

Needle and Thread Complex



Parks & Open Space

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

Background

Both vegetation associations, the Needle-and-Thread - Blue Grama Mixedgrass Prairie and the Needle-and-Thread Colorado Front Range Grassland, are native, rare grassland communities found within Boulder County. The significant plant associations in this complex occur on Colorado's Front Range and have been degraded by human activities such as development, heavy livestock grazing, invasive weeds, a perturbed fire regime, and climate change. The Needle-and-Thread Complex is critically imperiled in the State of Colorado.

Distribution & Range

The Needle-and-Thread Complex is found at lower elevations along the eastern slope of the Rocky Mountains and in northeastern Colorado. Much of this community in the Front Range has been eliminated through agriculture and urban sprawl. On Boulder County Parks & Open Space (BCPOS), remnants of this significant, natural community complex can be found in the Northern Foothills properties

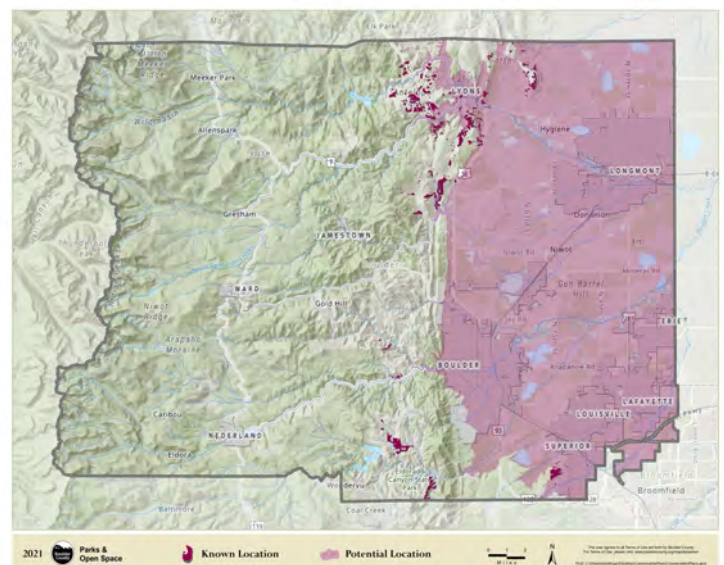


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Community Description

Biotic: Needle-and-thread grass is a dominant or codominant perennial species in this community complex, with blue grama and threadleaf sedge codominant in some associations. Western wheatgrass and thickspike wheatgrass are also present but not dominant. Woody species comprise less than five percent of vegetative cover. Several forbs like globemallow, goldenaster, plains pricklypear, and prairie coneflower can be present.

Abiotic: Common on north- and east-facing slopes, especially rock outcrops and hogback slopes. Occurs on rolling topography with deep sandy loam to loam coarser-textured soils, and soils derived from sandstone or limestone. Annual rainfall averages between 10-20 in.



Threats

- *Invasive species*: Cheatgrass, which outcompetes and replaces native plants in this complex, also contributes to secondary effects such as decreased tolerance to grazing and drought, and alteration of the natural fire regime.
- *Overgrazing*: Although limited grazing is beneficial to this community complex, overgrazing can result in poor root growth and plant mortality if timing coincides with unfavorable environmental conditions, such as drought.
- *Climate Change*: Some dominant plants in these associations suffer from higher annual precipitation, and warming nighttime temperatures favor only some cool-season grasses at the expense of warm-season grasses, altering community composition and dynamics.
- *Wildfire*: Fire is a natural and necessary component of this community complex. However, fire-return intervals have been lengthened due to fire suppression, leading to intense wildfires.



Photo credit: BCPOS employee

Management Considerations

- *Agriculture/Grazing*: This community benefits best from rotational, short-term grazing, ideally in non-summer months. Continuous grazing strategies are not recommended, and no grazing until at least one year after fire.
- *Invasive species management*:
 - If possible, mechanical removal of invasive species is ideal.
 - If mechanical treatment is not feasible, post-emergent applications of herbicide should be considered for these communities, with a re-seeding strategy planned.
 - Cheatgrass infested communities that would be treated with Esplanade, a pre-emergent herbicide, should be surveyed for rare or sensitive plants.
- *Coordinate management actions with BCPOS*:
 - Existing communities on private and public land should be mapped and documented.
 - Restoration efforts, including prescribed fire, herbicide treatment, mechanical removal of invasive species, grazing management should be considered along with re-introduction of native species and responsible re-seeding efforts.
 - *Fire management*: Fall is the best season for controlled burns for the community, coordinate with BCPOS.

2021

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

Hesperostipa comata Complex

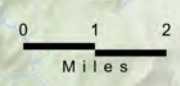
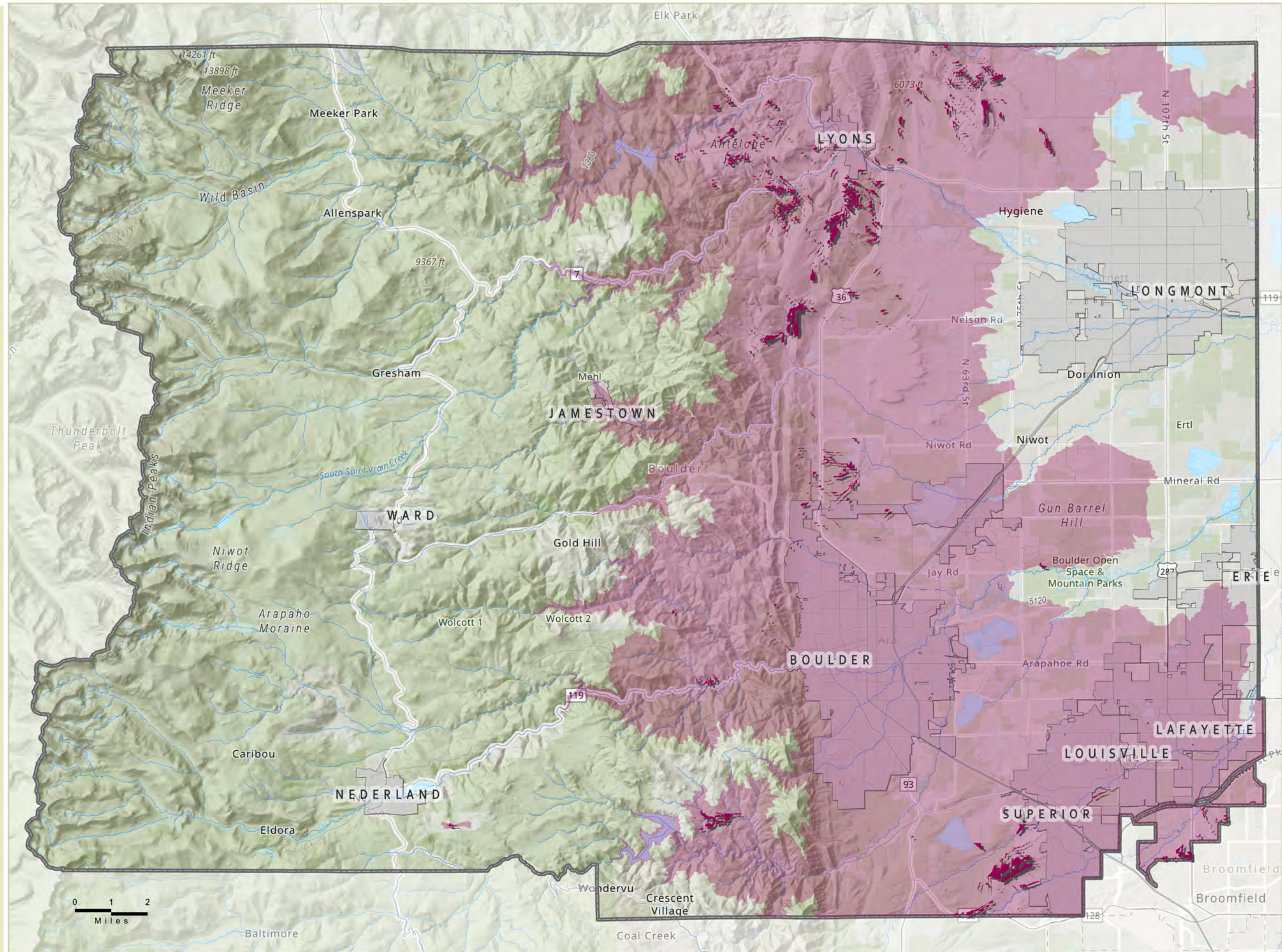


Needle-and-Thread Complex

The Needle-and-Thread Complex consists of two threatened plant communities: Needle-and-Thread – Blue Grama Mixedgrass Prairie and the Needle-and-Thread Colorado Front Range Grassland. The communities are listed as imperiled (S2) and critically imperiled (S1) in Colorado respectively, and both are listed as Boulder County Natural Significant Communities due to multiple threats including continued development within the narrow range of its presence.

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



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