

## INTRODUCTION

Areas of Critical Environmental Concern (ACECs) are defined in the Federal Land Policy and Management Act (FLPMA) (43 USC 1702(a), and 43 CFR 1601.0-5(a)) as:

“areas within the public lands where special management attention 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.”

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. ACECs may be nominated by BLM staff, other agencies, or members of the public at any time.

The intent of Congress in mandating the designation of ACECs was to give priority to the designation and protection of areas containing unique and significant resource values.

### Requirements for Designation

In order for an area to be designated as an ACEC, it must meet the relevance and importance criteria listed in BLM Manual 1613 Manual (listed below), and must require special management.

### Relevance Criteria

In relation to relevance criteria, land managers must answer the question of whether or not the area contains one, or more, of the following values:

- a significant historic, cultural, or scenic value;
- a fish or wildlife resource;
- a natural process or system; and/or
- a natural hazard.

### Importance Criteria

If land managers can answer “yes” to any of the relevance criteria, then they must address the question of whether or not that value, resource, system, and/or hazard has a substantial significance or value. In addition, land managers must also ask whether or not it meets one, or more, of the following importance criteria:

- Does it have more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially when compared to any similar resource?
- Does it have qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change?

- Has it been recognized as needing protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA?
- Does it have qualities that warrant highlighting it in order to satisfy public or management concerns about safety and public welfare?
- Does it pose a significant threat to human life and safety or property?

Designation of ACECs require that an operating plan (specifically a 3809 Plan of Operation) be filed for all mineral-related activities greater than casual use. Performance standards are also required in order to protect the relevant and important values of the ACEC. Mineral exploration would require site-specific NEPA analysis.

## LEGAL AND ADMINISTRATIVE FRAMEWORK

### LAWS

- ***The Federal Land Policy and Management Act of October 21, 1976***: This act declares that "...the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." It also states that "Terms and conditions must minimize damage to scenic and aesthetic values and fish and wildlife habitat and otherwise protect the environment."

### REGULATIONS AND POLICIES

- ***BLM Manual 1613***: This identifies the process of identifying and evaluating potential ACECs. The process included three primary steps: 1) compiling a list of areas recommended for ACEC designation, 2) obtaining information on relevance and importance, and 3) evaluating each resource or hazard to determine if it meets both the relevance and importance criteria.

### DESIGN CRITERIA

Management guidelines and design criteria describe the environmental protection measures that would be applied to all of the alternatives at the project level in order to protect, enhance, and, where appropriate, improve resources related to ACECs. Guidelines and design criteria are presented in Part 3 of Volume 2 of the DLMP/DEIS.

## AFFECTED ENVIRONMENT

### Proposed ACECs and PCAs

In the early stages of the planning process for this DLMP/DEIS, The Nature Conservancy (TNC) and Colorado Natural Heritage Program (CNHP) staff reviewed information from BLM inventories, CNHP records, TNC Ecoregional Assessments, and CDOW lists regarding species of concern in order to ensure that all potentially relevant and important values within the planning area were considered.<sup>12</sup> The analysis area for the identified values encompassed all Federal lands (which includes both Federal surface and mineral estate).

The BLM does not manage, and is not proposing to include, private surface or private mineral estate values as part of the ACEC. However, the BLM does manage Federal mineral estate, which is overlain by private surface. When making land use allocations and decisions relating to Federal minerals as part of the planning process, the BLM would consider resource values on these “split-estate” lands. Under various DLMP/DEIS alternatives, special management prescriptions may be applied to the development of Federal mineral estate in order to protect these values outside of ACEC designation.

Since the mid-1990s, the SJPLC, in partnership with the CNHP, has developed biological assessments for San Miguel County (2000)<sup>13</sup>, San Juan County (2003)<sup>14</sup>, La Plata County (2004)<sup>15,16</sup>, Dolores County (2005)<sup>17</sup>, and Montezuma County (2005) in order to identify significant ecological resources. The CNHP identified Potential Conservation Areas (PCAs) for targeted species, which were then evaluated by TNC. A total of 35 potential conservation areas (with biodiversity ranks of B1, outstanding; B2, Very High; and B3, High) were evaluated by The Nature Conservancy.

The BLM San Juan/San Miguel Resource Management Plan (1985) designated the Anasazi ACEC. This area was designated as an ACEC based on the relevancy and importance of the cultural resources occurring within the area, as well as on management concerns related to the development of oil and gas resources. The Anasazi ACEC covered approximately 160,000 acres of public land. In 2000, President Clinton issued a proclamation designating most of this ACEC as Canyons of the Ancients National Monument (the Monument). The Monument is currently in the process of developing a Resource Management Plan (RMP). Approximately 1,120 acres of the ACEC were not included in the boundaries of the Monument. Currently, this area is being managed as an ACEC. This remnant is identified in this planning process as the Mud Springs/remnant Anasazi ACEC, and is being evaluated for continuation of the ACEC designation.

The Dolores Field Office staff have identified a potential ACEC, based on the relevancy and importance of Gunnison sage-grouse and its habitat, northwest of Dove Creek, Colorado. This proposed ACEC would contain approximately 875 acres of BLM-administered lands, and approximately 3,500 acres of private lands. Conservation easements (21% BLM) would be held by the Colorado Division of Wildlife (CDOW).

The San Juan Citizens Alliance has identified the Snaggletooth section of the Dolores River Canyon as having high scenic, recreation, and wildlife qualities. This area is now identified for potential ACEC designation.

<sup>12</sup> San Juan Planning for Biodiversity Model Project

<sup>13</sup> Unpublished report Peggy Lyon and John Stovell A Natural Heritage Assessment San Miguel and Western Montrose Counties, Colorado, March 2000. CNHP

<sup>14</sup> San\_Juan\_County\_Biological\_Assessment

<sup>15</sup> La\_Plata\_County\_Wetlands

<sup>16</sup> LaPlata\_County\_Biological\_Assessment

<sup>17</sup> Survey\_of\_Critical\_Wetlands\_in\_Dolores\_County

### **Management Challenges**

Exotic species, mineral development, livestock grazing, recreation, and general habitat loss may influence the viability of the species and ecological systems identified as significant features within the planning area. Several of the potential identified ACECs are in locations that are identified for special management (including the Dolores River Special Management Area, and the Silverton Special Management Area/Alpine Loop SRMA). This is primarily due to the existence of other resources within these areas. (High-priority mineral development may impact the Grassy Hills, Big Gypsum/Little Gypsum, Silveys Pocket, and Spring Creek locations that are outside of the Dolores River Special Management Area.)

### **Relevance and Importance Criteria Analysis**

Potential ACECs that meet the relevance and importance criteria are presented in the alternatives for this special designation. Where resource values can be recognized through other special management designations, the special management area plans would identify the specifics as to the management of those relevant and important resources. Twelve areas have been identified as having relevant and important values, and are under consideration for ACEC designation. Of these 12 areas, 4 are within the proposed Dolores River Special Management Area (Dolores River Canyon - Slick Rock to Bed Rock and the Snaggletooth portion; McIntyre Canyon, and Slick Rock Hil). Two are within the Dolores River Wilderness Study Area (MA 1, Muleshoe Bench and Coyote Wash). The Spring Creek PCA is within the MA 2 guidance for the Spring Creek Wild Horse Management Area. Relevant and important values identified for these locations would be adequately managed under MA 1 and MA 2 guidance (which would limit development); therefore, they would not be proposed for special designation. One (Little Gypsum PCA) is included in the Big Gypsum Potential ACEC under Alternatives B and C. The remaining 3 areas (Mud Canyon/Remnant Anasazi ACEC, Grassy Hills, and Silveys Pocket) are included for potential ACEC under at least one of the alternatives. (See Appendix U, Volume III, which includes a detailed evaluation of all locations considered.)

Table 3.29.1 lists the locations, and relevant and important values, and identifies sites that meet both the relevance and importance criteria necessary to be carried forward in the planning process for designation.

**Table 3.29.1 – Potential Areas of Critical Environmental Concern**

Nominator* Source	Values of Concern-Comments-Relevance	Biodiversity Significance and Importance	Acres of Public Land	Relevance and Importance Evaluation
CNHP/TNC	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 ( <i>Lecanora gypsicola</i> ) and Nodule cracked lichen ( <i>Acarospora nodulosa</i> var. <i>nodulosa</i> ), both critically imperiled (G1S1) State-wide and globally; Changing earthscale ( <i>Gypsoplaca macrophylla</i> ), a globally vulnerable plant (G3, G4); Weak-stemmed mariposa lily ( <i>Calochortus flexuosus</i> ), an apparently secure plant globally(G4), but imperiled (S2) in Colorado; and Nealley's needlegress, a demonstrably secure (G5) plant globally and a critically imperiled (S1) plant in Colorado.	B1- Outstanding	17,165	Relevant and important resources are present; portions included in Big Gypsum Valley Potential ACEC.
CNHP/TNC	Plant Community – ( <i>Picea engelmannii</i> )/ <i>Betula glandulosa</i> / <i>Carex aquatilis</i> – <i>Sphagnum angustifolium</i> (Iron Fen).	B2 – Very high	455	No - Low percentage of public land.
CNHP/TNC	Plant – <i>Draba crassa</i> (Thick-leaf Whitlow-grass) Plant – <i>Eriophorum altaicum</i> var. <i>neogaeum</i> (Altai Cottongrass) Plant Community – <i>Carex vernacular</i> (Alpine Wetland).	B3 – High	562	No - importance of resources of local significance.
CNHP/TNC	Colorado's largest population of the Kachina daisy is located here. Identified as a Colorado Natural Area. Recommended as an RNA.	B2 – Very high	329	Relevant and important resources are present; included as part of Dolores River Canyon Special Management Area and Dolores Wilderness Study Area.
CNHP/TNC	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 <i>Naturita</i> milkvetch, globally imperiled to vulnerable (G2, G3).	B1- Outstanding	2719	No - low percentage of public land.
CNHP/TNC	Plant Community – <i>Forestiera Pubescens</i> Shrubland (Foothills Riparian Shrubland). Plant Community – <i>Salix Exigua</i> /Mesic Graminoid (Coyote Willow/Mesic Graminoid).	B2 – Very high	15,384	Relevant and important resources are present; included as part of Dolores River Canyon Special Management Area and portion north of Big Gypsum valley is in Dolores WSA.
CNHP/TNC	Plant Community – <i>Stipa comata</i> – West (Western Slope Grasslands).	B2 – Very high	420	Relevant and important resources are present; need for special management not in evidence.
BYU Study	<i>Camarasaurus</i> , Carnosaur, Sauropod, <i>Stegosaurus</i> dinosaur fossils.	High	200	Inconclusive report on significance in project file.
CNHP/TNC	Plant – <i>Draba graminea</i> (San Juan Whitlow-grass) Plant – <i>Draba crassa</i> (Thick-leaf Whitlow-grass) Plant – <i>Draba streptobrachia</i> (Colorado Divide Whitlow-grass)	B2 – Very high	100	No - Low percentage of public land.
CNHP/TNC	Plant – <i>Astragalus naturitensis</i> ( <i>Naturita</i> Milkvetch) Plant – <i>Ochloides yuma</i> (Yuma Skipper) Plant – <i>Penstemon breviculus</i> (Little Penstemon) Bird – <i>Vireo vicinior</i> (Gray Vireo)	B2 – Very high	1,766	Relevant and important resources are present; portion is included in Big Gypsum Valley Potential ACEC.

**Table 3.29.1 – Potential Areas of Critical Environmental Concern, continued**

Nominator* Source	Values of Concern-Comments-Relevance	Biodiversity Significance and Importance	Acres of Public Land	Relevance and Importance Evaluation
CNHP/TNC	Plant – <i>Townsendia glabella</i> (Gray's Townsend-daisy) Plant – <i>Penstemon breviculus</i> (Little Penstemon) Plant – <i>Gila haydenii</i> (San Juan Gilia)	B2 – Very high	1,268	No - Low percentage of public land.
CNHP/TNC	Plant – <i>Astragalus naturitensis</i> (Naturita Milkvetch) Plant Community – <i>Pinus edulis/Cercocarpus montanus</i> (Mesic Western Slope Pinyon-Juniper Woodlands) Plant Community – <i>Aquilegia micrantha – Mimulus eastwoodiae</i> (Hanging Gardens) Plant community – <i>Pinus edulis/Stipa comata</i> (Xeric Western Slope Pinyon-Juniper Woodlands) Plant – <i>Mimulus eastwoodiae</i> (Eastern Monkey-flower)	B2 – Very high	2,980	Relevant and important resources are present; included as part of Dolores River Canyon Special Management Area.
CNHP/TNC, BLM	Existing ACEC- ancestral puebloan cultural resources Plant – <i>Astragalus deterior</i> (Cliff-palace Milkvetch) Plant – <i>Astragalus naturitensis</i> (Naturita Milkvetch) Plant – <i>Penstemon breviculus</i> (Little Penstemon)	B3- High	6,369	Considered in alternatives as existing ACEC, due to existing designation in 1985 RMP.
CNHP/TNC	Plant Community – <i>Stipa comata</i> – West (Western Slope Grasslands)	B2 – Very high	663	Relevant and important resources are present; included as part of Dolores River Canyon Special Management Area.
BLM	Gunnison Sage Grouse Restoration area in cooperation with CDOW. Less than 20 percent BLM Surface Management.	N/A	960	No - Low percentage of public land.
CNHP/TNC	Plant – <i>Draba crassa</i> (Thick-leaf Whitlow-grass) Plant – <i>Draba crassa</i> (Thick-leaf Whitlow-grass)	B3 – High	23	No - importance of resources is of local significance.
CNHP/TNC	Animal – <i>Centrocercus minimus</i> (Gunnison Sage Grouse)	B2 – Very high	34,941	No - Low percentage of public land.
CNHP/TNC	Plant – <i>Astragalus naturitensis</i> (Naturita Milkvetch) Plant – <i>Pediomelum aromaticum</i> (Paradox Breadroot) Plant Community – <i>Stipa comata</i> – West (Western Slope Grasslands)	B3 – High	707	Relevant and important values identified are of more than local significance.
CNHP/TNC	Plant – <i>Astragalus naturitensis</i> (Naturita Milkvetch) Lizard – <i>Aspidoscelis velox</i> (Plateau Striped Whiptail)	B2 – Very high	976	No – Low percentage of public land.
CNHP/TNC	Plant – <i>Astragalus naturitensis</i> (Naturita Milkvetch) Plant Community – <i>Stipa comata</i> – West (Western Slope Grasslands) Animal – <i>Hyla arenicolor</i> (Canyon Treefrog) Plant – <i>Penstemon breviculus</i> (Little Penstemon) Plant Community- <i>Pinus edulis/Cercocarpus montanus</i> (Mesic Western Slope Pinyon-Juniper Woodlands)	B2 – Very high	2,381	Relevant and important resources are present; need for special management not in evidence.
San Juan Citizen's Alliance	Scenery, Roundtail chub, Flannelmouth sucker, bluenose sucker, speckled dace	High	19,427	Relevant and important resources are present; included as part of Dolores River Canyon Special Management Area.
CNHP/TNC	Gypsum Valley cat-eye ( <i>Cryptantha gypsophila</i> ), a critically imperiled plant in Colorado (S1) and globally (G1) Pygmy sagebrush ( <i>Artemisia pygmaea</i> ), a critically imperiled plant in Colorado (S1)	B2 – Very high	5,659	Relevant and important resources are present- Within Spring Creek Wild Horse Herd Management Area.
<b>TOTAL Acres Considered</b>				<b>115,454</b>
<b>TOTAL Acres Meeting Relevance and Importance Criteria of a Potential ACEC</b>				<b>72,543</b>

### **Big Gypsum ACEC**

Alternatives B and C would propose the creation of the Big Gypsum ACEC. The Big Gypsum ACEC is located north of Disappointment Valley and east of the Dolores River. It would extend 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).

Among other important characteristics, Big Gypsum holds values that are relevant for ACECs. These include outstanding (B1) biodiversity significance rank (based on two excellent (A-ranked) and two good (B-ranked) occurrences of Gypsum Valley cat-eye, which is a plant that is critically imperiled (S1, G1) State-wide and globally). Other rare plants in the ACEC include *Lecanora gypsicola*, nodule cracked lichen (which are both critically imperiled (S1, G1) State-wide and globally); Timdal (a globally vulnerable plant (G3, G4)); 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). The proposed designation would include the Little Gypsum Valley PCA, which was identified by the CNHP as having relevance and important values. Alternative C would propose the designation of approximately 17,112 acres (the area identified by the CNHP). Alternative B would propose the designation of approximately 6,062 acres (as identified by agency staff).

### **Mud Springs/Remnant Anasazi ACEC**

Alternatives A and C would propose the creation of the Mud Springs/Remnant Anasazi ACEC. Approximately 1,160 acres of the Anasazi ACEC were not included in the boundaries of the Canyons of the Ancients National Monument, and are currently managed as an ACEC. The CNHP has also identified this area as a PCA, based on sensitive plants. Sensitive plant species identified are: Cliff-palace milkvetch (*Astragalus deterior*); Naturita milkvetch (*Astragalus naturitensis*), and Little penstemon (*Penstemon breviculus*). This area is located in Montezuma County, north and south of McElmo Creek (approximately 1 mile west of Cortez).

### **Grassy Hills PCA**

Alternative C would propose the creation of the Grassy Hills PCA. Grassy Hills PCA was identified by the CNHP, and would consist of approximately 420 acres located on a bench southwest of the confluence of Gypsum Creek and the Dolores River in San Miguel County. The site is on the Navajo geologic formation with sandstone soils on 0 to 5 degree slopes. Relevant and important values considered in relation to this potential designation include an "A" ranked occurrence of a G2 natural community. The plant community identified is Great Basin Herbaceous Vegetation/Western Slope Grasslands (*Hesperostipa comata*).

### **Silveys Pocket PCA**

Alternative C would propose the creation of the Silveys Pocket PCA. Silveys Pocket PCA was identified by the CNHP, and would consist of approximately 707 acres located on mesa tops and a broad bench south of Coyote Wash in San Miguel County. The area has numerous old uranium mines and is entirely within BLM-administered lands. Most of the PCA is in the Morrison and Dakota geologic formations. A rough four-wheel drive road leads to the site from Little Gypsum Valley. Relevant and important values considered in relation to this proposed designation include plants: Naturita milkvetch (*Astragalus naturitensis*) and Paradox breadroot (*Pediomelum aromaticum*), and plant communities: Western Slope grasslands (*Stipa comata*).

## ENVIRONMENTAL CONSEQUENCES

### DIRECT AND INDIRECT IMPACTS

Alternatives B and C would propose to designate the Big Gypsum ACEC in order to protect critical plant species and soil crust communities (which would require locating potential disturbances in order to avoid soil communities, and restricting motorized travel). Alternative C would propose to increase the area for designation of this ACEC. Under Alternatives B and D, ACEC designation would be removed from the Mud Springs/Remnant Anasazi ACEC. Alternatives A and C would continue the designation of the Mud Springs/Remnant Anasazi ACEC. Alternative C would designate the Grassy Hills and Silveys Pocket PCAs as ACECs, based on unique plant communities.

Impacts to the relevant and important values identified in the potential ACECs would mainly result from projects or actions proposed within their boundaries. Management strategies would be applied in order to protect relevant and important values when projects or activities are proposed (which may, in turn, result in additional restrictions or design requirements for certain uses or activities, and, in some cases, denial or abandonment of projects). This case-by-case management would be applied to a maximum estimated acreage of 18,285 surface acres in the planning area, which may impact approximately 2.6% of the BLM jurisdiction within the planning area under Alternative C; approximately 1% percent of the BLM jurisdiction under Alternative B; less than 1% under Alternative A; and no acres under Alternative D.

Relevant and important values may be impacted by oil and gas development, locatable and saleable mineral development, unmanaged recreation use, unmanaged livestock grazing, and by invasive species. Designation of ACECs would focus a need for special management on resolution of the impacts related to these activities (in relation to the values identified). Impacts to these resource values may be greatest under Alternatives A and D. Alternative C would provide for the greatest focus on management of these values. Alternative B would provide for the focus on identified values with the most potential to be impacted.

#### **Impacts Related to Oil and Gas Development and other Mineral Development**

Under Alternatives B and C, the Big Gypsum ACEC would be designated in order to address critical plant species and soil crust communities requiring location of potential disturbances to avoid soil communities. With or without the designation, oil and gas development may proceed, with CSU or NSO stipulations. Designation would require a plan of development for all locatable mineral activity regardless of size, thereby providing an additional level of protection to the relevant and important resources identified. Portions of the Mud Springs/Remnant Anasazi ACEC have private mineral resources, with an active gravel-mining operation. The private minerals may be developed under all of the alternatives.

Figure 3.29.1 - ACECs Alternative A

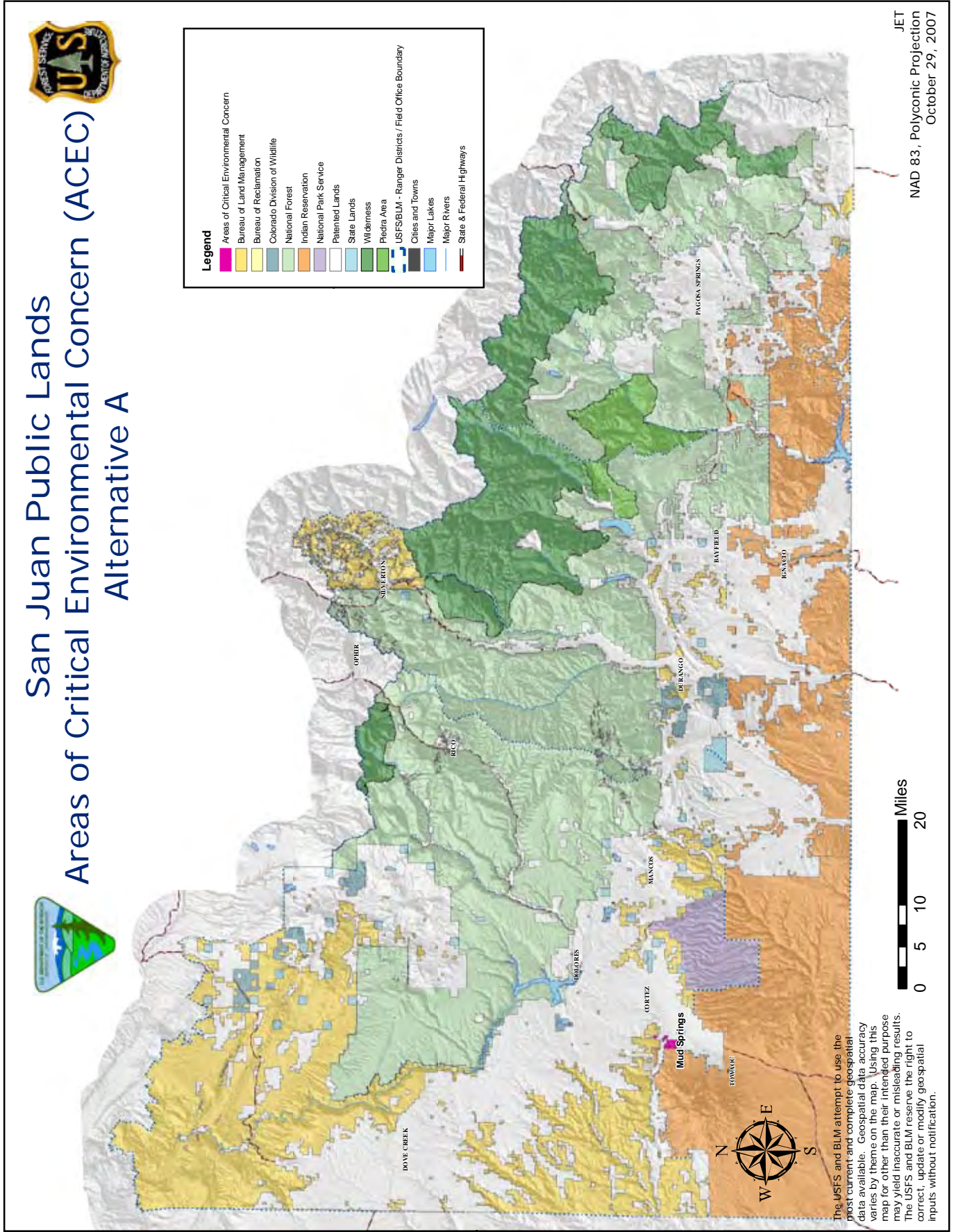
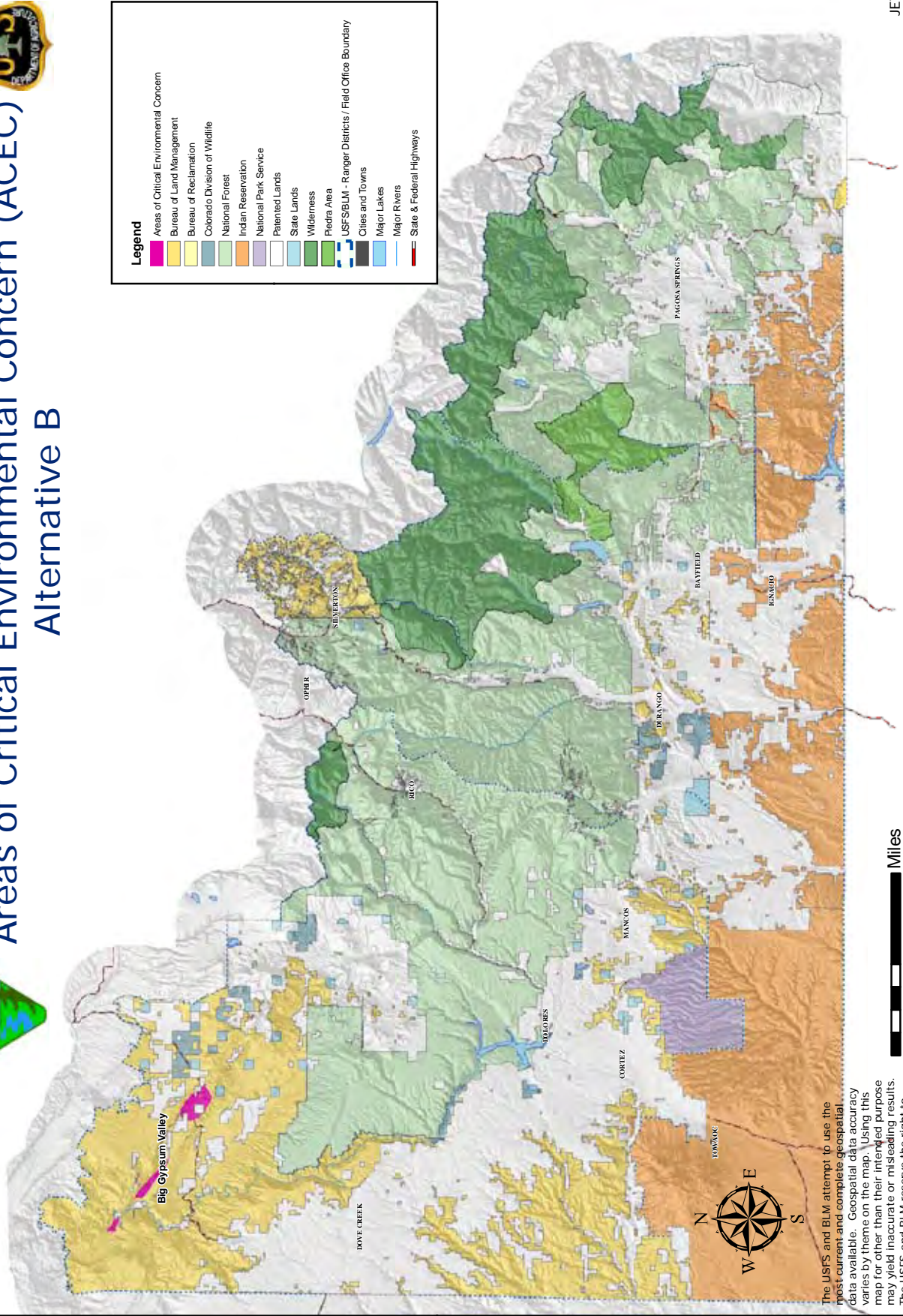
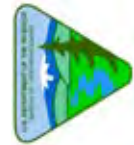


Figure 3.29.2 - ACECs Alternative B

# San Juan Public Lands Areas of Critical Environmental Concern (ACEC) Alternative B



**Legend**

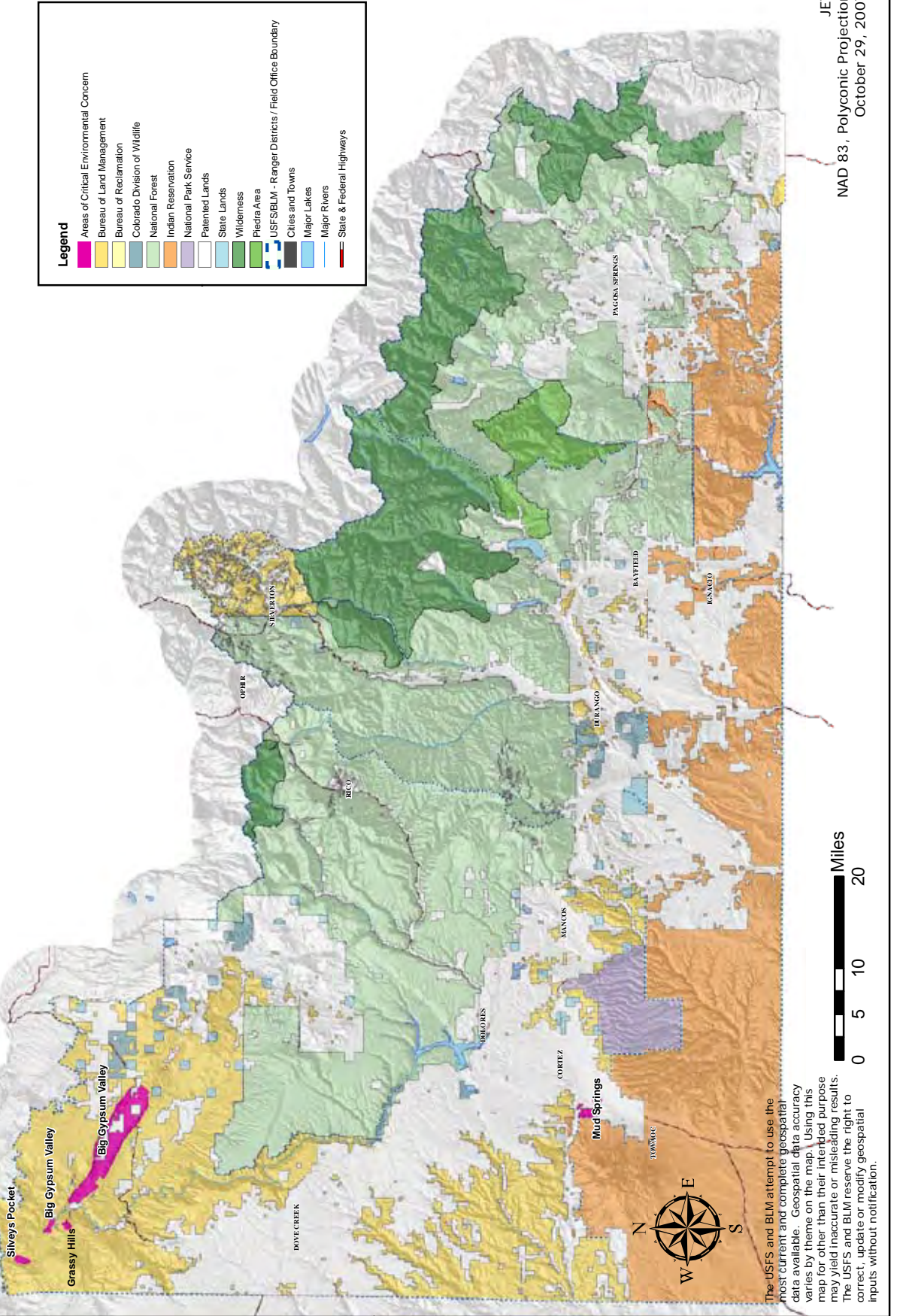
- Areas of Critical Environmental Concern
- Bureau of Land Management
- Colorado Division of Wildlife
- National Forest
- Indian Reservation
- National Park Service
- Patented Lands
- State Lands
- Wilderness
- Piedra Area
- USFS/BLM - Ranger Districts / Field Office Boundary
- Cities and Towns
- Major Lakes
- Major Rivers
- State & Federal Highways

The USFS and BLM attempt to use the most current and complete geospatial data available. Geospatial data accuracy varies by theme on the map. Using this map for other than their intended purpose may yield inaccurate or misleading results. The USFS and BLM reserve the right to correct, update or modify geospatial inputs without notification.

JET  
NAD 83, Polyconic Projection  
October 29, 2007

Figure 3.29.3 - ACECs Alternative C

# San Juan Public Lands Areas of Critical Environmental Concern (ACEC) Alternative C



**DLMP/DEIS Alternatives:** Overall, Alternatives B and D may result in the greatest impacts to potential ACECs (due to oil and gas and/or other mineral development), followed by Alternative A. Alternative C may result in benefits to potential ACECs. Removing the ACEC designation from the Mud Springs/Remnant Anasazi ACEC area under Alternatives B and D may open the site to mineral development with standard stipulations. Alternatives A and C would continue designation of the Mud Springs/Remnant Anasazi ACEC, with design criteria applied to provide additional focus on the heritage and plant resources (and also with protective stipulations, as well as the requirement of a plan of development and associated NEPA analysis for all locatable mineral development). Under Alternatives A, B, and D, the Grassy Hills and Silveys Pocket PCAs would be open to normal mining operations and standard oil and gas lease stipulations (leading to the potential for fragmentation of the unique plant communities identified). Alternative C would require protective stipulations for oil and gas development, with restrictions on surface use and the requirement of a plan of operations and associated NEPA analysis for all locatable mineral development. A scenario of deferring oil and gas leasing during the life of the approved LMP may result in moderate impacts to relevant and important values, with less than a 25% change (because values can normally be protected by avoiding surface use of land).

### **Impacts Related to Livestock Grazing**

Under Alternatives B and C, the Big Gypsum ACEC would be designated in order to address critical plant species and soil crust communities requiring location of potential disturbances to avoid soil communities. Grazing would be addressed in an implementation plan in order to provide management actions that would prevent trampling by livestock.

Removal or retention of the ACEC designation for the Mud Springs/Remnant Anasazi ACEC area would not result in additional use by livestock.

Under Alternative C, the ACEC designation of Grassy Hills and Silveys Pocket PCAs may encourage the management of livestock in order to enhance the unique plant communities.

**DLMP/DEIS Alternatives:** Overall, Alternative C may result in the greatest benefit to ACECs (due to stricter controls for livestock management). Alternative B, with separated pockets for Gypsum Cateye plant communities, may reduce the ability to manage livestock in order to benefit the importance of the relevant values ACECs represent. Under Alternatives A and D, there would be no special management of livestock.

### **Impacts Related to Recreation**

Under Alternatives B and C, the Big Gypsum ACEC would be designated in order to address critical plant species and soil crust communities. This may provide focused attention on trampling and vehicle travel across areas with sensitive soils.

Under Alternatives A and C, the Mud Springs portion of the Anasazi ACEC would restrict recreational use in order to emphasize the relevant and important values of the original designation. Removal of the designation and management within the urban influence of Cortez may result in additional use by locals for recreational activities, which may, in turn impact the cultural resources and the ecological values identified by the CNHP. Under Alternative C, the Grassy Hills and Silveys Pocket potential ACECs would provide for restricted recreational use in order to protect plant communities identified.

**DLMP/DEIS Alternatives:** Overall, Alternative C may result in the greatest benefit to ACECs (due to the restrictions on recreational use and the closure of travel routes), Alternative B would drop the need for special management from the Mud Springs/Remnant Anasazi ACEC area, and would reduce the area of the Big Gypsum ACEC designation (which would not include all known populations of the Gypsum Cateye plant community). Under Alternatives A and D, there would be no special management of recreation in relation to sensitive plant communities. Under Alternative A, heritage resources would continue to be recognized for special management; however, they would not be recognized under Alternative D.

### **Impacts Related to Invasive Species**

Under all of the alternatives, relevant and important resources in the potential ACECs may be impacted by invasive species displacement of soil crust and plant communities (due to activities that trample or displace plants and communities). Proximity to the county roads may provide a means for invasive species to move into communities in all of the relevant plant communities identified.

**DLMP/DEIS Alternatives:** The impacts of invasive species on potential ACECs may be similar under all of the alternatives, with moderate impacts resulting from disruption of recognized plant communities.

## **CUMULATIVE IMPACTS**

Impacts to the relevant and important resources identified in the existing and potential ACECs may result from activities and events both on, and off, the planning area. The scale for considering cumulative impacts would include the disturbances associated with uses on adjacent lands that result in soil movement, invasion of noxious weeds, and trampling of rare soils and soil crust communities. Sensitive resources are infrequently found within these areas; therefore, impacts would be limited to the local area of their occurrence.