

Level 4 Potential Conservation Area (PCA) Report

Name Lowry Piedmont Grassland

Site Code S.USCOHP*28324

IDENTIFIERS

Site ID 2767 Site Class PCA
Site Alias None

Network of Conservation Areas (NCA)

<u>NCA Site ID</u>	<u>NCA Site Code</u>	<u>NCA Site Name</u>
-		No Data

LOCATORS

Nation United States Latitude 393617N
State Colorado Longitude 1043705W

Quad Code Quad Name

39104-E5 Watkins SE
39104-E6 Piney Creek
39104-F5 Watkins

County

Arapahoe (CO)

Watershed Code Watershed Name

10190003 Middle South Platte-Cherry Creek

SITE DESCRIPTION

Minimum Elevation	5,765.00 Feet	1,757.17 Meters
Maximum Elevation	6,160.00 Feet	1,877.57 Meters

Site Description

The Piedmont grasslands of Lowry are comprised of rolling hills covered in a mosaic of shortgrass, mixed-grass, and tallgrass prairies. For the most part, soils are the driving factor for grassland type; however, grazing animals (e.g., prairie dogs and cattle) share a large role in the condition and type of grassland. This site is specifically drawn for the tallgrass prairie (a.k.a. foothills - piedmont grassland), one of the rarest and most imperiled grassland communities in Colorado. Very few large occurrences of this grassland remain in Colorado of which Lowry Range is one of them. The largest patch at Lowry Range is in the southern portion of Lowry and even within that area it is not a continuous patch but consists of numerous and closely spaced patches. The dominant tall grasses are big bluestem (*Andropogon gerardii*), prairie sandreed (*Calamovilva longifolia*), and little bluestem (*Schizachryrium scoparium*). During good moisture years and rest from grazing, these grasses will flourish and reach tall heights, as tall as two feet in some places. The tallgrass prairie occupies both ridges and slopes and all aspects as well. Understory species may be diverse. Blue grama (*Bouteloua gracilis*) is the most dominant shortgrass, but other grasses include western wheat (*Agropyron smithii*), needle-and-thread (*Hesperostipa comata*), and purple three-awn (*Aristida purpurea*). Forbs include fringed sage (*Artemisia frigida*), sunflower (*Helianthus* sp.), buckwheat (*Eriogonum* spp.), and more. CNHP visited this site in August 2010, which is a great time for observing the tallgrass species but it is not an ideal time for observing butterflies and skippers (indicator species). Viable populations of Ottoe skipper (*Hesperia ottoe*), cross-lined skipper (*Polites origenes rhena*), Arogos skipper (*Atrytone arogos iowa*), dusted skipper (*Atrytonopsis hianna turneri*), and regal fritillary (*Speyeria idalia*) are indicators of a healthy and functioning foothills - piedmont grassland system. These skippers and butterflies generally require little bluestem or big bluestem as host plants and diverse forbs for adult plants. May - July is the ideal time for surveying for these species.

Key Environmental Factors

Geology, soil depth, moisture availability, drought, grazing, and fires play a critical role in determining the vegetation species composition. Fires kill woody species and rejuvenate herbaceous growth. Grazing or lack of grazing can easily alter the species composition. Big bluestem is a desirable grass and is sensitive to the amount of grazing (note that this species has evolved with grazing animals), thus CNHP's 2005 study barely noticed this species due to the heavy grazing that was in practice. However the species must have been present as it was abundant in 2010.

Climate Description

No Data

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Land Use History

Prior to settlement by European Americans, ungulates including bison (*Bison bison*) and pronghorn (*Antilocapra americana*) grazed the grasses of the range. Native Americans, including the Arapahoe, Comanche, Kiowa and Plains Apache hunted bison and other ungulates on Colorado's plains, while the Clovis culture and later Folsom man occupied the area approximately 10,000 years ago (Cushing 2004). Europeans had occupied areas in eastern Colorado since the early 1800s, but it wasn't until gold was discovered in 1858 along the banks of Cheery Creek that Europeans began settlement of the area that includes the Lowry Range in earnest. By 1863, livestock ranchers and farmers predominated in the area surrounding the Lowry Range. Overuse of grassland and soil resources, in conjunction with the drought of the 1930s, lead to economic depression in the area and abandonment of the ranches and farms. In 1938, in an attempt to stimulate the economy after acquiring the Lowry Range and surrounding property from numerous private owners, the City of Denver sold the land to the War Department, which established the Lowry Bombing and Gunnery Range (Cushing 2004). The Lowry Range was used for active bombing maneuvers during World War II, and again until 1958 during the Korean War, with an intermittent period between wars when the Range was leased as pasture for livestock grazing. In the 1960s, the federal government deeded part of the Lowry Range back to the City of Denver. Since then the major use of the range has been ranching, but the site still supports active military training, oil and gas wells, gravel mining, and other activities. Cattle grazing was eliminated for an undetermined amount of time in 2007.

Cultural Features

Numerous Native American and homesteader artifacts occur throughout the area.

SITE DESIGN

Site Map Y - Yes Mapped Date 03/01/2011
Designer Rondeau, R.J.

Boundary Justification

The boundary is drawn to include the tallgrass prairie and additional connecting lands. The boundary was digitized while referencing a one meter 2009 digital color orthophoto quad, a 1:24,000 digital quad, soils maps, and inferences from on-the-ground assessment.

Primary Area 8,038.86 Acres 3,253.22 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

This site supports a good (B-ranked) occurrence of the state imperiled (GU/S2) *Andropogon gerardii* / *Calamofilva longifolia* tall grass prairie, a.k.a. foothills - piedmont grassland. Although globally unranked due to the fact that a full assessment has not yet occurred, this is most likely a globally imperiled (G2) community. Only a handful of occurrences are known in Colorado and Lowry supports the second largest occurrence. We recognize this as a B2 site due to the paucity of locations, the size of the Lowry occurrence, and the fact that there are no known "A" ranked occurrences. In addition, this community was probably much more widespread than it is today, making any known occurrence an important conservation area.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

The land use within or adjacent to the site is mixed and includes gravel mining (just outside the site boundary), oil and gas wells, military training (mostly helicopter fly overs), and the potential for managed cattle or sheep grazing in the future although the cattle operation has not been in existence since 2007. The current use is limited to what leases the Colorado State Land Board maintains. The Range is held in trust for the State of Colorado by the Colorado State Board of Land Commissioners (SBLC) and is a property of the State's School Trust. School Trust lands are managed by the SBLC to generate revenue for the School Trust and typically are used by specific lessees, but are not available to the general public. Currently the SBLC leases The Range for oil and gas production, concrete and asphalt pavement recycling, mining (sand and gravel extraction), and recreation (model airplanes, gliders, hunting, and horseback riding). The remainder of The Range is predominantly undeveloped.

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Natural Hazard Comments

No Data

Exotics Comments

Non-native species are generally uncommon or less dominant than the natives, however they are present and include Kentucky bluegrass (*Poa pratensis*), cheatgrass (*Bromus tectorum*), and leafy spurge (*Euphorbia esula*), amongst others.

Offsite

The landscape surrounding Lowry Range is mixed, with a subdivision adjacent to the southern-most portion, while the other directions are buffered by shortgrass prairie, mostly within the Lowry Range. The Denver suburbs are marching up to the boundaries of Lowry and will pose threats to the grassland system, most likely in the form of invasive species.

Information Needs

Future inventories for rare butterflies could prove fruitful since the host plants are available. Perform field work from May - July to search for skippers and butterflies.

ASSOCIATED ELEMENTS OF BIODIVERSITY

<u>Element</u>			<u>Global</u>	<u>State</u>	<u>Driving</u>
<u>State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>	<u>Rank</u>	<u>Rank</u>	<u>Site Rank</u>
24925	<i>Andropogon gerardii</i> - <i>Calamovilfa longifolia</i> Herbaceous Vegetation	Mesic Tallgrass Prairie	GU	S2	Yes

REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
192603	Craig, G. R. 1998. Recommended buffer zones and seasonal restrictions for Colorado raptors. Unpublished report by the Colorado Division of Wildlife. Updated October 20, 1998.
198717	Cushing, J. 2004. History of the Lowry Range. Accessed 2010. http://www.lands.state.co.us/Documents/Lowry/JC.pdf
198718	Natural Resource Options. 2006. Field Survey of the Lowry Range.
198716	Sovell J.R., L. Grunau, G. Doyle, and M. Menefee. 2006. CNHP Final Report: Lowry Range Biological Survey 2005. Colorado Natural Heritage Program, Fort Collins, CO.
198686	Sovell, J.R. and R.J. Rondeau. 2011. CNHP Final Report: Lowry Range Biological Survey 2010 Update. Colorado Natural Heritage Program, Fort Collins, CO.

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date	03/01/2011
Version Author	Rondeau, R.J.

Disclaimer

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