Level 4 Potential Conservation Area (PCA) Report

Name Rare Plants of the Wasatch **Site Code** S.USWRO1*122

IDENTIFIERS

Site ID 827 **Site Class** PCA

Site Alias Atwell Gulch
Site Alias Corcoran Wash
Site Alias Debeque North
Site Alias Debeque South
Site Alias Jerry Gulch
Site Alias Mount Logan Foothills
Site Alias Pyramid Ridge
Site Alias Pyramid Rock
Site Alias Roan Creek
Site Alias South Dry Fork
Site Alias Sulphur Gulch West

Network of Conservation Areas (NCA)

NCA Site ID	NCA Site Code	NCA Site Name
2470	S.USCOHP*27039	Roan

Site Relations Contained in Roan (S.USCOHP*27039). Contains Sulphur Gulch (S.USCOHP*10448). Shares a boundary with Cow Ridge (S.USCOHP*478). Overlaps and shares partial boundary with Colorado River (S.USCOHP*16579).

SITE DESCRIPTION

Minimum Elevation	5,000.00	**Feet**	1,524.00	**Meters**
Maximum Elevation	5,600.00	**Feet**	1,707.00	**Meters**

Site Description

The site consists of rough, rocky hills, composed of the Atwell Gulch and Shire members of the Wasatch Formation and also portions of the Ohio Creek Formation. Eroded purple clay areas on the pinon - juniper covered slopes provide habitat for the annual Debeque phacelia (*Phacelia submutica*), while Debeque milkvetch (*Astragalus debequaeus*) is found in sandy clay soil of the drainage bottoms and on some slopes. The Naturita milkvetch is found scattered on ledges and in crevices of the sandstone rimrock overlooking the Colorado River, while Wetherill milkvetch is found on the sides of dry washes. Uinta Basin hookless cactus is generally found on alluvial terraces above the Colorado River, on steep south-facing clay and rock slopes and knolls, or at the base of the slopes on gravelly soil. Associated species in the area include sagebrush, shadscale, saltbushes, greasewood, snakeweed, spiny horsebrush, Utah juniper, galleta and Indian rice grass. Much of the area is grazed, and exotic species such as cheatgrass, horned buttercup and halogeton have invaded some areas, especially the lower flats. There are several small roads in the area. Many eroded gullies dissect the site and carry seasonal flows to the Colorado River. The condition of the site varies from pristine to degraded. There is oil and gas development throughout much of the area. In some areas, such as Corcoran Wash, sagebrush was chained in 1967, and crested wheat planted. Other areas have been burned, and have regrowth of oak and serviceberry. Grazing on some of the private lands has been heavy, and exotic species such as cheatgrass and sweet clover are abundant. In general, the steeper lands appear to be in better condition. The site includes Pyramid Rock which is an isolated peak that has been recognized as a designated Natural Area by the state, and an ACEC (Area of Critical Environmental Concern) by the BLM. The ACEC contains populations of at least three of the rare plant species and a high quality example of the Utah juniper / Salina wild rye plant association.

Key Environmental Factors

Soil structure must remain intact to preserve species of concern. Over time, more by usage than by research, botanists have gradually refined the habitat description of *Phacelia submutica* and *Astragalus debequaeus*, so that it is now generally believed to be more-or-less confined to soils derived from what Donnell (1969) identified as the Atwell Gulch and Shire members of the Wasatch Formation in western Colorado. These are typically described as brown or gray clay or adobe badlands lying immediately above (Shire) or below (Atwell Gulch) the blueish-gray Molina member of the Wasatch Formation. However, because the geologic substrate at known occurrences has not always been field-verified by trained geologists, surveyors should remain open to the possibility that the species can occur on other, similar substrates (Decker et al. 2005).

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Climate Description

Semi-arid western Colorado.

Land Use History

Area has traditionally been used lightly for grazing as the arid climate and barren soils provide little valuable forage for livestock.

Cultural Features

No Data

SITE DESIGN

Site Map P - Partial **Mapped Date** 12/18/2014

Designer Panjabi, S.S.

Boundary Justification

The boundary includes the known occurrences of *Astragalus debequaeus* and *Phacelia submutica* and intervening potential habitat. Predictive modeling indicates additional potential habitat for these species outside of the site boundary (Decker et al. 2005). Environmental data considered in element distribution modeling for these species include geology, soils, vegetation, elevation, slope, aspect, local relief and a variety of climate variables. Much of the site and surrounding area has not been surveyed for these and the other associated rare plants. A large portion of unsuitable habitat, irrigated agricultural lands along the Colorado River, was excluded; however, smaller portions of unsuitable habitat along the Colorado River and Roan Creek are included.

Primary Area 117,209.84 **Acres** 47,433.21 **Hectares**

SITE SIGNIFICANCE

Biodiversity Significance Rank B1: Outstanding Biodiversity Significance

Biodiversity Significance Comments

This site is a botanical hotspot and contains almost the entire known population of the globally imperiled (G2/S2) Debeque milkvetch (*Astragalus debequaeus*) and the globally imperiled (G2/S2) Debeque phacelia (*Phacelia submutica*). The only other known locations for these two species are within the Anvil Points site located about 15 miles to the northeast. There are several excellent (A-ranked) and good (B-ranked) occurrences of *Astragalus debequaeus* and *Phacelia submutica*. There are also excellent (A-ranked) and good (B-ranked) occurrences of the globally imperiled (G2/S2) Adobe Hills thistle (*Cirsium perplexans*), excellent (A-ranked) and good (B-ranked) occurrences of the globally imperiled (G2G3/S2S3) Naturita milkvetch (*Astragalus naturitensis*), and several good (B-ranked) occurrences of the globally imperiled (G2G3/S2S3) Colorado hookless cactus (*Sclerocactus glaucus*), a species federally listed as Threatened. Globally vulnerable (G3/S3) plants documented within the site include Wetherill milkvetch (*Astragalus wetherillii*) and long-flower cat's-eye (*Oreocarya longiflora*). This concentration of globally rare plants is exceptional and therefore warrants the B1 rank.

Other Values Rank No Data

Other Values Comments

Very large and pristine area with few human impacts and interesting geological features.

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element State ID	State Scientific Name	State Common Name	Global Rank	State Rank	Driving Site Rank
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	N
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	N
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	Y
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	N
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	Y
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	Y
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	Y
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	Y
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	Y

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17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	N
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	Y
17463	*Astragalus debequaeus*	DeBeque milkvetch	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	Y
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
19098	*Phacelia submutica*	DeBeque phacelia	G2	S2	N
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	N
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	N
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	N
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	N
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
21647	*Astragalus naturitensis*	Naturita milkvetch	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	N
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	N
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	N

22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22079	*Cirsium perplexans*	Adobe Hills thistle	G2G3	S2S3	Y
22584	*Astragalus wetherillii*	Wetherill's milkvetch	G3	S3	N
22584	*Astragalus wetherillii*	Wetherill's milkvetch	G3	S3	N
22584	*Astragalus wetherillii*	Wetherill's milkvetch	G3	S3	N
22584	*Astragalus wetherillii*	Wetherill's milkvetch	G3	S3	N
22584	*Astragalus wetherillii*	Wetherill's milkvetch	G3	S3	N
22878	*Thelypodiopsis juniperorum*	juniper tumble mustard	G2	S2	N
24362	*Oreocarya longiflora*	long-flower cat's-eye	G3	S3	N
24362	*Oreocarya longiflora*	long-flower cat's-eye	G3	S3	N
24362	*Oreocarya longiflora*	long-flower cat's-eye	G3	S3	N
24362	*Oreocarya longiflora*	long-flower cat's-eye	G3	S3	N
24362	*Oreocarya longiflora*	long-flower cat's-eye	G3	S3	N
24362	*Oreocarya longiflora*	long-flower cat's-eye	G3	S3	N
24553	*Juniperus osteosperma / Forsellesia meionandra Woodland*	Utah Juniper/Utah Greasebush	GU	S2	N
24553	*Juniperus osteosperma / Forsellesia meionandra Woodland*	Utah Juniper/Utah Greasebush	GU	S2	N
24553	*Juniperus osteosperma / Forsellesia meionandra Woodland*	Utah Juniper/Utah Greasebush	GU	S2	N
18131	*Pleuraphis jamesii* Herbaceous Vegetation	Western Slope Grasslands	G2G4	S1	N
24830	*Pinus edulis - Juniperus* spp. / *Cercocarpus montanus* Woodland	Mesic Western Slope Pinyon-Juniper Woodlands	G5	S5	N
40542	*Juniperus osteosperma / Leymus salinus spp. salinus Wooded Herbaceous Vegetation*	Mesic Western Slope Pinyon-Juniper Woodlands	G3	S2	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	Y
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	Y
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	Y
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	Y
16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	Y

16984	*Sclerocactus glaucus*	Colorado hookless cactus	G2G3	S2S3	N

LAND MANAGMENT ISSUES

Land Use Comments

Area used for grazing and oil and gas extraction. Potential for oil shale development that would likely severely threaten site, and its associated communities and plants of concern. Recreational use occurs in the area but is not heavy within site.

Natural Hazard Comments

Very steep slopes are potentially hazardous for people climbing them.

Exotics Comments

No Data

Offsite

No Data

Information Needs

The fact that *Phacelia submutica* is an annual plant that does not necessarily appear every year makes it difficult to confirm presence or absence in a single observation. A survey in an unfavorable year or at the incorrect time of year cannot rule out the possibility that *Phacelia submutica* is actually present at the site in the seed bank. Many occurrences of Naturita milkvetch and long-flower cat's-eye are historical; current surveys are needed.

REFERENCES

Reference ID	Full Citation
193560	Decker, K., A. Lavender, J. Handwerk and D.G. Anderson. 2005. Final Report: Modeling the Potential Distribution of Phacelia scopulina var. submutica (Debeque phacelia) and Astragalus debequaeus (Debeque milkvetch) in Western Colorado. Colorado Natural Heritage Program, Fort Collins, CO.
193587	Donnell, J.R. 1969. Paleocene and lower Eocene units in the southern part of the Piceance Creek Basin, Colorado. Geological Survey Bulletin 1274-M. U.S. Government Printing Office, Washington, D.C.
173289	Lyon, P., C. Pague, R. Rondeau, L. Renner, C. Slater, and C. Richard. 1996. Final Report: Natural Heritage Inventory of Mesa County, Colorado. Colorado Natural Heritage Program, Fort Collins, CO.
193460	Lyon, P., J. Sovell, and J. Rocchio. 2001. Final Report: Survey of Critical Biological Resources, Garfield County, Colorado. Vol. 1. Colorado Natural Heritage Program, Fort Collins, CO.
193561	Lyon, P., S. Spackman and K. Fayette. Final Report: Inventory and Protection of Six Rare and Endemic Plants of the Colorado Plateau. Colorado Natural Heritage Program, Fort Collins, CO.
169590	Spackman, S., K. Fayette, and P. Lyon. 1997. Final Report: Conserving the globally imperiled Debeque Milkvetch, Astragalus debequaeus Welsh. Colorado Natural Heritage Program, Fort Collins, CO.
193470	USDI Bureau of Land Management. 1987. Grand Junction Resource Area Resource Management Plan and Record Division. Grand Junction District, Grand Junction, CO.
193588	USDI Bureau of Land Management. 1992. ACEC Activity Plan and Environmental Assessment. Badger Wash ACEC, Pyramid Rock ACEC and Rough Canyon ACEC.
193571	USDI Bureau of Land Management. 1999. Glenwood Springs Resource Area. Oil and Gas Leasing and Development, Final Supplemental Environmental Impact Statement.
193586	USDI Bureau of Land Management. 2001. 6840 - Special Status Species Management.

ADDITIONAL TOPICS

Additional Topics

Original site design by Lyon, M.J. 2005-12-08.

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LOCATORS

Nation United States **Latitude** 391357N

State Colorado **Longitude** 1080811W

Quad Code	Quad Name
39108-C3	Wagon Track Ridge
39108-C2	De Beque
39108-C4	Winter Flats
39108-B1	Molina
39108-B3	Cameo
39108-D4	The Saddle
39108-D2	Red Pinnacle
39108-D3	Long Point
39108-D1	Grand Valley
39108-C1	Housetop Mountain
39108-B2	Mesa

County

Garfield (CO)

Mesa (CO)

Watershed Code	Watershed Name
14010005	Colorado headwaters-Plateau
14010006	Parachute-Roan

VERSION

Version Date 12/18/2014

Version Author Panjabi, S.S.

DISCLAIMER

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