

# Level 4 Potential Conservation Area (PCA) Report

Name Villa Grove

Site Code S.USCOHP1\*2095

## IDENTIFIERS

Site ID 170 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 381558N  
State Colorado Longitude 1055620W

<u>Quad Code</u>	<u>Quad Name</u>
38105-C8	Bushnell Peak
38105-B8	Villa Grove

## County

Saguache (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
13010003	San Luis

## SITE DESCRIPTION

Minimum Elevation	7,780.00 Feet	2,371.34 Meters
Maximum Elevation	8,100.00 Feet	2,468.88 Meters

## Site Description

The Villa Grove site contains 5,868 acres of valley bottom wetlands between the northern Sangre de Cristo Mountains and the northeastern Cochetopa Hills. The site encompasses a complex of perennial springs which support extensive fen and meadow wetlands in an otherwise semi-arid sagebrush steppe. The site extends down San Luis Creek from approximately two miles north of the town of Villa Grove to four miles southeast and ranges from 7,780 to 8,100 feet in elevation. Rock and San Luis creeks flow southward and converge with east flowing Kerber Creek in the middle of the site. This is the largest fen wetland complex in the Closed Basin, and the cold, peat soils and stable hydrology are unique on the San Luis Valley floor. Large sedge wetlands, dominated by beaked sedge (*Carex utriculata*), small flowered sedge (*Carex simulata*), water sedge (*Carex aquatilis*), and Nebraska sedge (*Carex nebrascensis*) occur at the northern end, where the hydrology is most stable. In the fen areas, peat soils are well developed and often exceed three feet in thickness. In places, exceptionally strong upwelling lifts the peat layer from the mineral substrate, producing "quaking fens". Montane wet meadows occur downstream of the fens, where soils are moist to wet, but irrigated primarily by surface flow. Common species of the meadow portion include the state rare slender sedge (*Carex lasiocarpa*), tufted hairgrass (*Deschampsia cespitosa*), and Canadian reedgrass (*Calamagrostis canadensis*). At drier margins of the wetlands, Baltic rush (*Juncus balticus*) meadows, with scattered small populations of the globally rare pale blue-eyed grass (*Sisyrinchium pallidum*) and fringed gentian (*Gentianopsis thermalis*) occur. Stream and pond habitats support excellent populations of Rio Grande chub (*Gila pandora*), and several species of trout. Pronghorn (*Antilocapra americana*) are abundant, and apparently use the site for forage and water. It is presently used for livestock pasture and receives seasonal grazing. Trampling and erosion of the moist wetland soils are common. On the adjacent, drier Baltic rush meadows, Missouri iris (*Iris missouriensis*), a species known to increase with grazing, is very abundant. Other uses are limited by private ownership.

## Key Environmental Factors

No Data

## Climate Description

No Data

## Land Use History

The northern part of this site is an important shelter from the effects of Bonanza Mine, which is located twenty miles upstream on Kerber Creek. The two northern creeks and their springfed tributaries provide off-channel refugia for aquatic elements such as the Rio Grande chub, which can flourish in low to moderately oxygenated waters which exclude predatory trout. In 1997, heavy rains caused upstream tailing ponds to overtop, resulting in toxic spills and fish mortality in Kerber Creek, and San Luis Creek downstream of their confluence. The off-channel aquatic habitats present at this site may be especially important biotic reservoirs for the recolonization of the San Luis Creek and Kerber Creek channels following such lethal spills.

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## Cultural Features

No Data

## SITE DESIGN

Site Map Y - Yes

Mapped Date 01/26/1998

Designer Sarr, D.A.

## Boundary Justification

This boundary is drawn to 1) protect the wetland elements from direct impacts such as trampling or other surface disturbances; 2) provide suitable habitat where additional individuals can become established over time; and 3) encompass the full range of valley bottom habitats surrounding the springfed wetlands. The site boundary was based on initial aerial photo analysis, a field visit by a CNHP scientists, and subsequent corroboration with satellite imagery.

Primary Area 6,347.80 Acres

2,568.87 Hectares

## SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

## Biodiversity Significance Comments

Of primary significance is the excellent (A-ranked) population of the globally vulnerable (G3/S1?) Rio Grande chub (*Gila pandora*) found in San Luis Creek. This minnow-like fish is restricted to the Rio Grande watershed, including the Closed Basin. Although we do not clearly understand the status and trends for this species, we do know its distribution is limited to fewer than 20 occurrences in Colorado, its main center of distribution. In addition to the globally imperiled fish, this site supports an excellent (A-ranked) example of the state rare (G4/S3) short-beaked sedge (*Carex simulata*), a good (B-ranked) example of the globally common (G5/S4) beaked sedge (*Carex utriculata*) fen wetlands, an excellent (A-ranked) occurrence of the state rare (G4/S1) slender sedge (*Carex lasiocarpa*) montane meadows, and good (B-ranked) occurrences of the globally rare (G2G3/S2) pale-blue eyed grass (*Sisyrinchium pallidum*). The discovery of the slender sedge is a significant range extension, previously only known in Colorado from North Park (Weber pers. com.); it is more common in the northern Rocky Mountain states. Fen wetlands, which are formed by stable discharge of groundwater, are one of Colorado's rarer wetland types, particularly at elevations below 9,000 feet. They require wet, anaerobic soils, carbon accumulation from vigorous plant growth, low soil temperatures, and thousands of years to form their characteristic peat soils. Once formed, these peat soils are essentially irreplaceable in any management time frame. The fen wetlands at the Villa Grove site are perhaps the largest relatively low elevation fens in Colorado.

Other Values Rank No Data

## Other Values Comments

No Data

## LAND MANAGEMENT ISSUES

## Land Use Comments

No Data

## Natural Hazard Comments

No Data

## Exotics Comments

No Data

## Offsite

No Data

## Information Needs

No Data

## 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>
16887	<i>Carex simulata</i> Herbaceous Vegetation	Wet Meadow	G4	S3	No
19189	<i>Gila pandora</i>	Rio Grande Chub	G3	S1?	No
21615	<i>Sisyrinchium pallidum</i>	pale blue-eyed grass	G2G3	S2	Yes
19189	<i>Gila pandora</i>	Rio Grande Chub	G3	S1?	No

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21816	<i>Carex lasiocarpa</i> Herbaceous Vegetation	Montane Wetland	G4?	S1	No	
18795	<i>Carex utriculata</i> Herbaceous Vegetation	Beaked Sedge Montane Wet Meadows	G5	S4	No	
21615	<i>Sisyrinchium pallidum</i>	pale blue-eyed grass	G2G3	S2	Yes	

## REFERENCES

Reference ID	Full Citation
-	No Data

## ADDITIONAL TOPICS

**Additional Topics**  
No Data

## VERSION

**Version Date** 01/26/1998  
**Version Author** Sarr, D.A.

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