Level 4 Potential Conservation Area (PCA) Report

Name Dinosaur Track Greasewood Flat **Site Code** S.USCOHP5*174

IDENTIFIERS

Site ID 551 **Site Class** PCA

Site Alias None

Network of Conservation Areas (NCA)

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

LOCATORS

Nation United States **Latitude** 373714N

State Colorado **Longitude** 1033538W

Quad Code	Quad Name
37103-E5	Beaty Canyon
37103-F5	Riley Canyon

County

Las Animas (CO)

Watershed Code	Watershed Name
11020010	Purgatoire

SITE DESCRIPTION

Minimum Elevation	4,380.00	**Feet**	1,335.00	**Meters**
Maximum Elevation	4,800.00	**Feet**	1,463.04	**Meters**

Site Description

Dinosaur Track Greasewood Flat lies in the floodplain and adjacent to the banks of the Purgatoire River. It is nearly level and elevated approximately 3m above the river by undercut banks. The vegetation is dominated by greasewood (*Sarcobatus vermiculatus*), and is apparently typical of plant communities found on the Limon series silty clay loam soils (Larsen et al. 1972). The understory vegetation generally contains a mosaic of alkali sacaton (*Sporobolus airoides*), blue grama (*Bouteloua gracilis*), ring muhly (*Muhlenbergia torreyi*), and a few prickly pear cactus (*Opuntia* sp.) with a high percentage of bare ground. The slopes above the site are covered by juniper woodlands (*Juniperus monosperma*). This community supports a bird community that is distinct within the canyon in that it includes typical grassland birds as well as those that prefer semi-desert shrublands. Superficial sampling indicates low mammal density. Butterflies and tiger beetles are surprisingly few or absent.

Key Environmental Factors

The proximity of the greasewood community to the river channel and the underlying groundwater likely allows this facultative wetland species to survive in a site that would otherwise be too xeric for it.

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).

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 dryland 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 Pinon Canyon Maneuver Site in the 1980s removed grazing from that site, however,

Level 4 Potential Conservation Area (PCA) Report

Name Dinosaur Track Greasewood Flat **Site Code** S.USCOHP5*174

cattle grazing continues as the primary land use on adjacent private lands.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes **Mapped Date** 04/27/2008

Designer Stevens, J.E.

Boundary Justification

The boundary is intended to protect the greasewood community from direct physical disturbance, disturbance to the slopes above the occurrence, and disturbance to the floodplain and channel areas adjacent to the occurrence. Local processes that are important to maintaining the greasewood community include the depth to, and fluctuation of, the local water table.

Primary Area 395.22 **Acres** 159.94 **Hectares**

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

This rank is based on a fair (C-ranked) occurrence of a globally critically imperiled (G1Q/SU) bottomland shrubland, *Sarcobatus vermiculatus* / *Bouteloua gracilis*.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGMENT ISSUES

Land Use Comments

The nearby Rourke Ranch was settled in the 1870s, the headquarters was constructed by the early 1900s.

Natural Hazard Comments

No Data

Exotics Comments

Infestation of tamarisk (*Tamarix ramosissima*) along the banks of the river may be of concern due to their tendency to locally deplete water tables and displace species of concern. A very large area of the former greasewood community has been replaced by exotic monoculture or degraded by invading grasses in the understory. *Kochia* sp. covers the abandoned fields. *Elymus* and *Bromus* sp. are present in varying densities, mostly outside the identified occurrence. In general, the greasewood flats contain a higher concentration of weeds and exotic grasses nearer to roads and areas of apparent soil disturbance such as the old fields. Few exotics are present in areas more than 10m from roads.

Offsite

Off-site considerations will be essential to the long-term viability of this community type within the Picket Wire Canyonlands. The formation of the alluvial soil deposits on which these greasewood flats are restricted is apparently the result of specific hydrological character of the Purgatoire River. These fine textured soils are deposited only under low stream velocities. Similarly, river erosion is constantly eliminating portions of the floodplain. Maintaining this natural dynamic is essential to maintaining the natural community. Therefore, maintaining or restoring natural hydrology and hydroperiod of the Purgatoire River may be the most important management possible.

Information Needs

More information is needed on the hydrological history at the site, rates of deposition and erosion that control greasewood flat dynamics and water table depth and fluctuation.

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element State ID	State Scientific Name	State Common Name	Global Rank	State Rank	Driving Site Rank
24608	*Sarcobatus vermiculatus / Bouteloua gracilis* Shrubland	Saline Bottomland Shrublands	G1Q	SU	Yes

REFERENCES

Level 4 Potential Conservation Area (PCA) Report

Name Dinosaur Track Greasewood Flat **Site Code** S.USCOHP5*174

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>
160345	Larsen, Roy J., Donald L. Martin, and M. Bruce McCullough. 1972. Soil Survey of Otero County, Colorado. Soil conservation Service. 84pp.
198519	Rondeau, R.J., J.R. Sovell, J.E. Stevens, D. Clark and L. Grunau. 2010. Final Report: Southeast Colorado Survey of Critical Biological Resources 2009. Addendum to the 2007 Survey. Colorado Natural Heritage Program, Fort Collins, CO.

ADDITIONAL TOPICS

Additional Topics

Original site design by Ellingson, A.R. 1994-12-30.

VERSION

Version Date 04/27/2008

Version Author Stevens, J.E.

Disclaimer