Level 4 Potential Conservation Area (PCA) Report

Name Marshall Mesa **Site Code** S.USCOHP*5663

IDENTIFIERS

Site ID 730 **Site Class** PCA

Site Alias None

Network of Conservation Areas (NCA)

NCA Site ID	NCA Site Code	NCA Site Name
2527	S.USCOHP*27435	Rocky Flats Grasslands

LOCATORS

Nation United States **Latitude** 395610N

State Colorado **Longitude** 1051156W

Quad Code	Quad Name
39105-H2	Louisville

County

Watershed Code	Watershed Name
10190005	St. Vrain

SITE DESCRIPTION

Minimum Elevation	5,600.00	**Feet**	1,707.00	**Meters**
Maximum Elevation	5,800.00	**Feet**	1,768.00	**Meters**

Site Description

The Marshall Mesa site is part of the large outwash plain of the foothills of the Colorado Front Range below Eldorado Mountain. It consists of large, rolling mesas and swales bisected by the Coal and Rock creek drainages--southwest to northeast trending tributaries of Boulder Creek. Bedrock geology of the mesa is Cretaceous shale (Laramie Formation) capped with a mosaic of Quaternary alluvium (Machette 1975, Malde 1955). The surficial alluvium deposits are a mosaic of Rocky Flats, Verdos, and Slocum deposits interspersed with Piney Creek terrace deposits. All of the bedrock layers have differing proportions of calcium carbonate; the soils in the area tend to be enriched (Moreland and Moreland 1975). This site is strongly dominated by grassland systems. There are some relatively small patches of ponderosa pine (*Pinus ponderosa*) savanna on north-facing slopes on the north side. The savanna has a variable expression with some areas of scattered ponderosa pine and/or Rocky Mountain juniper (*Juniperus scopulorum*) and others supporting scrubby copses of skunkbush (*Rhus trilobata*), mountain mahogany (*Cercocarpus montanus*), ceanothus (*Ceanothus herbaceous, C. fendleri*), and occasional shrubby cinquefoil (*Dasiphora fruticosa*). The gravelly, well-drained soils of the mesa tops are covered with grassland mosaic dominated by mid- and tallgrass species. On the west end, the species composition is characterized by big bluestem (*Andropogon gerardii*), porcupine grass (*Hesperostipa spartea*), prairie dropseed (*Sporobolus heterolepis*), sideoats grama (*Bouteloua curtipendula*), needle-and-thread (*Hesperostipa comata*), western wheatgrass (*Pascopyrum smithii*), purple threeawn (*Aristida purpurea*), junegrass (*Koeleria macrantha*), mountain muhly (*Muhlenbergia montana*), little bluestem (*Schizachyrium scoparium*), and others. Forbs are very diverse and include soapweed (*Yucca glauca*), wavy-leaved thistle (*Cirsium undulatum*), scurfpea (*Psoralea tenuiflora*), blanketflower (*Gaillardia aristata*), hedgehog cactus (*Echinocereus viridiflorus*), prickly pear cactus (*Opuntia* spp.), mariposa lily (*Calochortus gunnisonii*), fringed sage (*Artemesia frigida*), blazing star (*Liatris punctata*), and many others. Dwarf indigo (*Amorpha nana*) and slimleaf milkweed (*Asclepias stenophylla*) occur in the grasslands. Farther east along the mesas, the tallgrass species become much less common and the matrix grassland is characterized by needle-and-thread. Within this area are small patches of New Mexico feathergrass (*Hesperostipa neomexicana*) on north-facing slope crests. These grasslands support some of the highest concentrations of grassland nesting birds in the Piedmont; while more common elsewhere in the state, this site reflects a substantial eedge-of-range habitat for these species. Within the grassland are large prairie dog towns. These towns can be very weedy and dominated by bindweed (*Convolvulus arvensis*). However, they also support burrowing owl (*Athene cunicularia*). This also supports northern leopard frog (*Rana pipiens*) and wavy-leaf stickleaf (*Nuttallia sinuata*). The portion of this site that overlaps with Doudy Draw historically contained ottoe skipper (*Hesperia ottoe*), crossline skipper (*Polites origenes*), Arogos skipper (*Atrytone arogos*), and dusted skipper (*Atrytonopsis hianna*).

Key Environmental Factors

Outwash mesa of Quaternary alluvium

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Climate Description

Annual precipitation is 12 to 18 inches. Mean annual air temperature is 48-52 degrees F., and the frost-free season is about 140-155 days.

Land Use History

Grazing, coal mining.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes **Mapped Date** 10/29/2008

Designer Neid, S.L.

Boundary Justification

Site includes extensive mesa tops, swales, and sideslope scrubby ponderosa pine savanna. The boundary was drawn to contain biodiversity occurrences with some buffer.

Primary Area 6,760.28 **Acres** 2,735.80 **Hectares**

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

The site supports an excellent to good (AB-ranked) occurrence of the globally imperiled (G2?/S2) *Andropogon gerardii - Schizachyrium scoparium* xeric tallgrass prairie, a good and a good to fair (BC-ranked) occurrence of the globally vulnerable (G3/S3) *Hesperostipa neomexicana* Great Plains mixed grass prairie, a fair (C-ranked) occurrence of the state rare (G5/S2) prairie violet (*Viola pedatifida*), a poor (D-ranked) occurrence of the state rare (G5/S2S3) dwarf wild indigo (*Amorpha nana*) and an extant occurrence of the state rare (G4/S3) black-tailed prairie dog (*Cynomys ludovicianus*).

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGMENT ISSUES

Land Use Comments

No Data

Natural Hazard Comments

No Data

Exotics Comments

Weeds include diffuse knapweed (*Centaurea diffusa*), cheatgrass (*Bromus tectorum*), chicory (*Cichorium intybus*), teasel (*Dipsacus fullonum*), Dalmation toadflax (*Linaria dalmatica*), jointed goatgrass (*Aegilops cylindrica*), musk thistle (*Carduus nutans*), scotch thistle (*Onopordium acanthium*), sulfur cinquefoil (*Potentilla recta*), and bindweed (*Convolvulus arvensis*).

Offsite

Housing developments; industrial sites; Superfund waste site; Community and Davidson Ditches bisect property; highways define boundaries of the site.

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element State ID	State Scientific Name	State Common Name	Global Rank	State Rank	Driving Site Rank
18073	*Viola pedatifida*	prairie violet	G5	S2	No
22673	*Hesperostipa neomexicana* Herbaceous Vegetation	Great Plains Mixed Grass Prairie	G3	S3	No
22673	*Hesperostipa neomexicana* Herbaceous Vegetation	Great Plains Mixed Grass Prairie	G3	S3	No
17796	*Cynomys ludovicianus*	Black-tailed Prairie Dog	G4	S3	No
24870	*Andropogon gerardii - Schizachyrium scoparium* Western Great Plains Herbaceous Vegetation	Xeric Tallgrass Prairie	G2?	S2	Yes
20956	*Amorpha nana*	dwarf wild indigo	G5	S2S3	No

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REFERENCES

Reference ID	Full Citation
198280	Machette, M.N. 1975. Geologic map of the Lafayette quadrangle, Adams, Boulder, and Jefferson counties, Colorado. U.S. Government Printing Office, Washington, D.C.
198281	Malde, H.E. 1955. Surficial geology of the Louisville quadrangle, Colorado. Geological Survey Bulletin 996-E. U.S. Government Printing Office, Washington, D.C.
198282	Moreland, D.C. and Moreland, R.E. 1975. Soils Survey of the Boulder County Area, Colorado. United States Department of Agriculture, Soil Conservation Service, in cooperation with the Colorado Agricultural Experiment Station. Soil Conservation Service , Washington, D.C.
195190	Neid, S., J. Lemly, K. Decker and D. Culver. 2009. Final Report: Survey of Critical Biological Resources in Boulder County 2007-2008. Colorado Natural Heritage Program, Fort Collins, CO.
161922	Pineda, Phyllis M. 1996. Field Survey (Butterflies) to the City of Boulder Open Space and Mountain Parks, Larimer County and Cheesman Reservoir. Field Season 1996.

ADDITIONAL TOPICS

Additional Topics

Original site design by Pineda, P.M. 1996-09-23.

VERSION

Version Date 10/31/2008

Version Author Neid, S.L.

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