U. Relevance and Importance Evaluations Of Areas of Critical Environmental Concern Nominations

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Executive Summary

This report documents the evaluation of 22 locations for consideration as Areas of Critical Environmental Concern (ACEC) reviewed as part of the San Juan Resource Management Plan revision (RMP). Two of the 22 areas evaluated are to be considered further as alternatives are developed for the plan and the environmental analysis is completed. These areas are referred to as Potential ACECs. To be considered further, an area must be located on public land administered by the Bureau of Land Management (BLM) and meet the relevance and importance criteria described in BLM Manual 1613– Areas of Critical Environmental Concern (BLM 1988).

This evaluation does not designate an area as an ACEC. Potential ACECs are proposed for designation if the analysis in the RMP/EIS shows that special management is required to protect the relevant and important values. Actual designation of an ACEC occurs when the Record of Decision (ROD) is signed and the RMP is approved.

Introduction

The Federal Land Policy and Management Act (FLPMA) states that the BLM will give priority to the designation and protection of Areas of Critical Environmental Concern (ACEC) in the development and revision of land use plans. Land use plans in the BLM are known as Resource Management Plans (RMPs) and the San Juan BLM is currently in the multi-year process of revising such a Plan. This RMP will replace the San Juan/San Miguel RMP that was approved in 1985.

This report summarizes the relevance and importance evaluations for 22 areas identified for consideration as an ACEC located on lands administered by the BLM's San Juan Public Lands Center. These evaluations have been completed in accordance with guidance provided in BLM Manual 1613–Areas of Critical Environmental Concern. Of the 22 areas, 11 meet the relevance and importance criteria. The Big Gypsum Valley and the remnant of the Anasazi ACEC not included in the proclamation for the Canyons of the Ancients National Monument are the only areas reviewed that were selected by management for further study in the revision process.

What is an ACEC?

BLM regulations (43 CFR part 1610) define an ACEC as an area "within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." Therefore, private lands and lands administered by other agencies are not included in the boundaries of an ACEC.

An ACEC differs from other special management designations such as Wilderness Study Areas in that designation by itself does not automatically prohibit or restrict other uses in that area. The one exception is that a mining plan of operation is required for any proposed mining activity within a designated ACEC. The ACEC designation is an administrative designation that is accomplished through the land use planning process. It is unique to the BLM in that no other agency uses this form of designation. The intent of Congress in mandating the designation of ACECs through FLPMA was to give priority to the designation and protection of areas containing truly unique and significant resource values.

The ACEC process

There are several steps in the identification and evaluation of potential ACECs. These steps include the identification of areas that may meet the relevance and importance criteria, evaluation of those areas to determine if they meet the criteria, and consideration of the potential ACECs as alternative management scenarios are formulated and effects are analyzed in the Draft RMP/EIS.
When released, the draft RMP/EIS typically contains recommendations on which areas identified as potential ACECs are proposed for designation and for which public comment is requested. Public comments are reviewed and considered and adjustments are made as necessary before the Proposed RMP/Final EIS is released. Designation of an ACEC then occurs in the Record of Decision approving the RMP. Each of these steps is briefly described below.

Identification/nomination

ACECs can be nominated or identified at any time, but are only designated through the BLM's land use planning process. Recommendations from the public are generally solicited as part of the scoping process during development of a land use plan for a particular area. In compiling a list of areas to be considered BLM looks at:

Existing ACEC's,

Areas nominated by the public,

Areas nominated by staff,

Areas and resources identified through inventory and monitoring,

Adjacent designations of other federal and state agencies,

Information on relevance and importance can be obtained from internal and external sources as appropriate.

Relevance and importance criteria

Nominations are evaluated to determine whether they meet the relevance and importance criteria. A nomination must meet one or more of the relevance and importance criteria to be considered a potential ACEC.

Relevance

An area meets the relevance criteria if it contains one or more of the following:

- A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).
- A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).
- A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).
- Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or

dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the RMP process that it has become part of a natural process.

Importance

The value, resource, system, process, or hazard described in the relevance section must have substantial significance and values to meet the importance criteria. This generally means that the value, resource, system, process, or hazard is characterized by one or more of the following:

- Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
- Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
- Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.
- Has qualities that warrant highlighting in order to satisfy public or management concerns about safety and public welfare.
- Poses a significant threat to human life and safety or to property.

Consideration of potential ACECs

Potential ACECs are considered as RMP alternatives are developed. Each potential ACEC is proposed for designation in at least one of the management alternatives. The need for special management and the resulting effects from applying such management are assessed in the associated environmental analysis for the RMP. The Preferred Alternative identifies which potential ACECs are proposed for designation.

Comment on proposed ACECs

A notice of any areas proposed for ACEC designation is published in the Federal Register along with a Notice of Availability of the draft RMP/EIS requesting public comment. The public may comment on any aspect of the ACEC analysis at this point in the process. These comments are then considered in preparation of the proposed RMP/Final EIS. After a 30-day protest period, a Record of Decision is prepared and the plan is approved.

Designation

A potential ACEC is proposed for designation if the area requires special management. Special management is defined as management outside of standard or routine practices, and usually includes more detail than other prescriptions contained within the Plan. Special management is usually needed when one of the following conditions is met:

- Current management or management activities proposed in the alternative are not sufficient to protect the relevant and important resource.
- The needed management action is considered unusual or outside of the normal range of management practices typically used.

- The change in management is difficult to implement without ACEC designation.
- If analysis determines that special management is required, the area is recommended for designation. Designation of ACECs occurs when the Record of Decision is signed approving the RMP.

Background

Upon approval in 1985, the San Juan/San Miguel RMP designated 156,000 acres as the Anasazi ACEC due to significant cultural resources and ongoing oil and gas development.

In 2000 President Clinton issued a proclamation designating most of this ACEC as the Canyons of The Ancients National Monument which will have a stand-alone Resource Management Plan. Approximately 1120 acres of the Anasazi ACEC were not included in the National Monument and are currently managed as an ACEC. This area will be addressed for continued ACEC designation or for removing the designation in the current RMP revision.

Scoping for the San Juan RMP revision was initiated with publication of the Notice of Intent in the Federal Register on December 14, 2004. Subsequent mailings and public meetings occurred during 2005.

During the planning process, the Nature Conservancy and Colorado Natural Heritage Program (CNHP) staff reviewed information from BLM inventories, Colorado Natural Heritage Program records, TNC Ecoregional Assessments and Colorado Division of Wildlife species of concern data to ensure that all potentially relevant and important ecological values within the planning area were considered.[1] The analysis area for the identified values encompassed all federal lands, which includes both federal surface and mineral estate. BLM does not manage, and is not proposing to include, private surface or private mineral estate as part of an ACEC.

The San Juan Public Lands Center partnered with CNHP in developing biological assessments to identify significant ecological resources since the mid-1990s and they have developed biological assessments for San Miguel County (2000), San Juan County (2003), La Plata County (2004), Dolores County (2005), and Montezuma County (2005)[2]. CNHP identified potential conservation areas for targeted species which were evaluated by the Nature Conservancy. Field work conducted in 2005 resulted in the identification of several additional PCAs of outstanding significance, including Big Gypsum Valley and Disappointment Valley Northwest. The Dry Creek Basin PCA was merged at that time into a larger San Miguel Basin PCA to recognize important Gunnison Sage Grouse habitat. A total of 37 potential conservation areas with biodiversity ranks of B1-outstanding, B2-Very High, and B3-High were evaluated by TNC.

[1] San Juan Planning for Biodiversity Model Project
[2] Rare plant survey Dolores Montezuma

TNC recommended 14 PCA's with a minimum of 75% BLM surface management responsibility as being ecologically important and those have been included for consideration as potential ACEC's.

Table U.1 - CNHP potential conservation areas considered in ACEC analysis

CNHP PCAs (for 75% BLM managed Acreage)	Biodiversity significance[3]	Acres on BLM-managed lands in the SJPA	% of total acres on the BLM-managed lands in the SJPA	CNHP Map Reference
Big Gypsum Valley [4]	B2 – Very high	17165	82%	2034
Cement Creek Iron Fen	B2 – Very high	455	75%	1006
Cinnamon Pass	B3 – High	562	89%	204
Coyote Wash	B2 – Very high	840	100%	1505
Dolores River from Slick Rock to Bedrock (inclusive of Dolores River @ Andy's Mesa, and Dolores River @ Anderson Mesa)	B2 – Very high	18,083	100%	949
Grassy hills	B2 – Very high	420	100%	809
Little Gypsum Valley	B2 – Very High	1,766	95%	923
McIntyre Canyon	B2 – Very high	2,980	96%	1238
Muleshoe Bench	B3 – High	663	96%	864
Picayune Gulch	B3 – High	23	91%	1436
Silveys Pocket	B3 – High	707	100%	1477
Slick Rock[5]	B2 – Very high	959	98%	1640
Slick Rock Hill	B2 – Very high	2,381	99%	738
Spring Creek Basin	B2 – Very high	5,589	98%	2342
Subtotal Acreage 52,593				
CNHP PCAs for which BLM manages less than 75% but greater than 25% of the total acreage of the PCA	Biodiversity significance	Acres on BLM-managed lands in the SJPA	% of total acres on the BLM-managed lands in the SJPA	CNHP Map Reference
Disappointment Valley Northwest	B2: Very high	2720	65%	2343
Lake Como	B2 – Very high	100	42%	1113
Mesa Verde Entrance	B2 – Very high	1,268	37%	2210
San Miguel Basin (Dry Creek Basin Portion)	B2 – Very high	34,941	57%	2228
SubTotal Acreage 39,029				

[3] B1 Outstanding Significance: the only site known for an element or an excellent occurrence of a G1 species.
B2 Very High Significance: one of the best examples of a community type, good occurrence of a G1 species, or excellent occurrence of a G2 or G3 species.
B3 High Significance: excellent example of any community type, good occurrence of a G3 species, or a large concentration of good occurrences of state rare species.

[4] Big Gypsum PCA, Disappointment Valley Northwest PCA and Spring Creek PCA added to San Miguel survey by CNHP in 2005, Little Gypsum PCA changed to reflect Crypthanta gypsophila.

[5] Acreage overlap with Dolores River- Slick Rock to Bed Rock, Slick Rock and Slick Rock Hill

Members of the BLM's planning team were also requested to submit internal information for consideration. One additional potential ACEC for Gunnison sage grouse northwest of Dove Creek, Colo., containing 960 acres BLM and 3,500 acres of private land with conservation easements held by the Colorado Division of Wildlife (21% BLM). Other references consulted for locations to consider for potential ACEC designation included: BYU report and file on Horse Range Mesa Paleontological Site, and San Juan Citizens Alliance scoping comments.

Due to all of these efforts, 22 areas/nominations for ACEC were considered during the relevance and importance evaluations. The list of all locations considered is summarized in Table T.2.

Table U.2 - Locations considered as potential Areas of Critical Environmental Concern

Location Name	Nominator* Source	Values of Concern-Comments-Relevance	Biodiversity significance & Importance	Acres of Public Land	Relevance and Importance Evaluation
Big Gypsum Valley	Colorado Natural Heritage Program /The Nature Conservancy	Plant: two excellent (A-ranked) and two good (B-ranked) occurrences of Gypsum Valley cat-eye, a plant that is critically imperiled (G1,S1) state wide and globally. Gypsum rim-lichen (Lecanora gypsicola) and Nodule cracked lichen (Acarospora nodulosa var. nodulosa), both critically imperiled (G1S1) state wide and globally, Changing earthscale (Gypsoplaca macrophylla), a globally vulnerable plant (G3G4), Weak-stemmed mariposa lily (Calochortus flexuosus), an apparently secure plant globally(G4) but imperiled (S2) in Colorado, and Nealley's needlegrass, a demonstrably secure(G5) plant globally and a critically imperiled (S1) plant in Colorado .	B1- Outstanding	17,165	Relevant and important resources- portions included in Big Gypsum Valley Potential ACEC
Cement Creek Iron Fen	Colorado Natural Heritage Program /The Nature Conservancy	Plant Community – (Picea engelmannii)/ Betula glandulosa/ Carex aquatilis – Sphagnum angustifolium (iron fen)	B2 – Very high	455	No- Low Percentage of Public Land
Cinnamon Pass	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Draba crassa (thickleaf whitlowgrass) Plant – Eriophorum altaicum var. neogaeum (altai cottongrass) Plant Community – Carex vernacular (alpine wetland)	B3 – High	562	No- importance of resources of local significance
Coyote Wash	Colorado Natural Heritage Program /The Nature Conservancy	Colorado's largest population of the Kachina daisy is located here. Identified as a Colorado Natural Area. Recommended as a Research Natural Area	B2 – Very high	329	Relevant and important resources- Included as part of Dolores River Canyon Special Management Area

Location Name	Nominator* Source	Values of Concern-Comments-Relevance	Biodiversity significance & Importance	Acres of Public Land	Relevance and Importance Evaluation
Disappoint-ment Valley Northwest	Colorado Natural Heritage Program /The Nature Conservancy	A good (B-ranked) and fair (C-ranked) occurrence of the Gypsum Valley cat-eye, a globally imperiled (G1) plant. There is also an excellent (A-ranked) occurrence of Naturita milkvetch, globally imperiled to vulnerable (G2G3).	B1-Outstanding	2719	No- Low Percentage of Public Land
Dolores River Canyon Slick-rock to Bed-rock	Colorado Natural Heritage Program /The Nature Conservancy	Plant Community – Forestiera Pubescens Shrubland (Foothills Riparian Shrubland). Plant Community – Salix Exigua/ Mesic Graminoid (Coyote Willow/ Mesic Graminoid)	B2 – Very High	15,384	Relevant and important resources-Included as part of Dolores River Canyon Special Management Area
Grassy hills	Colorado Natural Heritage Program /The Nature Conservancy	Plant Community – Stipa comata – West (Western Slope Grasslands)	B2 – Very high	420	Relevant and important resources-Need for Special Management not in evidence.
Horse Range Mesa Vertebrate Paleontolog-ical Site	BYU Study	Camarasaurus, Carnosaur, Sauropod, Stegosaurus dinosaur fossils.	High	200	Inconclusive report on significance in project file
Lake Como	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Draba graminea (San Juan Whitlow-grass) Plant – Draba crassa (Thick-leaf Whitlow-grass) Plant – Draba streptobrachia (Colorado Divide Whitlo	B2 – Very high	100	No- Low Percentage of Public Land

Location Name	Nominator* Source	Values of Concern-Comments-Relevance	Biodiversity significance & Importance	Acres of Public Land	Relevance and Importance Evaluation
Little Gypsum Valley	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Astragalus naturitensis (Naturita Milkvetch) Plant – Ochlodes yuma (Yuma Skipper) Plant – Penstemon breviculus (Little Penstemon) Bird – Vireo vicinior (Gray Vireo)	B2 – Very high	1,766	Relevant and important resources- Portion is included in Big Gypsum Valley Potential ACEC.
Mesa Verde Entrance	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Townsendia glabella (Gray's Townsend-daisy) Plant – Penstemon breviculus (Little Penstemon) Plant – Gila haydenii (San Juan Gilia)	B2 – Very high	1,268	No- Low Percentage of Public Land
McIntyre Canyon	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Astragalus naturitensis (Naturita Milkvetch) Plant Community – Pinus edulis/ Cercocarpus montanus (Mesic Western Slope Pinyon-Juniper Woodlands) Plant Community – Aquilegia micrantha – Mimulus eastwoodiae (Hanging Gardens) Plant community – Pinus edulis/ Stipa comata (Xeric Western Slope Pinyon-Juniper Woodlands) Plant – Mimulus eastwoodiae (Eastern Monkey-flower)	B2 – Very high	2,980	Relevant and important resources- Included as part of Dolores River Canyon Special Management Area
Mud Canyon /Remnant ACEC	Colorado Natural Heritage Program /The Nature Conservancy, BLM	Existing ACEC- ancestral puebloan cultural resources. Plant – Astragalus deterior (Cliff-palace Milkvetch) Plant – Astragalus naturitensis (Naturita Milkvetch) Plant – Penstemon breviculus (Little Penstemon)	B3- High	6,369	Considered in Plan Alternative as existing ACEC do to existing designation in 1985 RMP
Muleshoe Bench	Colorado Natural Heritage Program /The Nature Conservancy	Plant Community – Stipa comata – West (Western Slope Grasslands)	B2 – Very high	663	Relevant and important resources- Included as part of Dolores River Canyon Special Management Area

Location Name	Nominator* Source	Values of Concern-Comments-Relevance	Biodiversity significance & Importance	Acres of Public Land	Relevance and Importance Evaluation
Northdale Gunnison Sage Grouse Restoration Area	Bureau of Land Management	Gunnison sage grouse Restoration area in cooperation with CDOW < 20% BLM Surface Management	N/A	960	Relevant and important resources- Low Percentage of Public Land
Picayune Gulch	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Draba crassa (Thickleaf whitlowgrass) Plant – Draba crassa (Thickleaf whitlowgrass)	B3 – High	23	No- importance of resources is of local significance
San Miguel Basin (Dry Creek Basin, Hamilton, Miramonte)	Colorado Natural Heritage Program /The Nature Conservancy	Animal – Centrocercus minimus (Gunnison sage grouse)	B2 – Very high	34,941	Relevant and important resources- Low Percentage of Public Land
Silveys Pocket	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Astragalus naturitensis (Naturita milkvetch) Plant – Pediomelum aromaticum (Paradox breadroot) Plant Community – Stipa comata – West (Western Slope grasslands)	B3 – High	707	No- importance of resources is of local significance
Slick Rock	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Astragalus naturitensis (Naturita milkvetch) Lizard – Aspidoscelis velox (Plateau Striped Whiptail)	B2 – Very high	976	Relevant and important resources- Low Percentage of Public Land

Location Name	Nominator* Source	Values of Concern-Comments-Relevance	Biodiversity significance & Importance	Acres of Public Land	Relevance and Importance Evaluation
Slick Rock Hill	Colorado Natural Heritage Program /The Nature Conservancy	Plant – Astragalus naturitensis (Naturita milkvetch) Plant Community – Stipa comata – West (Western Slope grasslands) Animal – Hyla arenicolor (canyon treefrog) Plant – Penstemon breviculus (little penstemon) Plant Community- Pinus edulis/ Cercocarpus montanus (Mesic Western Slope pinyon-juniper woodlands)	B2 – Very high	2,381	Relevant and important resources- Need for Special Management not in evidence.
Snaggletooth Portion of Dolores River Canyon	San Juan Citizen's Alliance	Scenery, Roundtail chub, flannelmouth sucker, bluenose sucker, speckled dace	High	19,427	Relevant and important resources- Included as part of Dolores River Canyon Special Management Area
Spring Creek	Colorado Natural Heritage Program /The Nature Conservancy	Gypsum Valley cateye (Cryptantha gypsophila), a critically imperiled plant in Colorado (S1) and globally (G1) Pygmy sagebrush (Artemisia pygmaea), a critically imperiled plant in Colorado (S1),	B2 – Very high	5,659	Relevant and important resources exist- Within Spring Creek Wild Horse Herd Management Area
		Total Acres Considered 115,454			
		Total Acres meeting Relevance and Importance Criteria of a Potential ACEC 72,543			

Importance and Relevance Evaluations

The information provided below is organized in alphabetical order by name of the nominated area. All legal locations are based on the New Mexico Principal Meridian and most acreages were calculated using the 1:24,000 scale Geographic Information System (GIS) ownership coverage for lands in the planning area.

Maps are included in Figure T.1 for the 11 areas considered which met the relevance and importance criteria. These include:

Big Gypsum Valley PCA
Coyote Wash PCA
Dolores River Canyon- Slick Rock to Bedrock PCA
Grassy Hills PCA
Little Gypsum Valley
McIntyre Canyon PCA
Mud Springs PCA/ Remnant Anasazi ACEC
Muleshoe Bench
Slick Rock Hill PCA
Snaggletooth Portion of Dolores River Canyon
Spring Creek PCA

Big Gypsum Valley PCA

Reference: CNHP Potential Conservation Area (PCA) Report Name: Big Gypsum Valley Site Code S.USCOHP*21254)

Description of area: The Big Gypsum Valley PCA is located in northern San Miguel County about 14 miles southwest of Naturita, Colorado. To access the PCA, drive Highway 141 going east from Slick Rock or south from Naturita and turn west on County Road 20R.

USGS 7.5 minute quadrangle: Gypsum Gap and Hamm Canyon

Elevation: 6,100 to 6,500 feet

Size: Approximately 21,145 acres; 17,165 acres public land.

General description: This PCA is located north of Disappointment Valley and east of the Dolores River. It extends from the Dolores River canyon on the west to the headwaters of Big Gypsum Creek east of Highway 141. The valley is one of several parallel northwest-southeast trending valleys that were formed by the collapse of ancient salt domes. It runs parallel to Dry Creek Basin on the north and Disappointment Valley on the south.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). PCA identified by CNHP foroOutstanding biodiversity significance. This PCA supports an excellent (A-ranked) occurrence of a globally imperiled (G1) plant.

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

The Big Gypsum Valley PCA's outstanding (B1) biodiversity significance rank is based on two excellent (A-ranked) and two good (B-ranked) occurrences of Gypsum Valley cat-eye, a plant that is critically imperiled (G1,S1) statewide and globally. Other rare plants in the PCA include Lecanora gypsicola, nodule cracked lichen, both critically imperiled (G1S1) statewide and globally, Timdal, a globally vulnerable plant (G3G4), weak-stemmed mariposa lily, an apparently secure plant globally(G4) but imperiled (S2) in Colorado, and Nealley's needlegrass, a demonstrably secure(G5) plant globally, and a critically imperiled (S1) plant in Colorado. In addition, there is an excellent (A-ranked) occurrence of a state rare (G4/S2) plant, weak-stemmed mariposa lily (Calochortus flexuosus).

Findings: This potential conservation area meets both the relevance and importance criteria for A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Cement Creek Iron Fen

Reference: CNHP Potential Conservation Area (PCA) Report Name: Cement Creek Iron Fen Site Code S.USCOHP*23594)

Location: San Juan County, State Highway 110, along Cement Creek, north of Silverton.

USGS 7.5 minute quadrangle: Silverton and Ironton.

Size: Approximately 56 acres

Elevation: 10,200 ft. to 11,300 feet

Cement Creek is one of the three major tributaries of the upper Animas River, between the Mineral Creek and main stem of the Animas. Cement Creek is located northwest of the town of Silverton and south of the town of Gladstone. Iron fens and associated limonite

ledges can be found along four miles of Cement Creek starting just south of the Gladstone townsite. The most prominent iron fens are located at Tiger Gulch. The Cement Creek Iron Fens are fed by groundwater seeping from eastern and western valley walls as well as overflow from Cement Creek. A common feature of iron fens is limonite terraces or iron precipitates that have been deposited onto organic matter in layers. These terraces will perch the water table and form an extensive network of pools and ponds, Cement Creek Iron Fens are good examples of this process. Cement Creek iron fens are dominated by acid-tolerant shrubs with a thick ground cover of a variety of sphagnum. and other mosses. Engelmann spruce (Picea engelmannii) dominates the tree layer. Bog birch (Betula glandulosa) and dwarf blueberry (Vaccinium cespitosum) dominate the shrub layer. Mosses, bluejoint (Calamagrostis canadensis), water sedge (Carex aquatilis), and alpine spicy wintergreen (Gaultheria humifusa) dominate the herbaceous layer.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity). PCA identified by CNHP for very high biodiversity significance. Nearly irreplaceable. A good occurrence of a globally imperiled (G2) plant community.

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

This site supports a good occurrence (B-ranked) of a globally imperiled (G2/S2) iron fen plant community. Currently there are only 15 known iron fens known globally, five of which occur in San Juan County.

Findings: This potential conservation area meets both the relevance and importance criteria for a fish and wildlife value and a natural process or system with more than local significance. However public land ownership is a minor part of the total area of the PCA, best example of fens in the PCA is along county road at Tiger Gulch on private land.

Cinnamon Pass PCA

Location: San Juan County, Alpine Loop, San Juan County Road 5, about 10 air miles northeast of Silverton.

USGS 7.5 minute quadrangle: Handies Peak.

Size: 630 acres

Elevation: 12,000 ft. to 13,328 feet

The Cinnamon Pass PCA supports a good (B-ranked) occurrence of thickleaf whitlowgrass, a plant that is vulnerable (G3) globally. There is also an excellent (A-ranked) occurrence of alpine wetlands dominated by Carex vernacula, a community that is unranked (GUSU) at present, and for which further research is needed to determine its rarity. The wetland areas contain excellent quality (A-ranked) patches of altai cottongrass (Eriophorum altaicum var. neogaeum), a sub-species that is globally vulnerable (T3T4/S3). The boundary is not intended to include all of the area that would be required to sustain a population of the Uncompahgre fritillary (at this site, a total of five individuals were observed on Aug. 8, 1995, and an even-year brood could not be confirmed). It does, however, contain appropriate habitat, including the snow willow upon which the butterflies depend.

This site contains most of the northeast-facing bowl below Cinnamon Mountain. It is bisected by a Jeep road that connects Animas Forks and Lake City. Geologically, it is

situated on the San Juan volcanic ash flow tuff. High ridges define the site, forming a tight horseshoe-shaped alpine bowl, with Cinnamon Mountain (13,328 ft.) as the high point, on the south side of the site.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity). PCA identified by CNHP for high biodiversity significance. A good occurrence of a globally vulnerable (G3) plant community.

Importance criteria: Qualities are not more than locally significant in giving PCA its special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

Qualities or circumstances do not make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This potential conservation area meets the relevance criteria but not the importance criteria as the G3 plant community is not of more than local importance.

Coyote Wash PCA

Location: Coyote Wash is located 9.5 air miles south of Paradox, Colo., in extreme southwestern Montrose County.

USGS 7.5 minute quadrangles: Anderson Mesa

Elevation range: 5,100 to 5,800 feet

Size: 329 acres

Coyote Wash is a steep-sided tributary canyon that joins the Dolores Canyon in

the roadless area between Slickrock and Bedrock. Its flat sandy bottom has a small meandering stream that occasionally floods. Colorado's largest population of the Kachina daisy is located here. It grows in horizontal crevices in seeping alcoves.

Site contains an excellent (A-ranked) occurrence of the globally imperiled (G2/S1) Kachina daisy (Erigeron kachinensis). This species is the most imperiled of all plants found in San Miguel and Montrose counties. As one of only two known populations of Kachina daisy in Colorado, this site is extremely important for further research. Current taxonomic research on the Kachina daisy may result in assigning the Colorado plants to a separate species or variety, in which case this population would be considered even more rare and imperiled, perhaps raising its biodiversity rank to B1 (outstanding significance). This site also contains several good occurrences of two globally vulnerable plant species, Eastwood monkeyflower (Mimulus eastwoodiae) and helleborine (Epipactis gigantea), an extant occurrence of the state rare (G4/S2) spotted bat (Euderma maculatum) and an excellent (A-ranked) occurrence of the globally imperiled to secure (G2G4/S2) Hesperostipa comata grassland community.

Site has been identified as a State Natural Area, recommended as a Research Natural Area, and is a BLM Wilderness Study Area (WSA).

Biodiversity rank: B2 (very high biodiversity significance) The Coyote Wash PCA contains the best known Colorado occurrence of the globally imperiled Kachina daisy.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This Potential Conservation Area meets both the relevance and importance criteria for a natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). Features included in Dolores Canyon Special Management Area.

Disappointment Valley Northwest PCA

Location: The Disappointment Valley PCA is located in San Miguel County about 20 miles southwest of Naturita. To access this PCA drive Highway 141 south from Naturita toward Dove Creek.

USGS 7.5 minute quadrangle: Hamm Canyon and Joe Davis Hill

Elevation: 5,600 - 5,800 feet

Size: Approximately 4,192 acres

General description: Disappointment Valley is the southernmost of several parallel northwest/southeast trending valleys in western Colorado that were formed by the collapse of ancient salt domes. The PCA lies to the south of Big Gypsum Valley, on the north side of Disappointment Creek, a major tributary of the Dolores River. Vegetation of the valley is mapped as a mosaic of big sagebrush, greasewood and salt desert scrub.

The Disappointment Valley PCA supports a good (B-ranked) and fair (C-ranked) occurrence of the Gypsum Valley cateye, (Cryptantha gypsophila), a globally imperiled (G1) plant first described in 2004. There is also an excellent (A-ranked) occurrence of Naturita milkvetch, globally imperiled to vulnerable (G2G3).

Biodiversity rank: B2: Very high biodiversity significance. This PCA supports a good (B-ranked) occurrence of a globally imperiled (G1) plant.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This potential conservation area meets both the relevance and importance criteria for a natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). However, public land ownership is a minor part of the total area of the PCA.

Dolores River Canyon – Slickrock to Bedrock PCA

Location: Extends between the old townsite of Slickrock and Bedrock in northwestern San Miguel County and southwestern Montrose County.

USGS 7.5 minute quadrangles: Anderson Mesa, Bull Canyon, Gypsum Gap, Hamm Canyon, Horse Range Mesa, Joe Davis Hill, Paradox.

Legal description: T44N R19W Sections 12, 13, 21, 24, 25; T44N R18W Sections 7, 8, 9, 18, 19, 30; T45N R19W Sections 1, 12; T45N R18W Section 4-9, 17-21, 28, 29, 32, 33; T46N R18W Sections 30, 31; T46N R19W Sections 1, 2, 10, 11, 12, 14, 15, 22, 23, 25, 26, 35, 36; T47N R19W Sections 35, 36; T47N R18W Sections 19, 30, 31.

Elevation range: 4,966 - 6,200 feet

Size: 15,384 acres

General description: This PCA includes the riparian zone and adjacent uplands along the Dolores River for approximately 50 miles, from Slickrock north to Bedrock. Most of this area is roadless and accessible only by raft, canoe or kayak. The canyon bottoms support a nearly continuous occurrence of the riparian plant association known as New Mexico privet foothills riparian shrubland. Typical vegetation along the river includes a band of coyote willow, mixed with giant reed at the water's edge between the low and high water marks. On slightly higher ground is a band of New Mexico privet, often accompanied by skunkbrush, big sagebrush, giant reed and wild rose. Cottonwoods and box elders are occasional. Most of this area has few weeds, and surprisingly little tamarisk compared with other parts of the river.

Biodiversity rank: B2: Very high biodiversity significance. An A-ranked occurrence of a G2 natural community. The Dolores River Canyon PCA supports a very high biodiversity (B-2 ranked) and excellent (A-ranked)occurrence of the Forestiera pubexcens-Rhus trilobata (G2) riparian shrub community.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). PCA identified by CNHP.

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.

Findings: This potential conservation area meets both the relevance and importance criteria for a natural process or system value with more than local significance. Features included in Dolores Canyon Special Management Area.

Grassy Hills PCA

Site is located on a bench southwest of the confluence of Gypsum Creek and the Dolores River. Located on the Navajo formation with sandstone soils on zero- to 5-degree slopes.

USGS Quads: Anderson Mesa Horse Range Mesa.

County: San Miguel (Colo.)

Legal description: Township 045N Range 019W Sections 24,25 NMPM; Township 045N Range 018W Sections 19,30 NMPM.

Elevation: 6700 feet

Size: 420.23 acres

Biodiversity significance rank: B2, very high biodiversity significance

Biodiversity significance comments: An A-ranked occurrence of a G2 natural community. plant community - Hesperostipa comata, Great Basin herbaceous vegetation, Western Slope grasslands G2G4 S2

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource; It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This potential conservation area meets both the relevance and importance criteria for a natural process or system value with more than local significance.

Horse Range Mesa Paleontological Area

USGS 7.5' Quad: Horse Range Mesa

County: San Miguel (CO)

Township/Range Section Meridian: 044N 019W NW¼ Section 14 and NE¼ Section 15 NMPM

Description: 6 Site lies in the Brushy Basin member of the Morrison Geologic Formation. This site is located on the Morrison formation with sandstone soils on 0-5 degree slopes.

Brigham Young University excavated articulated vertebrae of a Camasaurus dinosaur specimen from this site in 1989 that was curated at BYU.

Elevation: 6700 feet

Size: 160 acres

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria: BYU report on site was inconclusive as to site having more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This potential conservation area meets the relevance criteria but not the importance criteria as the paleontological resource is questionable as to being of more than local importance.

Lake Como PCA

Location: San Juan County, Alpine Loop, Uncompahgre River drainage, about seven air miles north-northeast of Silverton

Legal Description: T43N R7W Sections 3, 10

USGS 7.5 minute quadrangle: Handies Peak, Ironton.

Size: 232 acres

Elevation: 12,000 feet to 13,447 feet

General description: Lake Como is a beautiful, bright turquoise jewel of a lake, at the headwaters of the north-flowing Uncompahgre River. The PCA is in the northern portion of the Silverton caldera, composed of andesitic lavas and ashflows from the Tertiary volcanic period. Soils in the PCA are mapped as Whitecross-Rock outcrop complex, 15% to

[6]O'Neill, F. Michael. A preliminary survey of the Horse Range Mesa Fossil Area for the San Juan Resource Area. BLM 1989

45% slopes. This is a complex of shallow or very shallow, well-drained soils and rock outcrop on alpine valley floors, mountain slopes and ridges, formed in colluvium and slope alluvium derived from rhyolite, tuff and other volcanic rocks, and in some places from granite, quartzite and similar rocks (USDA 2003).

The lake is a popular stop for four-wheel-drive sightseers. Hurricane Peak, at 13,447 feet, marks the southwest boundary of the PCA, while California Pass marks the southeastern boundary.

Biodiversity rank: The Lake Como PCA supports an excellent (A-ranked) occurrence of San Juan whitlowgrass, a globally imperiled (G2) species. It also has fair (C-ranked) occurrences of three Draba species (D. graminea, D. crassa (globally vulnerable – G3) and D. streptobrachia (globally vulnerable – G3). There is a fair (C-ranked) occurrence of globally vulnerable (G3) harbour beardtongue, a San Juan endemic plant that is considered to be secure in Colorado (S3S4).

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change; The Lake Como PCA supports an excellent (A-ranked) occurrence of San Juan whitlowgrass, a globally imperiled (G2) species.

Findings: The Lake Como PCA meets both the relevance and importance criteria for an excellent (Aranked) occurrence of San Juan whitlowgrass, a globally imperiled (G2) species. The low proportion of public land (<42% of PCA) does not warrant further consideration as a potential ACEC.

Little Gypsum Valley PCA

This site is located in southwestern Montrose County, extending partially into extreme northwestern San Miguel County. The site circumscribes Little Gypsum Valley, the continuation of Big Gypsum Valley north of the Dolores River. The Little Gypsum Valley boundary was drawn to encompass the occurrences of Gypsum Valley cateye

(Cryptantha gypsophila), short-stem beardtongue (penstemon breviculus), and Naturita milkvetch (Astragalus naturitensis). It includes the entire area that is mapped as the Paradox member of the Hermosa formation. This site contains an extant occurrence of a globally critically imperiled (G1/S1) plant, Cryptantha gypsophila, a fair (C-ranked) occurrence of a globally imperiled (G2G3/S2S3) plant, Naturita milkvetch (Astragalus naturitensis), and a historical occurrence of the globally vulnerable (G3/S2) little penstemon (Penstemon breviculus).

Biodiversity significance Rank B2: Very high biodiversity significance. This site contains an extant occurrence of a globally critically imperiled (G1/S1) plant, Cryptantha gypsophila, a fair (C-ranked) occurrence of a globally imperiled (G2G3/S2S3) plant, Naturita milkvetch (Astragalus naturitensis), and a historical occurrence of the globally vulnerable (G3/S2) little penstemon (penstemon breviculus). Gypsum outcrops that support Cryptantha gypsophila need protection from surface disturbance.

Size: 2,510.72 acres

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

*Importance criteria:*It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This potential conservation area meets both the relevance and importance criteria for a natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). Features included in Big Gypsum Valley Area of Critical Environmental Concern.

McIntyre Canyon PCA

Location: McIntyre Canyon is located 3.5 air miles northwest of the old townsite of Slickrock, in northwestern San Miguel County.

USGS 7.5 minute quadrangles: Horse Range Mesa

Legal description: T44N R19W Sections 2-4, 7-15, 17, 18; T45N R19W Sections 33-36.

Elevation range: 5,400 to 6,200 feet.

Size: 3,104 acres

General description: McIntyre Canyon is a major tributary of the Dolores River, draining a large area of western San Miguel County and southeastern Utah. Except for a small amount of private land at the confluence, the canyon is on BLM land.

This PCA gains its high significance rank from the good occurrence of xeric western slope pinyon-juniper woodlands, with a significant component of needle-and-thread grass. In addition, there are good occurrences of a globally imperiled hanging garden community, containing the globally vulnerable Eastwood monkeyflower. An excellent example of globally common woodlands with Colorado pinyon and mountain mahogany occurs at the PCA. Natural Heritage element occurrences at the McIntyre Canyon PCA.

Figure U.3 - Ranking Matrix

Element	Common Name	G rank	S rank	Federal - State Status	EO *
Pinus edulis/Stipa comata	Xeric western slope pinyon-juniper	G2?	S2		B
Astragalus naturitensis	Naturita milkvetch	G3	S3	BLM, USFS	A
Aquilegia micrantha-Mimulus eastwoodiae	Hanging gardens	G2G3	S2S3		B
Astragalus naturitensis	Naturita milkvetch	G3	S3	BLM, USFS	B
Mimulus eastwoodiae	Eastwood monkey-flower	G3?	S1	BLM	B
Mimulus eastwoodiae	Eastwood monkey-flower	G3?	S1	BLM	E
Pinus edulis/Cercocarpus	Mesic Western Slope pinyon-juniper	G5	S4		A

*EO=Element Occurrence

Biodiversity Rank: B2 (very high biodiversity significance) McIntyre Canyon has a good occurrence of xeric western slope pinyon-juniper woodlands, considered to be rare on a global scale.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).

Importance criteria:It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change; Findings: This potential conservation area meets both the relevance and importance criteria for an A ranked sensitive species considered vulnerable on a global scale and an A-ranked, globally imperiled natural process or system value with more than local significance. Portion included in Dolores Canyon Special Management Area.

Mesa Verde Entrance PCA

Location: Montezuma County, about eight miles east of Cortez and seven miles west of Mancos. The site is located both north and south of Highway 160.

USGS 7.5 minute quadrangle: Point Lookout

Legal eescription: T36N, R14W, Sections 19, 20 28-33; T35N, R14W, Sections 4-7 and 9; T35N, R15W, Sections 1 and 12

Elevation: 6,800 to 8427 feet

Size: Approximately 1,268 acres public land (37% public land), 3455 acres in PCA

General description: This PCA, located near the entrance to Mesa Verde National Park, includes private, BLM, and National Park Service lands. It extends north of Highway 160 on BLM land and south into BLM land and the National Park. Vegetation is primarily pinyon-juniper (Pinus edulis-and Juniperus osteosperma) woodland, although much of the pinyon pine in the park has been decimated by fire and a recent pine beetle infestation.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Biodiversity rank: B2 (very high biodiversity significance) This PCA supports excellent (A-ranked) occurrences of globally imperiled (G2) and vulnerable (G3) plants.

The rank of very high significance (B2) is based on an excellent (A-ranked) occurrence of Gray's townsend daisy, a plant that is globally imperiled (G2). Other rare plants in the PCA include excellent and good ranked (B-ranked) occurrences of San Juan gilia and short-stem beardtongue, globally vulnerable (G3), a fair (C-ranked) occurrence of large-flowered globemallow (Iliamna grandiflora), believed vulnerable (G3?Q) and very rare (S1) in Colorado; and a fair occurrence of Abajo penstemon, now watchlisted (S3) in Colorado.

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.

Findings: While the Mesa Verde PCA meets both the relevance and importance criteria for a potential Area of Critical Environmental concern the low proportion of public land (<37% of PCA) does not warrant further consideration as a potential ACEC.

Mud Springs PCA/ Remnant Anasazi ACEC

Location: Mud Canyon PCA is located in Montezuma County, north and south of McElmo Creek, about one mile west of Cortez. To reach the southern part of the PCA from the McElmo Creek Road, turn south on Road 21 at the sign to "Stone Crusher". Turn west on dirt roads at 0.5 mi. or 0.75 miles. The northern part of the site can be accessed on foot from the McElmo Creek Road just east of Majors Cemetery.

USGS 7.5 minute quadrangle: Mud Creek

Legal description: T35N,R17W, Sections 1, 2, 11, 12, 13 and 14; T35N R16W Sections 4, 5, 6, 7, 8, and 18; T36N R17W Sections 35 and 36; T36N R16W Sections 28-33

Elevation: 5,800 to 6,000 feet

Size: Approximately 6,369 acres

General description: This PCA is located south of Mc Elmo Canyon. It contains a mosaic of pinyon-juniper (Pinus edulis - Juniperus osteosperma) woodland on the north-facing hillsides, and excellent examples of sagebrush/grass communities on south slopes and in low lying areas. A high diversity of plants occupies the red sandy soil of this PCA.

Biodiversity rank: B3: High biodiversity significance. The PCA supports an excellent (A-ranked) occurrence of a globally vulnerable (G3) plant.

Relevance criteria: A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans). Anasazi Culture Multiple Use ACEC was designated in the 1985 RMP to focus greater attention on management of significant mineral, cultural and other multiple use values contained in the area. The majority of the ACEC was proclaimed as the Canyons of the Ancients National Monument. The monument was designated on June 9, 2000, by presidential proclamation to protect cultural and natural resources on a landscape scale. A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).

*Importance criteria:*The Mud Springs PCA/ Remnant Anasazi ACEC does not have more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

The Mud Springs PCA/Remnant Anasazi ACEC does not have qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: The Mud Springs PCA/ Remnant Anasazi ACEC meets the relevance criteria but not the importance criteria for consideration but will be considered as a potential ACEC in the current management alternative due to Existing ACEC designation for cultural resources.

Muleshoe Bench PCA

Site is Located in San Miguel County southeast of the confluence of Coyote Wash and Dolores River. Bench is on large bend in the Dolores River Canyon. The site is located on the Navajo formation on a sandstone flat bench with zero- to 5-degree slopes.

USGS 7.5' quadrangle: Anderson Mesa

Legal description: Township 046N Range 019W Sections 14; 23-26 NMPM

Size: 690.95 acres

Biodiversity significance rank : B3: High Biodiversity Significance An A-ranked occurrence of a G2G4 natural community. The rank of high significance (B3) is based on a good occurrence of Hesperostipa comata Great Basin herbaceous Western Slope grasslands.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource; It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This potential conservation area meets both the relevance and importance criteria for an A-ranked sensitive species considered vulnerable on a global scale and an A-ranked, globally imperiled natural process or system value with more than local significance. Included in Dolores Canyon Special Management Area.

Northdale Gunnison sage grouse restoration area

The Dove Creek GUSG subpopulation is located primarily in western Dolores County, north and southwest of Dove Creek; a small portion of occupied habitat extends into San Miguel County. The estimated area occupied by the subpopulation is approximately 28,300 acres and elevation ranges from 6,600 – 8,100 feet. Habitat north of Dove Creek is characterized as mountain shrub habitat, dominated by oakbrush interspersed with sagebrush. The area west of Dove Creek is dominated by sagebrush, but the habitat is highly fragmented and has a sparse understory that is primarily crested wheatgrass.

Approximately 87% of occupied habitat at Dove Creek is privately owned, and 13% is managed by the BLM. USGS quadrangle: Northdale 7.5'

Legal description: T41 N R20W Sections 25, 26, 35, 36

Size: 875 acres of public land.

Relevance criteria: A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity). Potential restoration area for a globally impaired species (NatureServe ranking of G1/G2) Gunnison sage grouse. The sage grouse is considered to be critically imperiled throughout its range.

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

This area is an isolated parcel of public land that the CDOW has acquired conservation easements or title to adjoining lands to implement a habitat restoration program for the Dove Creek population of Gunnison sage grouse. A synergy of management practices is required if the Gunnison sage grouse is to be protected against disturbance that can compromise chick survival on brooding ranges and adult survival through winter. The Gunnison sage grouse is a species of special concern in Colorado and until recently was a candidate for listing under the federal Endangered Species Act. Housing and human development, livestock-grazing, water diversion projects and increased deer and elk populations have all contributed to the loss of habitat for the Gunnison sage grouse (Colorado Comprehensive Wildlife Conservation Strategy). Rangewide and Dove Creek conservation plans note the need for cooperative management to address habitat loss within

Dry Creek Basin (Gunnison Sage Grouse Rangewide Conservation Plan). The rangewide conservation plan notes that for the Dove Creek and Monticello, Utah, populations, primary issues include habitat loss to subdivision and issues surrounding CRP renewal, poor habitat quality and quantity, increased oil and gas development (in Utah), low existing genetic diversity, and lack of linkages between Monticello and Dove Creek as well as between sub-groups of birds within the Dove Creek area. (Monticello, Utah, and Dove Creek, Colo., populations). Almost all occupied habitats in both states are in private ownership.

Findings: While the Northdale Restoration Area meets both the relevance and importance criteria for a potential Area of Critical Environmental concern, the low proportion of public land (<13% of subpopulation area) does not warrant further consideration as a potential ACEC.

Picayune Gulch PCA

Picayune Gulch (spelled Picayne on USGS topographic maps) is a valley of gently rolling hills, with extensive wetlands dominated by water sedge. Although only common plants were found in the wetland, the small pools scattered throughout were home to some fascinating unidentified aquatic species. North-facing hillsides above the wetland are dominated by Caltha leptosepala in moist areas and Geum rossi and Sibbaldia procumbens in drier sites. Rock outcrops on the north-facing slope support two rare plants, Draba streptobrachia and D. crassa. The plants were found in shaded crevices and at the base of these outcrops.

Associated species included Geum rossii, Sibbaldia procumbens, Thalictrum fendleri, Smelowskia calycina, Rydbergia grandiflora and Cystopteris fragilis. The wetland was surveyed for rare plants, and none were found. The area was also surveyed for potential Uncompahgre fritillary habitat. The butterfly's host plant, Salix reticulata, was present in small patches, but was not extensive enough to support a colony.

USGS 7.5' Quadrangle: Handies Peak

Legal descritption: Township 042N Range 006W Sections 07, 18 NMPM

Size: 25 acres

Elevation: 12,000- 12,200 feet

Biodiversity significance rank: B3: High Biodiversity Significance. The Picayune Gulch site supports an excellent (A-ranked) occurrence of Colorado Divide whitlowgrass (Draba streptobrachia), which is globally vulnerable (G3/S3). It also has a poor (D-ranked) occurrence of thickleaf whitlowgrass (Draba crassa), another globally vulnerable species (G3/S3).

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria: Qualities are not more than locally significant in giving PCA its special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. Qualities or circumstances do not make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This potential conservation area meets the relevance criteria but not the importance criteria as the G3 plant community is not of more than local importance.

San Miguel Basin PCA (Dry Creek Basin)

Location: Dry Creek Basin is located at the town of Basin, in San Miguel County. The PCA can be accessed from Colorado State Highway 141 traveling south from its junction with Highway 145 east of Naturita. Highway 141 bisects the east side of the PCA at the town of Basin.

USGS 7.5 minute quadrangles: Basin, Gypsum Gap

Legal description: T43 R16 Section 3; T44N R15W Sections 7, 15-22, 27-34; T44N R16W Sections 3-11, 13-18, 20-28, 34-36; T44N R17W Sections 1-3, 11, 12; T45N R16W Sections 19, 30-33; T45N R17W Sections 21-28, 33-36

Elevation range: 5,317 to 6,720 feet

Size: 14,315 acres of Public Land; 32,184 total acres in PCA The PCA falls completely within the basin at Dry Creek. Approximately 45% of the lands within the PCA are under the management of the BLM with the remaining split evenly between private ranchland and Dry Creek Basin State Wildlife Area (SWA).

Relevance criteria: A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity). PCA identified by CNHP for Biodiversity Rank B2 (Very high biodiversity significance) Dry Creek Basin is the site of a good occurrence of the Gunnison sage grouse. The sage grouse is considered to be critically imperiled throughout its range.

*Importance criteria:*It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change. This area is under the management of a combination of agencies (BLM, SWA, private), and a synergy of management practices is required if the Gunnison sage grouse is to be protected against disturbance that can compromise chick survival on brooding ranges and adult survival through winter. The Gunnison sage grouse is a species of special concern in Colorado and until recently was a candidate for listing under the federal Endangered Species Act. Housing and human development, livestock-grazing, water diversion projects and increased deer and elk populations have all contributed to the loss of habitat for the Gunnison sage grouse (Colorado Comprehensive Wildlife Conservation Strategy). Rangewide and San Miguel conservation plans note the need for cooperative management to address habitat loss within Dry Creek Basin (Gunnison Sage Grouse Rangewide Conservation Plan).

The BLM National Sage Grouse Conservation Strategy identified addressing the threats throughout the range of the sage grouse as being critical to achieving the mandate of FLPMA and threat reduction, mitigation, and elimination to sage grouse and sagebrush habitats. The strategy requirements in land use planning are:

- Ensure that sage-grouse habitat needs are addressed in BLM land use plans Land Use Plan Based: BLM land use plans and associated implementation plans are the principal mechanisms for making decisions and conducting on the ground actions to conserve and restore sage-grouse habitats for lands administered by the BLM.
- Land use plans will be updated and amended when and where appropriate, to adequately address sage-grouse and sagebrush conservation needs through full public participation.
- Incorporate sage-grouse/sagebrush conservation measures into all applicable land use plans.
- Integral to the national sage grouse strategy are various guidance documents that will help BLM ensure that it successfully incorporates sage-grouse conservation measures into all of its ongoing programs and activities, including land use planning, grazing and mineral-leasing, and other programs.

Findings: While the Dry Creek Basin PCA meets both the relevance and importance criteria for a potential Area of Critical Environmental concern, the low proportion

of public land (<45% of PCA) does not warrant further consideration as a potential ACEC.

Silveys Pocket PCA

Location: Silvey's Pocket is located 8.5 air miles southwest of Bedrock, in extreme southwestern Montrose County.

USGS 7.5 minute quadrangles: Anderson Mesa

Legal description: T45N R19W Sections 4, 5; T46N R19W Sections 28, 29, 32, 33.

Elevation range: 5,300 to 5,800 feet.

Size: 707 acres

General description: The Silvey's Pocket PCA includes mesa tops and a broad bench south of Coyote Wash. A rough four-wheel-drive road leads to the site from Little Gypsum Valley. The area has numerous old uranium mines and is entirely within BLM-owned lands. Most of the PCA is in the Morrison and Dakota geologic formations. Vegetation is a mosaic of pinyon-juniper woodland, sagebrush and greasewood flats.

Biodiversity rank: B3 (High Biodiversity Significance) Silvey's Pocket contains a good occurrence of Naturita milkvetch, considered to be vulnerable on a global scale and an excellent occurrence of needle and thread Great Basin herbaceous vegetation. There is also an unranked occurrence of Paradox breadroot, a globally vulnerable plant.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.

Findings: This potential conservation area meets both the relevance and importance criteria for an A-ranked, globally imperiled natural process or system value with more than local significance.

Slickrock PCA

Location: The Slickrock PCA is located in San Miguel County approximately 18 miles north of the town of Dove Creek. To access this PCA, drive north of Dove Creek on U.S. 666 to Hwy 141 and continue north past Egnar, or go south on Highway 141 from Naturita.

USGS 7.5 minute quadrangle: Horse Range Mesa

Legal description: T43N, R18W, Section 6; T43N, R19W, Sections 1 and 2; T44N, R18W, Sections 30 and 31; T44N, R19W, Sections 25, 26, 35, and 36

Elevation: 6,000 feet

Size: Approximately 2901 acres

General description: Pinyon-juniper woodlands and shrublands cover the hillsides of this PCA above the Dolores River. The dominant plant community is pinyon pine-Utah juniper/mountain mahogany (Pinus edulis-Juniperus osteosperma/Cercocarpus montanus). The site includes part of Slickrock Hill, Poverty Flats and several slickrock (Entrada sandstone) canyons that are tributary to the Dolores River.

Biodiversity Rank: B2. Very high biodiversity significance. This PCA supports an excellent (A-ranked) occurrence of a globally imperiled plant (G2G3).

The biodiversity site rank for the Slickrock PCA is based on an A-ranked occurrence of Naturita milkvetch, a globally imperiled plant (G2G3). Eight sub-populations were found for this occurrence with an estimated total of 1,500 individuals. There is also a fair (C) occurrence of adobe penstemon, a globally vulnerable (G3) species.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.

Findings: While the Slickrock PCA meets both the relevance and importance criteria for a potential Area of Critical Environmental Concern, the low proportion of public land (<47% of PCA) does not warrant further consideration as a potential ACEC.

Slickrock Hill PCA

Location: Slickrock Hill is located due south of the old townsite of Slickrock, along Colorado Highway 141 in western San Miguel County.

USGS 7.5 minute quadrangles: Egnar, Horse Range Mesa

Legal description: T43N R19W Sections 1, 2, 10, 11, 14, 15; T43N R18W Section 6; T44N R18W Section 31; T44N R19W Sections 35, 36.

Elevation range: 5,600 to 7,200 feet

Size: 2,413 acres

General description: This PCA includes within its boundary the canyons west of the Dolores River near Slickrock, Colo. The geologic features of this site include Jurassic Morrison (stream sands, shale, gravel, and ash), Jurassic Summerville (marine sequence); and Jurassic Entrada (dune sand, weak calcareous cement).

The Slickrock Hill PCA has a good occurrence of Western Slope grasslands, a plant community that is imperiled both globally and in Colorado. In addition, this PCA has a good population of the Naturita milkvetch, vulnerable globally and in Colorado. There is a fair occurrence of the little penstemon, and a good occurrence of the Abajo penstemon, both rare in Colorado. The mesic Western Slope pinyon-juniper woodlands occupy a large area,

and provide a good example of a common plant community. Pinyon may have increased in recent years as a result of fire suppression.

The primary factors justifying a conservation concern for canyon treefrogs are the small number of occurrences, restricted range and relatively low numbers (qualitative judgment) of individuals.

Biodiversity rank: B3: Very high biodiversity significance. The Slickrock Hill PCA has a good occurrence of Great Basin herbaceous vegetation, a plant community that is vulnerable on a global scale.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.

Findings: This potential conservation area meets both the relevance and importance criteria for an A-ranked sensitive species considered vulnerable on a global scale and an A-ranked, globally imperiled natural process or system value with more than local significance.

Snaggletooth portion of Dolores River Canyon

Location: Six miles east of Dove Creek and about 25 miles north of Cortez in Dolores and San Miguel Counties. Named for a rapid on the Dolores River. Covers a 30-mile stretch of the Dolores River Canyon from Bradfield Bridge downstream to approximately river mile 125.

USGS maps: Joe Davis Hill, Secret Canyon, The Glade, Doe Canyon.

Elevation: 5600- 6500 feet ASL

Size: 19, 427

Geologic formations in the canyon include Permian Cutler Formation, Triassic Wingate, Kayenta and Navajo sandstones, Jurassic Entrada, Morrison, and Summerville sandstones and shales, and Cretaceous Burro Canyon and Dakota sandstones. A large part of the site is roadless and remote. The majority is on BLM land managed by the San Juan Resource Area in Durango. The impoundment of the river at McPhee Reservoir has had a profound effect on riparian vegetation of the Dolores River. Water levels are strictly controlled, and absence of normal spring flooding has reduced the reproduction of native cottonwoods and willows, while encouraging the spread of the exotic tamarisk. However, good examples of coyote willow riparian shrublands remain. Inaccessible benches above the river contain good examples of pinyon-juniper and grassland communities.

The boundary is drawn to encompass both the riparian zone in the canyon bottom, and the steep cliffs of the canyonsides that provide nesting habitat for the peregrine falcon. It does not provide for all of the needs of the falcon. It is tentatively drawn to end at the San Miguel-Dolores County line, but should probably be extended, once surveys have been completed in Dolores County. Although the upstream part of the river is not

included within the boundary, activities upstream, including the regulation of flows in the Dolores River at McPhee Reservoir, have a profound effect on the health of the riparian plant community.

This site is home to peregrine falcons (Falco peregrinus anatum), a globally vulnerable (G4T3/S2B) subspecies. The U.S. Fish and Wildlife Service, due to recent increases in numbers, has proposed removal of the American peregrine falcon from the endangered

species list. An excellent to good (AB-ranked) occurrence of the globally common (G5/S5) Salix exigua / mesic graminoid community is also within the site.

The Colorado Wilderness Network has proposed the portions of the area for wilderness designation with support from U. S. Representative Diana DeGette.

Relevance criteria: A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans). (Ponderosa gorge scenery).

A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity). (Gila robusta - roundtail chub, Catostomas latipinnis - flannelmouth sucker, Catostomus discobolus - bluehead sucker, habitat).

A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features). (box elder – narrowleaf cottonwood / red-osier dogwood (Acer negundo - Populus angustifolia/Cornus sericea), stream orchid (Epipactis gigantea).

Importance criteria: It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.

Findings: Area meets both the relevance and importance criteria for an A-ranked sensitive species considered vulnerable on a global scale and an A-ranked, globally imperiled natural process or system value with more than local significance.

A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans). (Ponderosa gorge scenery).

Included in Dolores Canyon Special Management Area.

Spring Creek Basin PCA

Location: The Spring Creek Basin PCA is located in San Miguel County approximately 20 miles northeast of Dove Creek. To access this PCA drive Highway 145 to Spring Creek Basin Road K20 from Disappointment Valley Road 19Q. Continue on BLM roads to Spring Creek Basin.

USGS 7.5 minute quadrangle: Dawson Draw and Mc Kenna Peak

Legal description: T42N, R15W, Sections 6 and 7; T42N, R16W, Sections 1-4, and 10-14

Elevation: 6,300 feet

Size: Approximately 5659 acres

General description: Spring Creek Basin is a large, fairly level area at the eastern end of Disappointment Valley near the foot of McKenna Peak. It is within the 20,000-acre Spring Creek Wild Horse Management area, home to one of the few wild horse herds in Colorado, and managed by BLM for the horses' benefit. Much of the site is sparsely vegetated Mancos shale.

Biodiversity rank: B2. Very high biodiversity significance. This PCA supports a good (B-ranked) occurrence of a critically imperiled (G1) plant.

The biodiversity site rank for the Spring Creek PCA is based on an excellent (A-ranked) occurrence of Gypsum Valley cateye (Cryptantha gypsophila), a critically imperiled plant in Colorado (S1) and globally (G1). The good (B-ranked) occurrence of pygmy sagebrush (Artemisia pygmaea), a critically imperiled plant in Colorado (S1), supports this PCA with

an estimated population over 1000 plants. Pygmy sagebrush has only one other occurrence in Colorado.

Relevance criteria: A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).

Importance criteria:It has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;

It has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;

Findings: This potential conservation area meets both the relevance and importance criteria for a fish and wildlife value with more than local significance.

ACEC evaluation summary

A total of 22 areas were evaluated as part of the San Juan Resource Management Plan revision process. These included an area previously designated ACEC in the San Juan/San Miguel RMP, nominations received from the public as part of scoping, CNHP potential conservation areas, and areas nominated or expanded by BLM staff specialists.

Eleven of the 22 areas meet both the relevance and importance criteria. Two areas will be considered for new or continued designation in the Plan revision. A portion of the Big Gypsum Valley may be proposed for designation as an ACEC if subsequent analysis determines special management is required to protect the highlighted values. The Mud Springs/Remnant Anasazi ACEC is being considered based on the current designation of a portion of the area.