Level 4 Potential Conservation Area (PCA) Report

Name Purgatoire Mesas **Site Code** S.USWRO1*1279

IDENTIFIERS

Site ID 852 **Site Class** PCA

Site Alias O V Mesa
Site Alias Rourke Canyon
Site Alias Rourke Ranch Hill
Site Alias South Black Hills

Network of Conservation Areas (NCA)

NCA Site ID	NCA Site Code	NCA Site Name
-		No Data

LOCATORS

Nation United States **Latitude** 373250N

State Colorado **Longitude** 1033911W

Quad Code	Quad Name
37103-E6	O V Mesa
37103-D6	Johnson Canyon
37103-E5	Beaty Canyon

County

Las Animas (CO)

Watershed Code	Watershed Name
11020010	Purgatoire

SITE DESCRIPTION

Minimum Elevation	4,400.00	**Feet**	1,341.12	**Meters**
Maximum Elevation	5,400.00	**Feet**	1,645.92	**Meters**

Site Description

The site includes a complex of mesas and canyons overlooking the Purgatoire and Chacuaco river canyons and the red sandstone formations through which they have cut. Rising from the canyon floor to the top of the surrounding plateaus are river terraces of various size and steep rocky canyon walls and cliff faces. Within this setting are a series of mesas ranging from small to large. Numerous narrow side canyons dissect the mesas and plateaus and extend out away from the main canyons and the site perimeter. The floodplains of the Chacuaco and Purgatoire Rivers are broad and mostly dominated by weedy herbaceous vegetation, cholla cactus (*Opuntia imbricata*), and some small patches of cottonwood (*Populus deltoides*). In general, the steep slopes of the canyons and mesas are characterized by open woodlands and shrublands dominated by one-seeded juniper (*Juniperus monosperma*), mountain mahogany (*Cercocarpus montanus*), and skunkbrush (*Rhus trilobata*), and various native grass species. The mesa tops are dominated by a mosaic of cryptogamic soils and native mixed grass grasslands of New Mexico feathergrass (*Hesperostipa neomexicana*) or blue grama (*Bouteloua gracilis*) and galleta grass (*Hilaria jamesii*). Nearest to the rimrock and surrounding the grasslands are open woodlands of one-seeded juniper with native grass understories. Cholla, prickly-pear (*Opuntia polyacantha*), lace hedgehog cactus (*Echinocereus reichenbachii* var. *perbellus*), and other less common cacti, are also found on the slopes and mesa tops. Elevation ranges from about 4,400 feet near the river to slightly over 5,400 feet at the western end of OV Mesa. Several of the mesa tops and narrow side canyons are naturally isolated and have received little recent disturbance from human or livestock activity. Slightly more than half of this site is privately owned, while the remaining portions are within the Comanche National Grassland of the USFS, on State Land Board lands, and on the Department of the Army's Pinon Canyon Maneuver Site.

Key Environmental Factors

The key environmental factors operating at this site are the combination of steep rocky canyons and mesas and the hot dry climate.

Climate Description

The climate is semiarid and is typical of the high plains of southeastern Colorado where approximately 13 inches of precipitation is received annually. Most precipitation occurs between April and September, with May typically being the wettest month. Annually, climate of the area is characterized by cold winters and hot summers with winter temperatures as low as zero on at least several days and temperatures of over 100 ºF occurring on many days in July and August (HPRCC 2008).

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Land Use History

Much of the following information regarding land use history is from Friedman 1985. The area of the Purgatoire Canyon is believed to have been inhabited by people for as long as 5,000 years, and many native tribes lived in or visited the area. The first people of European descent to enter the area were with the Coronado expedition of 1540. Although considered part of Spain, the area remained sparsely populated by Euro-Americans until about 1821 when Mexico received independence from Spain and trade began between Santa Fe and Missouri. Soon thereafter, Spanish émigrés began to colonize the larger canyons. They built small settlements and ranches and raised herds of goats and sheep. The Purgatoire Canyon itself became an alternate trade route, and European settlement increased to a peak of about 400 people in the canyon by the late 1880s. Cattle and sheep ranching dominated the area until around 1909 when dry-land-farming homesteaders fenced the land. In the 1920s and 1930s, the Purgatoire Canyon area was affected by the Dust Bowl and many abandoned their homes, leaving the area to sheep and cattle ranchers. While sheep grazing was mostly discontinued in the 1950s, cattle grazing continued on most private lands. The creation of the Department of the Army's Pinion Canyon Maneuver Site in the 1980s removed grazing from that site, however, cattle grazing continues as the primary land use on adjacent private lands.

Cultural Features

No Data

SITE DESIGN

Site Map P - Partial **Mapped Date** 04/22/2008

Designer Stevens, J.E.

Boundary Justification

The boundary encompasses the tops of several mesas, the Rourke Plateau, side slopes and rim rock areas, the mouths of several other smaller side canyons, and the valley bottom. It is intended to protect the occurrences from direct physical disturbance and to provide sufficient area within which natural fire and herbivory regimes can be simulated in attempt to maintain the structure and composition of the mosaic of native plant communities.

Primary Area 18,184.73 **Acres** 7,359.13 **Hectares**

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

This site contains several globally rare plant communities and state rare plants. Most significant is a good to fair (BC-ranked) occurrence of a globally imperiled (G2/S2) shrubland community, *Cercocarpus montanus / Hesperostipa comata*, a fair (C-ranked) occurrence of a globally imperiled (G2G3/S2S3) shrubland community, *Cercocarpus montanus / Hesperostipa neomexicana*, a fair (C-ranked) occurrence of a globally imperiled (G2Q/S1) silver beard grass grassland community, *Bothriochloa laguroides* ssp. *torreyana*, a fair (C-ranked) occurrence of a globally vulnerable (G1G2Q/S1S2) forest community, *Populus deltoides / Sporobolus cryptandrus*, an excellent (A-ranked) and a good (B-ranked) occurrence of a globally vulnerable (G3/S3) grassland community, *Hesperostipa neomexicana*, and a good (B-ranked) occurrence of a globally vulnerable (G3/SU) shortgrass prairie, *Bouteloua eriopoda - Pleuraphis jamesii*. There are good (B-ranked) to fair (C-ranked) occurrences of state rare communities. This site also contains extensive high quality areas of cryptogamic soils. Although not drawn for this species, there are high quality occurrences and good habitat for the state rare (G4/S2) long-hood milkweed (*Asclepias macrotis*).

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGMENT ISSUES

Land Use Comments

The ranch lands were settled in the mid to late 1800s and have been more or less continuously grazed by sheep, and to a greater extent cattle, since that time. Alterations associated with that land use include construction of artificial stock ponds, corrals, and other minor facilities.

Natural Hazard Comments

No Data

Exotics Comments

Exotic grasses, especially *Bromus japonicus* and *Bromus tectorum*, dominate disturbed areas on the canyon

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floor and a few areas on top of mesas. Saltcedar is prevalent on the floor of the valley near the channel of the Purgatoire and Chacuaco rivers. A single saltcedar tree was found on top of a mesa near a former stockpond, but the area is now abandoned and probably too dry for it to spread or survive. Kochia and other herbaceous weeds are found near the canyon mouth.

Offsite

No Data

Information Needs

More information is warranted regarding the ecological dynamics and effects of fire suppression and historical grazing on *Juniperus monosperma* woodlands, *Cercocarpus montanus* shrublands, and the various grassland communities.

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element State ID	State Scientific Name	State Common Name	Global Rank	State Rank	Driving Site Rank
24700	*Juniperus monosperma / Hesperostipa neomexicana* Woodland	Foothills Pinyon-Juniper Woodlands	G4	S3	No
24511	*Bouteloua gracilis - Pleuraphis jamesii* Herbaceous Vegetation	Shortgrass Prairie	G2G4	S3	No
40630	*Cercocarpus montanus / Hesperostipa neomexicana* Shrubland	Foothills Shrubland	G2G3	S2S3	Yes
24511	*Bouteloua gracilis - Pleuraphis jamesii* Herbaceous Vegetation	Shortgrass Prairie	G2G4	S3	No
24700	*Juniperus monosperma / Hesperostipa neomexicana* Woodland	Foothills Pinyon-Juniper Woodlands	G4	S3	No
22673	*Hesperostipa neomexicana* Herbaceous Vegetation	Great Plains Mixed Grass Prairie	G3	S3	Yes
24787	*Stipa comata - Bouteloua gracilis* Herbaceous Vegetation	Montane Grasslands	G5	S2S3	No
24939	*Juniperus monosperma / Bouteloua eriopoda* Woodland	Juniper Woodland	GNR	S2S3	No
24939	*Juniperus monosperma / Bouteloua eriopoda* Woodland	Juniper Woodland	GNR	S2S3	No
24580	*Bouteloua eriopoda - Bouteloua hirsuta* Herbaceous Vegetation	Shortgrass Prairie	G2	SU	No
24940	*Juniperus monosperma / Bouteloua gracilis* Woodland	Foothills Pinyon-Juniper Woodlands	G5	S3S4	No
24939	*Juniperus monosperma / Bouteloua eriopoda* Woodland	Juniper Woodland	GNR	S2S3	No
24511	*Bouteloua gracilis - Pleuraphis jamesii* Herbaceous Vegetation	Shortgrass Prairie	G2G4	S3	No
22673	*Hesperostipa neomexicana* Herbaceous Vegetation	Great Plains Mixed Grass Prairie	G3	S3	Yes
24991	*Bouteloua eriopoda - Pleuraphis jamesii* Herbaceous Vegetation	Shortgrass Prairie	G3	SU	Yes
24531	*Cercocarpus montanus / Hesperostipa comata* Shrubland	Mixed Foothill Shrublands	G2	S2	Yes

REFERENCES

Reference ID	Full Citation
169764	Comanche National Grassland. 1993. Picket Wire Canyonlands Interim Management Direction, 2nd draft. U.S.D.A. Forest Service.
195120	Friedman, Paul D. 1985. Final Report of History and Oral History Studies of the Fort Carson Pinon Canyon Maneuver Area, Las Animas, Colorado. USDI. National Park Service, Interagency Archaeological Services Branch, Rocky Mountain Regional Office, Denver, CO.
195121	HPRCC. 2008. High Plains Regional Climate Center Web Page. Based on data from automated weather stations operated by Colorado for southeastern Colorado area. High Plains Regional Climate Center Web Page: <http://www.hprcc.unl.edu>
195097	Stevens, J., J. Sovell, D. Culver, K. Decker, L. Grunau, A. Lavender, and C. Gaughan. 2008. Final Report: Southeastern Colorado Survey of Critical Biological Resources 2007. Colorado Natural Heritage Program, Fort Collins, CO.

ADDITIONAL TOPICS

Additional Topics

Original site design by Kettler, S.M. 1997-03-21.

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VERSION

Version Date 04/22/2008

Version Author Stevens, J.E.

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