Mountain Muhly Shrubland (*Muhlenbergia montana*).

Designation: The Colorado National Heritage Program classifies the Antelope Bitterbrush/ Mountain Muhly Shrubland as G2/S2 and the Antelope Bitterbrush/ Prairie Sagewort/ Needle-and-Thread Shrubland as G1/S1S2.

Biotic: Antelope bitterbrush is the dominant shrub in these rare communities, with fringed sagebrush, needle-and-thread grass, and/or mountain muhly present as codominant species.

Abiotic: These communities usually occur on south-facing slopes in an elevational range between 5,800 – 9,000 ft. Soils where these two communities are present are loamy and sandy in texture, and there is usually a moderately rocky surface.

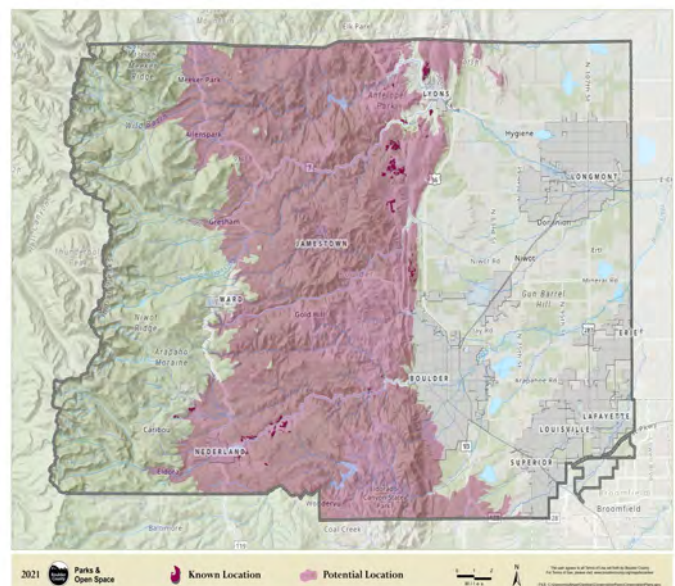
Vital processes: While not much is known about the processes that influence these communities, fire and grazing have historically provided important disturbance pressures. Bitterbrush provides important food material for wildlife.

Background

The Antelope Bitterbrush/ Fringed Sagebrush/ Needle-and-Thread Shrubland and the Antelope Bitterbrush/ Mountain Muhly Shrubland are two rare shrubland communities found in the foothills of Boulder County. They have been designated as either imperiled or critically imperiled and are threatened by continued habitat degradation resulting from development, climate change, overgrazing, and the spread of invasive species.

Distribution & Range

The Antelope Bitterbrush Complex is limited to eastern slopes of the northern Front Range in Colorado in Boulder and Larimer Counties. No out-of-state-locations have been documented. On Boulder County Parks & Open Space (BCPOS), remnants of this significant natural community complex can be found in Hall Ranch, Steamboat Mountain, Caribou Ranch, and Heil Valley Ranch.



Threats

Invasive Species: Cheatgrass and Japanese brome reduce water availability and alter natural fire regimes. Invasive forbs, like Canada thistle, also compete heavily against the native plants in this community.

Overgrazing: Antelope bitterbrush is only moderately tolerant of grazing. Overgrazed stands increase the likelihood of invasive species establishing. Excessive trampling could affect the establishment of seedlings.

Loss/alteration of vital processes: Fire and grazing are natural and necessary components of this community complex. However, unburned, decadent bitterbrush plants with more dead wood are more likely to burn completely and be unable to resprout after an intense fire.

Climate Change: Alterations in local climate have the potential to limit or change reproductive capability of key species by altering the timing of a species' phenology or by affecting animals responsible for pollination and/or seed dispersal.

Development: The Antelope Bitterbrush Complex occurs only in the foothills of the Colorado Front Range. As a result, large swaths of land containing these rare significant natural communities have been eliminated. Remaining populations are fragmented across protected areas.



Antelope bitterbrush complex photo taken by BCPOS staff.

Management Considerations

Coordinate management actions with

BCPOS: Potential locations can be reported to BCPOS to help with planning and conservation. BCPOS can help with:

- ***Documentation:*** If stands of the Antelope Bitterbrush Complex are identified, landowners should map or monitor these areas with BCPOS.
- ***Agriculture/grazing:*** Grazing by livestock should be excluded from stands. However, if stands are heavily decadent, short-term grazing could be considered as a targeted management approach to improve the health of the community.
- ***Invasive Plant Management:*** If possible, mechanical removal of invasive species (i.e. hand-pulling or using hand tools to remove invasive species) is ideal for the Antelope Bitterbrush Complex. BCPOS can give advice for applications of herbicide and strategies for re-seeding.
- ***Fire Management:*** BCPOS can help determine if fire management would be an effective tool to fight invasion species.



Antelope bitterbrush complex photo taken by BCPOS staff.

Species Conservation and Recovery Plan

2021

The areas displayed in this map indicate known and potential locations of the following significant natural community in Boulder County:



Purshia tridentata Complex



Antelope Bitterbrush Complex

The Antelope Bitterbrush Complex consists of two threatened plant communities: the Antelope Bitterbrush / Prairie Sagewort / Needle-and-Thread Shrubland and the Antelope Bitterbrush / Mountain Muhly Shrubland. The communities are listed as critically imperiled (S1) and imperiled (S2) in Colorado respectively, and both are listed as Boulder County Natural Significant Communities due to multiple threats including development, climate change, overgrazing, and invasive species.

This map shows only known occurrences of these two communities that exist within BCPOS property, and where there is a potential for these communities to occur county-wide.

- Known Location
- Potential Location

