U. S. Department of the Interior
Bureau of Land Management
San Luis Valley Public Lands Center
1803 W. Hwy. 160
Monte Vista, CO 81144

ENVIRONMENTAL ASSESSMENT RECORD

NUMBER: CO-500-2005-016-EA

PLANNING UNIT: San Luis Resource Area

PROJECT NAME: San Luis Resource Area Travel Management Plan

SUMMARY DESCRIPTION OF THE PROPOSED ACTION

The Bureau of Land Management (BLM) proposes travel management actions to manage access on public lands in the San Luis Resource Area (SLRA) that provide for appropriate levels of administrative and public access while sustaining the health and diversity of public land resources. These proposed actions are:

1) Modify "Area" designations;
2) Designate a route system through the specific designation of routes;
3) Address other goals and objectives that were identified through public scoping; and
4) Identify a travel management policy.

The primary purpose of this Travel Management Plan (TMP) is to re-evaluate the transportation system and design a travel system that meets national and state BLM policies.

The proposed action would improve soil, vegetation, hydrology, water quality, wildlife habitat conditions, and modify recreation setting and character throughout the project area by implementing travel management policies that will result in the reduction of route densities. Reclamation of closed routes that have a low potential to naturally revegetate will be prioritized based on their impacts to soils, hydrology, vegetation, water quality, and wildlife resources.

Modification of "Area" Designations

BLM proposes to modify public land designations in the SLRA from the Area #1 (Appendix 01A) designation of "open" and "limited" to a clearly defined "limited" category. Area #1 in the RMP was that area remaining outside of WSA and ACECs which were given the other area designated numbers. Motorized and mechanized off-route (cross-country) travel would be eliminated except in two small previously disturbed open areas. Those areas previously identified as closed areas would remain as closed areas.

The SLRA consists of three categories of off-highway vehicle (OHV) "Area" designations that are used by BLM to manage vehicular use. **"Off-Highway Vehicle" vs. "Off-Road Vehicle":**

For many years, the term off-highway vehicle (OHV) has been used by the public, industry, and the Bureau of Land Management (BLM) interchangeably with the term "off-road vehicle" (ORV). However, the term ORV has a legally established definition in the Presidential Executive Orders and the BLM's related Title 43 Code of Federal Regulations 8340.[1] Throughout this document the term "OHV" will be used, partly because it is a more commonly used term, but primarily because the regulations address all motorized vehicles which use roads and trails on BLM administered public land, and are not limited just to "off-road" vehicles.

- "Open" **areas** are locations on public lands without limitations or restrictions to full use and travel by OHVs (including cross-country travel). For the public lands administered by the BLM in the SLRA, Area #1 is designated open to OHV unless otherwise designated in a decision document.

- "Closed" **areas** are locations on public lands where no use or travel by motorized vehicle is allowed. The San Luis Hills Wilderness Study Area (WSA) is the only BLM-managed closed area in the SLRA and is closed to mechanized travel due to its status as a WSA. Sand Castle WSA, an area formerly administered by BLM, is now administered by the National Park Service (NPS) as part of Great Sand Dunes National Park. The Park Service has this area closed to motorized travel.

- "Limited" **areas** are public lands with some form of limitation or restriction for the full use of and travel by OHVs and mechanized conveyance (e.g., seasonal limitations due to crucial big game wintering and birthing periods, closed to cross-country motorized travel, or spring closure for road stability). Three Areas of Critical Environmental Concern (ACECs): Blanca Wetlands Habitat Management Area, McIntire Springs property, and the Trickle Mountain OHV area are in the limited category in the SLRA.

The SLRA RMP identified 10 distinct areas in the SLRA under the jurisdiction of BLM (see Appendix 1A for map). Table Summary-1 describes the size of each management area and the travel management designation

Table Summary-1: SLRA RMP Areas

Area	Name	Acres	SLRA RMP Area Designation

[1] 43 CFR 8340.0-5 states:
As used in this part:
(a) *Off-road vehicle* means any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding:
(1) Any nonamphibious registered motorboat;
(2) Any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes;
(3) Any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved;
(4) Vehicles in official use; and
(5) Any combat or combat support vehicle when used in times of national defense emergencies.

Table Summary-1: SLRA RMP Areas			
Area	**Name**	**Acres**	**SLRA RMP Area Designation**
#1	San Luis Valley General	389,279	Open with seasonal closure for critical winter wildlife habitat (except for those areas in an ACEC or WSA)
#2	Trickle Mountain (containing Trickle Mountain ACEC)	44,521	Limited
#3[2]	Sand Castle WSA (Sand Castle ACEC and WSA)	3,595	Closed
#4	Blanca (containing the Blanca Wetlands ACEC)	9,147	Limited
#5	Elephant Rocks (containing Elephant Rocks ACEC)	1,852	Limited
#6	La Jadero Canyon (containing La Jadero Canyon ACEC)	3,632	Limited
#7	Los Mogotes (containing Los Mogotes ACEC)	33,456	Limited
#8	San Luis Hills (containing San Luis Hills ACEC and WSA)	28,713	Limited in the ACEC; Closed in the WSA
#9	Rio Grande River Corridor (containing Rio Grande River Corridor ACEC)	2,640	Limited
#10	Cumbres and Toltec Scenic Railroad Corridor (containing Cumbres and Toltec Scenic Railroad Corridor ACEC)	3,824	Limited

The proposed action would change the area designations for most of Area #1 from “open” to a category of "Limited to Designated Roads and Trails”. The exceptions to this change in Area #1 designation would be two small “open” areas, the Manassa Area of 179 acres and the Antonito Area of 81.9 acres (see Appendix 24). These unnamed areas would retain the “open” area designation.

The proposed action would not change the designation of the remaining nine travel management Areas (TMAs). The San Luis Hills WSA was closed to motorized and mechanized use under the SLRA RMP and will remain closed under this TMP. The remaining eight areas in the San Luis Valley (listed in Table Summary-1) under the jurisdiction of BLM that were designated in the SLRA RMP as “limited” areas due to their ACEC designations will remain “limited”.

Designation of Specific Routes and a Route Network

For “Area #1”, the proposed action would further establish designated travel routes for administrative and public uses, and define the types of uses that are permitted on each route. The second proposed action under this TMP would designate a system of roads and trails as open (open/mitigate open), limited (limited/mitigate limited), and closed for the project area. These proposed actions would modify the acres listed in the RMP, thereby modifying the amount and percentages of area, miles, and routes to be managed. The proposed route network under this TMP would provide 1,037.9 miles of routes managed by BLM designated as open or limited (see Actions Common to All Action Alternatives). There would be 650.9 miles of routes open to the public for motorized uses. Ninety miles would be designated for non-motorized routes, and

[2] Area #3 was the Sand Castle ACEC and a WSA. This area became part of the Great Sand Dunes National Park and is no longer under BLM administration. Therefore, this area will not be designated in this TMP and discussion of the area will be minimal.

296.6 miles of routes would be limited to authorized motorized use. There would be 19.3 miles of routes in the limited category available for public non-motorized uses under the proposed action. The public would have available for recreational vehicle use during the winter months approximately 619.3 miles of existing motorized BLM routes and one open area for snowmobile use.

The development of a designated travel management access system would modify the current use of "open" area designation allowing cross-country travel and user-created routes in Area #1 on 389,279 acres (75% of the resource area) to limited on designated routes. This would eliminate open cross-country travel and the potential for additional user-created routes which would occur under the "no action" alternative (Alternative A). The proposed route network would close approximately 31% of existing routes. Seasonal restrictions were implemented through planning actions in some ACECs including Trickle Mountain OHV, Blanca Wetland, McIntire Property, and Rio Grande Corridor.

This TMP delineates and defines specific **route** designations (i.e., in addition to the change of "Area #1" designation from open to limited). These specific route designations are categorized into five categories: Open, Mitigate Open, Limit, Mitigate Limit, and Closed. The word "mitigate" is an indication during the route analysis that the ID Team identified by route that BLM had a responsibility and needed to follow up with redesign, modification, or monitoring of a route. Notes were taken to assist in prioritization of future work on some specific routes.

- "Open" **routes** are routes on public lands without limitations or restrictions to full use and travel by OHVs.

- "Mitigate Open" leaves the route open as defined above, but identifies that some form of management action above the custodial maintenance to improve the route should impacts be present and/or monitoring specific actions we planned would be taken by the BLM to maintain or improve the route should impacts be present or arise in the future (i.e., if identified through adaptive management monitoring). These routes will be discussed under the term of "open" throughout this document.

- "Limited" **routes** are routes on public lands with some form of management limitation or restriction on the full use and travel by OHVs (e.g., seasonal limitations due to crucial big game wintering and birthing periods, administrative purposes, commercial access, and private property access).

- "Mitigate Limit" restricts use of the route as defined above for "Limited", but identifies that some form of action would be taken by the BLM to maintain or improve the route should impacts be present or arise in the future (i.e., as identified through adaptive management monitoring). These routes will be discussed under the term of "limited" throughout this document.

- "Closed" **routes** are routes on public lands where absolutely no use or travel by motorized and mechanized vehicles is allowed. Routes designated as closed will be removed from any motorized or mechanical travel networks identified in literature and/or maps and would not

be subject to maintenance other than what may be necessary to close the route and enforce the closure.

The proposed action designates numerous routes as limited to administrative access. This designation would limit motorized access on these routes to BLM authorized uses, employees, permittees, contractors, and personnel from other agencies would be allowed motorized access for resource management, maintenance, inventory, monitoring, or compliance purposes. Public non-motorized access for foot and horseback riding is authorized. Limited designation would include commercial needs such as utility companies and when the route is the only access to private property. Mountain biking would be authorized on some of these administrative routes as designated (19.3 miles of routes). Motorized recreational use would not be authorized on the remainder of these routes. The “limited to administrative access” routes would not available to snowmobiles.

An implementation and monitoring plan would be developed after the Decision Record (DR) on this TMP is issued. This plan would be developed in conjunction with and subject to the travel route system chosen in the DR, would be updated annually as necessary, and would include, but not be limited to, such activities as signing, information and education forums, reclamation of closed routes, creation of parking lots/staging areas, maintenance, monitoring of impacts associated with continued use on routes designated as open/mitigate open or limited/mitigate limited, and consideration of proposed new routes (both motorized and non-motorized).

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ACRONYMS USED IN THIS DOCUMENT

4WD	Four-wheel drive vehicle
ACEC	Area of Critical Environmental Concern
ATV	All Terrain Vehicle
BCC	Birds of Conservation Concern
BCR	Bird Conservation Region
BLM	Bureau of Land Management
BLM-SLVPLC	BLM San Luis Valley Public Lands Center
CNHP	Colorado Natural Heritage Program
CFR	Code of Federal Regulations
CUA	Common Use Area
DFC	Desired Future Condition
DOW	Colorado Division of Wildlife
DR	Decision Record
EA	Environmental Assessment
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
FAR	Functional-at-Risk
FLPMA	Federal Land Policy and Management Act
FMU	Fire Management Units
FPA	Fire Program Analysis
GIS	Geographic Information System
GPS	Global Positioning Satellite
HUC	Hydrological Unit Codes
LCAS	Lynx Conservation Assessment and Strategy
MBTA	Migratory Bird Treaty Act
NDIS	Natural Diversity Information System
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NF	Non-Functional
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
OHV	Off-Highway Vehicle
ORV	Off-Road Vehicle
PFC	Proper Functioning Condition
R&PP	Recreation and Public Purpose
RGNF	Rio Grande National Forest
RMIS	Recreation Management Information System
RMP	Resource Management Plan
ROD	Record of Decision
ROS	Recreational Opportunity Spectrum
ROW	Right-of-Way
RU	Recovery Unit
SLRA	San Luis Resource Area
SLRA RMP	San Luis Resource Area Resource Management Plan

ACRONYMS USED IN THIS DOCUMENT

SLV	San Luis Valley
SLVEC	San Luis Valley Ecosystem Council
SRMA	Special Recreation Management Area
SRM-CO RU	Southern Rocky Mountains – Colorado Recovery Unit
SRM-NM RU	Southern Rocky Mountains – New Mexico Recovery Unit
SRMGA	Southern Rocky Mountains Geographic Area
T&E	Threatened and Endangered Species
TCP	Traditional Cultural Property
TMA	Travel Management Area
TMP	Travel Management Plan
TES	Threatened, Endangered and Sensitive Species
U.S.D.A.	United States Department of Agriculture
USDI	United States Department of Interior
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management
WAPA	Western Area Power Administration
WEPP	Water Erosion Prediction Program
WSA	Wilderness Study Area
yBP	years Before Present

INTRODUCTION

PURPOSE AND NEED OF PROPOSED ACTION

The purpose of the proposed action is to implement travel management goals and objectives identified in the San Luis Resource Area Resource Management Plan (approved December 18, 1991). Travel Management Planning is needed to identify travel management policy, establish a designated route system[3], and address potential resource impacts identified during public scoping (see Identified Issues and Concerns on page 27).

LOCATION AND SETTING

A map displaying the boundaries of the San Luis Resource Area is located in Appendix 1A. The planning area boundary for this Travel Management Plan is displayed on the same map. The southern boundary of the planning area borders the New Mexico and Colorado state lines, with the northern boundary being the Rio Grande National Forest (RGNF), Poncha Pass, and Buffalo Pass, including the communities of Villa Grove and Saguache. The eastern boundary is the RGNF/Sangre de Cristo Wilderness and includes the communities of Crestone and Fort Garland. The western boundary is again the RGNF and includes the communities of La Garita, Del Norte, and South Fork. Several communities are included in the San Luis Valley floor and are not listed. The planning area boundary includes portions of Saguache, Rio Grande, Alamosa, Conejos, and Costilla Counties and encompasses approximately 2,396,803 acres; including 520,945 acres of BLM administered public lands. The planning area could be described generally as the San Luis Valley (encompassing all ownership types). The BLM SLRA is only those public land tracts managed in trust by the BLM. The planning area is in Congressional District #3.

Included within the planning area are:

- San Luis Hills Wilderness Study Area (WSA);
- Trickle Mountain, Blanca Wetlands, Elephant Rocks, Ra Jadero Canyon, Los Mogotes, San Luis Hills, Rio Grande River Corridor, and Cumbres and Toltec Scenic Railroad Corridor Areas of Critical Environmental Concern (ACECs);
- Zapata Falls, Penitente Canyon, Rio Grande Corridor, and Blanca Wetlands Special Recreation Management Areas (SRMAs); and
- Sections of the Old Spanish Trail.

[3] "Designated route system" refers to the method of managing the transportation network in which the individual roads and trails (routes) are designated as open, limited or closed. OHVs are permitted to operate on all *designated* roads and trails which are identified as open to that motorized use, identified on travel maps and/or posted on the ground as routes that are available for motorized use under a *designated* travel management system.

The Luis Maria Baca Land Grant, Great Sand Dunes National Park, Alamosa and Monte Vista National Wildlife Refuges, Russell Lakes Colorado State Refuge, and San Luis Lakes State Wildlife Area are located in the San Luis Valley, but are not under the jurisdiction of the BLM and are not subject to decisions in this TMP. The locations of the WSA, ACECs, and SRMAs are shown on in Appendix 1B.

Topography, vegetation, and climatic conditions vary throughout the planning area. The elevation of the public lands ranges from 7,544 feet to 11,068 feet. The San Luis Valley is characterized by dry air, sunny days, clear nights, precipitation extremes, moderate/high evaporation rates, and large daily temperature changes. The San Luis Valley is the largest high elevation flat valley in the world. It is roughly 100 miles long and 50 miles wide for that portion of the valley in Colorado. The rugged San Juan Mountains to the west and the Sangre de Cristo Mountains to the east flank the high, wide and flat San Luis Valley. The topography of the planning area varies from flat valley floor in the San Luis Valley to steep mountainous rough and rocky terrain.

There are 13 broad vegetation types in the planning area. Three of these vegetation types (i.e., grassland, piñon/juniper, and half-shrub) comprise 80% percent of the area. Vegetation in the grassland varies from blue grama, bottlebrush squirreltail, ring muhly, and red three-awn at the valley floor to Arizona fescue and mountain muhly in the high elevations. Sagebrush and mountain shrubs (such as Gamble oak, skunk bush sumac, currant, and mountain mahogany) are interspersed with grasslands and forests. Conifer forest such as Douglas fir and ponderosa pine are present. Piñon/juniper occurs in the foothills at lower elevations along and around mountain ranges. Greasewood, winterfat, four-winged saltbush, snakeweed, and rabbitbrush dominate the grassland in the valley floor. Considerable foothill vegetation type exists with short grasses and piñon pine/Rocky Mountain juniper.

Relatively mild winter conditions allow motorized, mechanized, and non-motorized use year-round. Summer months are typically mild, pleasant, and dry while the winters are characteristically cool with limited snowfall accumulation except in the higher elevations. Only the highest elevations receive sufficient snow pack to prevent wheeled motorized travel and allow for snowmobile use as well as other winter sport activities on a regular basis. Temperatures vary with elevation. Summer temperatures range from lows in the 40s to highs in the 80s but may reach as high as 98 degrees. The winter temperatures range between zero to the 30s with an extreme low of -42 degrees. The average precipitation is 7.1 inches per year with a frost-free period of 98 days. The snow accumulation period is generally September to May and is longer in the higher elevations with snow possible all year at extreme elevations. Spring can be extremely windy. Further details are described in the SLRA RMP, Chapter 2, Affected Environment.

The populations most affected by this analysis reside in Villa Grove, Saguache, Crestone, Alamosa, Monte Vista, Center, La Garita, Del Norte, South Fork, La Jara, San Luis, Antonito, Romero, Mannassa, Sanford, Blanca, Fort Garland, Salida, Poncha Springs, Canon City, Pueblo, Colorado Springs, and Denver, with residential subdivisions and ranches scattered throughout the planning area. The counties included in the SLRA (Alamosa, Rio Grande, Saguache, Conejos, and Costilla) experienced limited population growth between 1990 and 2000, increasing from 39,649 to 45,359 (12.6%) during this decade. Forecasts for the same counties

predict populations to continue to grow to an estimated 61,604 people by 2030 (26.4%). Chaffee County located north of Poncha Pass and the Resource planning area has a significant impact on recreation and route usage which means that the SLRA TMP will have some regional impact. Chaffee County's 1990 population was 12,684 and increased during the decade to 16,242 (21.9%). The forecast for Chaffee County population growth by 2030 is 27,579 (41.1%).[4]

The San Luis Valley planning area is reflected in Appendix 1A. The project area covered by this TMP is smaller than the planning area and the total acres of public lands and of other land ownership within the planning area is indicated in Table 1.

Table 1: Planning Area Land Ownership

Land Ownership	Acres
Public Lands (BLM Administered)	520,945
State Lands including Colorado Division of Wildlife	184,687
National Park Service	149,612
U.S. Fish and Wildlife Service	24,088
Private Lands	1,517,471
Total	**2,396,803**

Table 2 indicates the total miles of routes on lands within the project area. The NPS and United States Fish and Wildlife Service (USFWS) routes could not accurately be determined and of those that would show on an area photograph the BLM is unable to determine which routes if any are county, State or other agency routes.

Table 2: Approximate Miles of Routes by Ownership within Planning Area

Ownership or Jurisdiction	Miles*
County	3,959
State	420
Private	1,835
Public Lands (BLM administered lands)**	1,679
Total	7,892

**Rounded to the nearest whole number*
***Includes 223.4 miles of non-BLM administered routes passing over BLM land*

History of Travel Management Planning in the Project Area: Since the SLRA RMP and Record of Decision (ROD) were issued in 1991, further efforts at travel management have been limited to activity level planning on particular tracts or blocks of land.

The Blanca Wetlands Habitat Management Plan was completed in August of 1995. This plan included as part of the action limitations and restrictions on public use of roads and trails (including non-motorized and non-mechanized). It designates those roads and trails where motorized and/or mechanized vehicles are permitted and identifies restrictions on season of use for foot traffic and season of use for the designated motorized routes. The purpose of the plan was to promote water bird habitat maintenance, habitat protection, and nest success.

[4] Colorado Department of Local Affairs, Colorado Demography Section. Available at: http://dola.colorado.gov/demog/demog.cfm.

The Trickle Mountain OHV Plan was completed in September, 1979. The decisions from this plan were carried forward in the SLRA RMP. These decisions included road closures, seasonal limitations, and roads limited to permittee and administrative purposes in an area larger than the Trickle Mountain ACEC. The purpose of the Trickle Mountain OHV Plan was to support critical big game winter habitat and reduce big game harassment. Bighorn sheep disturbance during lambing was of particular concern.

The above plans (i.e., Blanca Wetlands Habitat Management Plan and the Trickle Mountain OHV Plan), as well as the Rio Grande Corridor Plan, were evaluated for consistency, feasibility, and effectiveness in this planning effort.

The SLRA RMP in 1991 designated nine ACECs. Each of these ACECs was to have roads and trails designated through an activity level plan. Since activity level planning only occurred for Blanca Wetlands and Trickle Mountain, the remaining ACECs were to have roads and trails limited to the existing roads and trails as of 1991.

The Rio Grande Corridor Plan in January 2004 completed an access analysis as part of the management development. The decision resulting from this planning effort closed some routes to motorized uses and limited motorized uses in other instances.

An integrated activity plan was completed on the McIntire Springs property in 1995 which required a seasonal closure on all public uses including motorized from October 1 to February 15. The decision did not apply to the Simpson property as that property had not yet been purchased.

The designations made in these activity-level planning documents are carried forward under this TMP unless specifically noted otherwise.

SCALES OF ANALYSES

The travel management assessments for the SLRA TMP utilized a range of geographic scales of analysis, including regional, planning area, watershed, and travel management area (TMA) scales.

Regional Scale Analysis. The regional scale analysis was used to respond to the need to identify the origins of the affected users and the locations of existing recreational travel opportunities that surround the SLRA. This scale was used to analyze regional recreational and access opportunities. It provided a consideration of future demands from the motorized/non-motorized recreational community such as dispersed recreation and visual resource opportunities. This scale was used to evaluate the conditions of and impacts to natural resources from motorized and non-motorized recreation demand. Unique habitats, wildlife resources, TES plants and animals for the Valley, rare natural resources that are not found in the region were identified. Uses which are common in the region and not yet occurring in the Valley were identified and considered. Some examples include sagebrush for Gunnison’s sage-grouse, water for the closed basin storage, physically isolated streams for Rio Grande cutthroat trout, stable to improving big game populations, waterfowl and shorebird rest, nesting, and production areas, TES plant and animal habitat such as mountain plover, southwest willow flycatcher, and yellow-billed cuckoo. The regional scale analysis provided a "big picture" setting for the project. The

regional scale analysis produced the following information and conclusions that guided the development and analysis of the alternatives considered. A map of the region with the affected population centers and locations of existing recreational opportunities is located in Appendix 2A (Regional Population Centers & Recreation Opportunities).

> ***Origins of affected users:*** The populations most affected by this proposal reside in Villa Grove, Saguache, Crestone, Alamosa, Monte Vista, Center, La Garita, Del Norte, South Fork, La Jara, San Luis, Antonito, Romero, Mannassa, Sanford, Blanca, Fort Garland, Salida, Poncha Springs, Canon City, and residential subdivisions and ranches scattered throughout the planning area. Significant numbers of users originate from larger cities located outside of the immediate planning area, including Pueblo, Colorado Springs, and the Denver metropolitan area. A map of the Colorado population centers proximate to the San Luis Valley is located in Appendix 2B (Colorado Population Centers Proximate to the San Luis Valley).
>
> ***Existing recreational travel opportunities:*** Numerous federal, state, county, city, and community lands are scattered throughout the region that provide for a wide variety of recreational travel and use experiences. Many miles of motorized recreational routes are available in other parts of the region that afford recreational experiences that either do not occur in this planning area or that are only found in limited amounts within the SLRA. Over 1,773 miles of 4WD, ATV, and motorcycle routes occur on public lands managed by the BLM and the RGNF in the vicinity of the planning area, including the Continental Divide Trail, the Rainbow Trail and numerous other trails on the RGNF. Bicycle, horse, and hiking trails occur throughout the region on surrounding public lands administered by other Districts and Field Offices and managed by other National Forests. The Gunnison National Forest, San Juan National Forest, the Pike San Isabel National Forest and the Gunnison BLM Field Office, Royal Gorge Field Office, the San Juan Field Office, the Carson National Forest, and the Taos Field Office. These are Forests and public lands adjacent to the San Luis Valley public lands. This very large area has too numerous recreation facilities to list. The routes on public lands provide connection from private property, county, and state roads to RGNF routes and are an integral part of the San Luis Valley transportation system. This combined route system is part of a larger linear experience.

Planning Area Scale Analysis. An analysis was conducted at the planning area scale to identify the important qualities and recreation travel opportunities that exist within the San Luis Valley. The planning area scale analysis was used to guide the development of travel management alternatives that would respond to both local and regional needs for maintaining ecosystem health and provide recreation travel opportunities when combined with the information and conclusions that resulted from the regional scale analysis. The combined regional and planning area assessments yielded the following information and conclusions.

> ***General characteristics of the existing transportation system:*** An inventory of the existing transportation system was conducted prior to the initiation of the planning area analysis. A total of approximately 1,679 miles of routes were inventoried and identified on public lands.

The majority of the existing routes are primitive native surface routes that were created for mining, ranching, timber, removing (chaining) dense stands of piñon and juniper trees, and for constructing retention dams. User-created two-track routes of two widths have been steadily increasing over the last 10 years with the advent of more capable and increased power in 4WD vehicles, ATVs, and the increasing development of off-road and cross-country designed vehicles. A casual review of routes created over the last five years reveals that three to five miles of user-created routes are being created annually in the particular areas of concern are Penitente Canyon, Elephants, Poncha Pass, Lime Kiln, and Los Mogotes ACEC. This pattern has been observed in much of the project area. It is expected that motorized use will continue to increase on existing routes and that the establishment of additional user-created routes would continue. The recent increase in user created routes has been due to increased preference for motorized access and increased restrictions of motorized use on Front Range pubic lands/forests. The motorized public users when questioned have confirmed that they have moved due to additional restrictions on public lands/forests closer to their residence. There is the potential for increased rate of growth as surrounding/regional National Forests and public lands managed by the BLM continue to develop/manage/increase travel management planning. Recent trends indicate that ATV-created routes supersede all other OHV user-created routes. Other areas are receiving increased user-created routes but at a lower rate of development. Travel management changes along the Colorado Front Range have resulted in increased San Luis Valley public lands uses. Many of the Forests and BLM offices are heavily involved in some form of travel management planning efforts which will probably increase the restrictions on routes and reduce the number of routes available for motorized recreational use. This increase in restricted use and enforcement has and will continue to move the motorized recreation public to areas not yet regulated to the same extent.

Very few constructed single-track routes are located within the planning area. Most single-track routes were created along drainage bottoms by cattle and have subsequently been used by the public for hiking, horseback riding, and accessing areas with dirt bikes and ATVs, and are not recognized as single-track trails due to their initial creation by livestock. The agency does not have the resources to develop or maintain these trails. This TMP will restrict the use of cattle trails by ATVs and dirt bikes due to the resource damage created as they attempt to travel on these narrow, often serpentine trails. These trails were not inventoried and were not designated as part of this TMP.

Land ownership patterns: The potential for increasing and enhancing travel opportunities is limited by land ownership patterns. The public lands typically consist of contiguous blocks of land between private lands and the Rio Grand National Forest. In the remaining situations the public lands consist of scattered tracts of varying sizes separated by surrounding private lands. The opportunity to develop half- and all-day recreational experiences is somewhat limited by the size of the public land blocks and the distance from private land (state/county roads) to the RGNF. When the public lands are considered with the RGNF routes, then many half- and all-day loops and routes are available for the high-quality recreational experience. The planning process considered that the BLM routes were connector routes to Forest Service system routes and the overall benefit to recreational opportunity was significant. One of the premises in the

planning process was if a BLM route connected to a RGNF system route and barring no known significant sensitive resource issues, then the BLM route would often remain open and available to the level the Forest was using the route.

Classified special management areas: The opportunity to increase and enhance recreational travel opportunities is constrained by existing classified special management areas, including the San Luis Hills WSA, Trickle Mountain, San Luis Hills, Los Mogotes, Blanca Wetland, Ra Jadero Canyon, Rio Grande River, Elephant Rocks, and Cumbres and Toltec Scenic Railroad ACECs. The Rio Grande Corridor Plan, McIntire property, Blanca Habitat Management Plan, and the Trickle Mountain OHV Plan are previous planning documents with associated decisions limiting travel use categories on specific routes. The existence of these special management areas places limits on the locations of travel routes and motorized uses.

Major attractions: The SLRA includes 11 unique features that set the area apart from its regional setting: the Rio Grande, Great Sand Dunes National Park, San Luis Hills WSA, proximity of the Sangre de Cristo Wilderness, San Luis Lakes State Wildlife Area, Penitente Canyon Climbing Area, Cumbres & Toltec Scenic Railroad, Old Spanish Trail, old Fort Garland, Pikes Stockade, and many historic sites of cultural interest. Each of these features attracts large numbers of visitors, including local and regional residents and out-of-state tourists. Wilderness hiking and horseback riding attract much interest as soon as the snow melts. The 14,000 foot peaks in the area are a particular draw. The Penitente Canyon Climbing Area attracts rock climbers from across the nation, as well as from foreign countries. The Cumbres & Toltec Scenic Railroad is a very popular scenic attraction for the spring, summer, and fall months, attracting thousands of visitors. The San Luis Hills WSA is a rugged and sparsely trailed block of public lands that provides a high degree of solitude and challenge that is found in a few other areas. The need to protect the unique resources and preserve the qualities of these attractions was an important consideration in the development and analysis of the travel management alternatives.

The many lakes in the area and the high quality and quantity of hunting areas are very popular and provide significant income for the local economy during hunting season. A major influx of visitors occurs during hunting and fishing seasons with major impacts and uses to access routes.

Other significant recreational uses: Recreational uses throughout most of the remaining portions of the planning area consist of a mixture of motorized, mechanized, and non-motorized uses. Motorized activities dominate, while non-motorized activities dominate more rugged areas. The locations and recreational opportunities of these areas are defined and discussed in the Travel Management Area Scale Analysis on page 9.

Traditional travel use opportunities that formed the main stay locally and regionally were horseback riding and hiking. This emphasis/interest has changed over the last 10 to 15 years with the advent of and affordability of powerful ATVs, dirt bikes, and four wheel drive vehicles. The predominate demand and use is now for motorized access and activity opportunities. The maintenance of the hiking and riding demand is primarily due

to the wilderness areas in the vicinity and the remote camping, fishing, hunting, and outfitting they provide. The restrictions being applied in the region has brought to the public's attention the dispersed camping and recreational opportunities in the Valley. The regional importance of the area for hiking and bicycling is moderate, but increasing, due primarily to the quality of remoteness of many of the BLM and RGNF routes with prime dispersed campsites. The only area with extensive bicycle trails is Penitente Canyon. The Limekiln TMA contains the Hathaway Stone Quarry, which is being considered for a rock crawling area/trail under the Proposed Action Alternative C and Maximum Access Alternative D. This area already receives considerable use of this type. The primary use in the Limekiln TMA in the most recent years is 4WD and ATV on most if not all evident routes.

Weather and Climate: The San Luis Valley has a reputation for being extremely cold with long winters and deep snows. Recent weather and climate patterns have moderated from the more historic patterns, such that snow accumulations are low to moderate and melt in most of the San Luis Valley in a day or so. Temperatures may drop to -20° F at times but generally warm into the 30s. Periods when access is limited by snow are short and infrequent at the lower elevations. The lack of snow and the high number of sunny and mild days permit year-round access and use of most of the public lands in the San Luis Valley with the exception of areas above 9,000 feet. The upper elevations and the area near Poncha Pass routinely offer dependable opportunities for snowmobiling, snowshoeing, and cross-country skiing. Visitation and use of the Penitente Canyon and Elephants Rocks Climbing Areas, including camping at the Penitente Canyon Campground, occurs throughout the winter months. Conditions for rock climbing and other recreational uses are considered by most users to be more favorable in the winter, when temperatures are cooler, than during the hot summer months. The mild dry winters at the lower elevations that are characteristic for the area cause most of the TMAs to be accessible year-round, many of the routes are highly susceptible to rutting and erosion following rain storms and snowstorms when warmer temperatures melt the snow and road surfaces become muddy. It takes several days to close routes due to their large number and dispersed nature (the spring thaw makes road surfaces very soft and susceptible to rutting). Rutting usually results in hazardous travel, increased unregulated flow of run-off to surface waters, and sheet erosion.

Watershed/TMA Scale Analysis. The watershed/TMA scale analysis was used where possible to respond to the need to identify environmental impacts from both private and public lands within a defined landscape. Those areas with administrative decisions already in place (ACECs, WSAs, Blanca Wetland Habitat Management Area, McIntire property, Trickle Mountain OHV Plan, and the Rio Grande Corridor) were not analyzed on a watershed basis because they have management objectives that set them apart from the contiguous landscape. In spite of these complications, the watershed/TMA scale analysis was utilized wherever feasible. A watershed scale analysis was completed on the 6th level watersheds in the San Luis Creek, Villa Grove, South Fork, and Limekiln TMAs. Some analysis was completed on a 6th level watershed as appropriate in other TMAs. The analysis displays the impacts from all the routes within the watersheds/TMAs, regardless of ownership. The watershed/TMA scale of analysis helps to display the cumulative impacts of routes and other forms of development. Those administrative areas that did not fit watersheds were analyzed based upon all land and route impacts in that

geographic area as defined by the TMA boundary and management objectives. This was necessary in order to duplicate the level of analysis performed by the watershed analysis. This is important because as more private land in the planning area becomes developed, the public lands become more valuable as wildlife habitat, intact watersheds, and open space. The impacts resulting from the greater number of routes and people traveling on them increase substantially as private lands become more developed. This increased impact from routes and other forms of development can have a dramatic effect on wildlife, water quality, vegetation, and other resources. The 6th level watershed provides an appropriate scale within the San Luis Valley to differentiate the impacts between private and public lands.

TMA Scale Analysis These smaller travel management areas (TMAs) helped the Interdisciplinary Team to focus on smaller scale areas and individual routes within the context of the different characteristics of each TMA throughout the evaluation and designation process. The Interdisciplinary Team applied a standardized process which considered each route based on its individual characteristics or merits, its relationship to and impacts with other routes and areas, its relationship to the TMA Desired Future Condition (DFCs) and management objectives, and applicable land management mandates (such as the Endangered Species Act (ESA)) in designating routes for the alternatives. This process complemented the Interdisciplinary Team's extensive knowledge of the project area and its network of routes while ensuring that National Environmental Policy Act (NEPA) guidance was closely followed. For example, the Interdisciplinary Team applied their detailed knowledge of each TMA natural resources when designating routes at the TMA level. They considered and reviewed these designations at a broader landscape scale. The Interdisciplinary Team considered natural resources and potential cumulative impacts to these resources within the planning area and beyond, including other BLM, state, RGNF system routes, and areas surrounding the project area.

The analysis completed at the TMA scale considered the special qualities and travel use opportunities that exist in different portions of the San Luis Valley. A total of 23 TMAs were identified, based primarily like characteristics such as breaks along adjoining private and state-owned land boundaries, classified special management area boundaries, access status (lack of easements for public access), vegetation characteristics, public land patterns, and by natural topographical features that limit travel management options. These TMAs are identified in Table 3.

Table 3: SLRA Travel Management Areas

#	TMA Name	Size
1	Blanca Wetlands ACEC	11,383 acres
2	Elephant Rocks ACEC	1,869 acres
3	Alamosa River	90,082 acres
4	Limekiln	25,741 acres
5	Lower Saguache	33,092 acres
6	McIntire/Simpson	1,588 acres
7	Los Mogotes ACEC	31,541 acres
8	Ra Jadero ACEC	3,837 acres
9	Tracy	46,058 acres
10	Penitente Canyon	4,192 acres
11	San Luis Creek	35,176 acres
12	Cumbres and Toltec Railroad Corridor ACEC	4,040 acres
13	Villa Grove	30,562 acres

14	Sangre de Cristo	20,768 acres
15	Upper Saguache Creek	7,727 acres
16	Trickle Mountain	67,342 acres
17	Rio Grande Canal	7,939 acres
18	San Luis Hills ACEC	25,769 acres
19	San Luis Hills WSA	10,240 acres
20	San Luis Hills	43,684 acres
21	South Fork	5,092 acres
22	Zapata SRMA	3,111 acres
23	Rio Grande River Corridor ACEC	5,795 acres

Brief descriptions of the TMAs, management objectives, and DFCs for each TMA are listed below. Appendix 3 shows the locations of the T.

The Interdisciplinary Team determined that some objectives and conditions were appropriate for all areas. These overall goals/conditions were established for all areas and are not listed individually under each TMA.

Two phrases are used several times during the following discussion; "promote non-motorized recreation" and "manage dispersed recreation". The promotion of non-motorized recreation in this planning effort is defined as the analyses of opportunity to locate, develop, and advance or increase awareness of opportunities for non-motorized recreation. This effort was further refined in the planning process as an effort to search out routes that would provide appropriate recreational opportunity of this nature. The management of dispersed recreation was defined as to control, direct, limit, develop, and open such that the BLM would be able to administer and arrange improved access to and for dispersed recreational opportunities so that resource damage would not occur and existing damage would be corrected.

General Management Objectives Common to all Areas

The following management objectives and DFCs were developed through internal and external scoping to assist in the development of a travel management system by providing a word picture of what the expected outcome of each action alternative should look like. The general objectives and DFCs were to be considered in the planning of all TMAs:

- Maintain and improve the designated routes for sustainable motorized, mechanized, and non-motorized recreation access.
- Manage for dispersed recreational opportunity where appropriate.
- Improve interpretation, education, and signage.
- Provide reasonable motorized access for private property access.
- Maintain access for livestock permittees for conducting permitted activities.
- Maintain administrative access to range improvements.
- Protect threatened, endangered, and sensitive (TES) species habitat; enhance and maintain wildlife habitats.
- Protect and enhance critical winter habitat.

- Improve fisheries.
- Protect soils, watersheds, and riparian health.
- Evaluate closure, relocation, and/or redesign of routes for riparian and resource protection.
- Evaluate duplicate routes for closure.
- Allow for temporary closure of routes due to weed treatment/infestations.
- Revisit seasonal route closures annually for wildlife protection/enhancement.
- Protect National Register eligible cultural resources and identify and protect cultural values and Native American Traditional Cultural Properties (TCPs).
- Manage the mountainous and scenic landscapes and views for recommended visual resource management (VRM) classes.
- Promote responsible use of public lands (e.g., no illegal dumps).
- Evaluate route density[5] by TMA and make adjustments as appropriate based upon resource sensitivities, potential for user conflicts, DFCs, the individual alternative management goals, etc.
- Protect the integrity of the long-term study sites.
- Reduce weed proliferation through route reduction and/or improved management.
- Evaluate access for forest and woodland management activities.
- Define legal access through the SLRA TMP process.

1. Blanca Wetlands ACEC TMA/TMA

The Blanca Wetlands ACEC TMA is located northeast of Alamosa. The TMA includes a group of public land tracts in the vicinity of Mishak Lakes 22 miles north of Blanca Wetlands managed under an agreement with The Nature Conservancy for wildlife purposes. These tracts are five miles east/southeast of the Russell Lakes Wildlife Area in Township 46 north, Range 24 and 25 south. Mishak Lakes are located in the middle of the San Luis Valley, two to five miles west of Colorado State Route 17. Some of the tracts can be reached by county roads G and 59. The Blanca Wetlands and Mishak Lakes are surrounded by private lands. Blanca Wetlands is accessed by county road 2 Mile. The Blanca Wetlands has a completed habitat management plan (the Blanca Wetland Habitat Management Plan) and is a SRMA.

[5] Route density is the total number of miles of route per square mile.

Very limited access is available to Mishak Lakes tracts primarily due to the soils types combined with extremely wet seasonal conditions in the riparian/lakes areas making any travel, but particularly motorized travel hazardous. Mishak Lakes tracts share the wetland/riparian characteristics of the Blanca Wetlands.

Most of the Blanca Wetlands is closed to public access by motorized and mechanized methods, but seasonally open to foot/horse travel. A seasonal closure to the public due to water bird production exists from February 15 to July 15. A road system is open to the public for motorized access from July 15 to February 15. An extensive service road system is open to public foot/horse use on the motorized administrative system from July 15 to February 15.

Blanca Wetlands has two primary purposes: one is water bird production and the other is recreational opportunities which do not conflict with the first purpose. Numerous fishing lakes and wildlife viewing stations are available. Nearly all existing routes are needed for lake/pond water level and vegetation community maintenance and wildlife monitoring.

Excellent hunting, fishing, bird watching, and educational opportunities exist. This area receives extensive public use. Restrooms, handicapped access, and other developed recreational facilities have been constructed.

Blanca Wetlands is in the Central Flyway and includes significant stopover and nesting habitat. It has been identified as a core wetlands production area necessary for recovery of the San Luis Valley nesting water bird populations and an area critical for the conservation of amphibian populations. A number of TES, waterfowl, and amphibian species inhabit the area. It is a unique wetland riparian habitat providing limited bio-diversity riparian/wetland habitat.

Blanca Wetlands is known to contain significant cultural sites.

The DFC is to maintain and improve the area for waterfowl/shorebirds and TES habitat and to provide the public with interpretative, educational, and recreational opportunities compatible with water bird production.

Management objectives include:

- *Strong emphasis on wildlife management opportunities in Blanca Wetlands and Mishak Lakes areas.*
- *Preserve cultural resources.*
- *Emphasis on public recreation opportunities and interpretive trails (including handicap accessibility) in the Blanca Wetlands compatible with wildlife management.*
- *Seasonal limitations to OHV and mechanized travel.*
- *Implement annual visitor restrictions to minimize human impacts to wetlands/ ecosystem.*
- *Maintain service roads to meet water bird production goals and infrastructure.*

- *Continue the agreement with The Nature Conservancy for their management of the Mishak Lakes area, which emphasizes wildlife habitat conservation/ enhancement.*

2. Elephant Rocks ACEC TMA

The Elephant Rocks ACEC TMA is named for the local description of the rock formations. These formations are large rounded boulders of varying sizes in a variety of groupings formed of compacted volcanic ash and cinder. Elephant Rocks is located southwest of the community of La Garita. It can be reached from La Garita by county road 38A, which is the eastern boundary of the TMA. The west boundary is the RGNF. This is a very small TMA interspersed with private property.

This area is valued for its scenic and visual perspectives. Traces of the Old Spanish Trail can be seen. This area is generally accessible during winter and experiences warm, mild weather in the winter.

The ACEC designation has not prevented significant user-created route proliferation. The route density in this TMA falls within the range of four to eight miles per square mile. Illegal dumping and graffiti vandalism in this area are recognized management problems that BLM is making efforts to control.

This is a popular area for rock climbers and mountain bikers. A housing subdivision is being developed northwest of the TMA. The sensitive plant species, rock-loving neoparrya, occurs in this TMA. Rock collecting has been a historic use in the area.

The DFC is the protection of unique geological, scenic, visual, special status plant values, recreation, and other significant natural resources.

Management objectives include:

- *Seasonal limitations to OHV travel.*
- *Decrease route density while maintaining public access.*
- *Improve the aesthetic recreational opportunity and protect geological resources.*
- *Eliminate access to rock collecting sites.*
- *Preserve traces of the Old Spanish Trail.*

3. Alamosa River TMA

The Alamosa River TMA is the largest TMA (90,082 acres) and is located six miles southwest of Monte Vista. The west boundary is the RGNF and the Hot Creek State Wildlife Area. This TMA runs south to the Los Mogotes ACEC, which is five miles southwest of La Jara. A portion of this TMA in the form of a small group of tracts extends so far south as to be two miles from the New Mexico state line. The eastern boundary consists of private lands and the northern boundary is Rock Creek.

The area is known for its quality winter wildlife habitat and populations. Numerous big game resident populations exist. The area varies from greasewood/grassland flats to

rocky/rugged foothills with piñon/juniper canopy. Numerous drainages flow from west to east across the TMA. Many private land tracts and some subdivisions are checker boarded throughout the TMA. Many of the routes across public lands enter and become RGNF routes.

The Hot Creek State Wildlife Area is located near the middle of the TMA. Greenie Mountain is in this TMA and is the high point for the public lands in the San Luis Valley (elevation 11,068 feet). This mountain gets a tremendous amount of use especially during hunting season. In accordance with a DOW request, a portion of this area is closed seasonally to motorized travel due to the elk migration corridor. The seasonal closure area is adjacent to the Monte Vista Wildlife Refuge to the east of the TMA.

The DFC is to maintain quality wildlife habitat and manage the area for dispersed recreation opportunities.

The management objectives include:

- *Reduce route density while maintaining public access.*
- *Close, relocate and/or redesign roads for riparian and resource protection along Alamosa River.*

4. Limekiln TMA

The Limekiln TMA is located west of Monte Vista. U.S. Highway 160 is the northern boundary, the RGNF is the western boundary, Rock Creek is the southern boundary and private lands form the eastern boundary. U.S. Highway 160 creates direct, easy access to this TMA.

This TMA fits in a 5th level watershed and analysis was completed on that basis. This was unusual and contributed to significant efficiency in analysis. The Limekiln TMA is rolling foothills and rocky rugged mesas and ridges. Vegetation is grassland, sagebrush, shrubs, and piñon/juniper canopy. This is a significant wintering area for big game populations and raptor habitat. An extreme jeep route/play area is part of this TMA. The old Hathaway Stone Quarry, which was used to quarry native rock for buildings in the area, is located in this TMA. Numerous cultural sites exist.

This is a very popular dispersed recreation area for Monte Vista, Alamosa, and Del Norte. The topography lends itself to windbreaks making this a mild weather area in the winter. Heavy use occurs on all routes from hikers, horseback riders, mountain bicycles, and 4WD sightseers on a year-round basis. This TMA is subject to route proliferation. Several mountain biking trails start on the public lands and enter the RGNF. There is an interpretative site for the Old Spanish Trail and at several locations the wagon tracks can be seen. Housing subdivisions on private land are proposed for development adjacent to and within the TMA, but is contingent on whether water can be located by drilling. This area contains moss rock sites which are available to motorized access. This area would provide collection sites that are being depleted in other areas.

The DFC is to maintain quality wildlife winter habitat, manage dispersed recreational opportunities, and enhance non-motorized recreation.

The management objectives include:

- *Protect critical winter wildlife habitat and raptor habitat.*
- *Reduce route density while maintaining public access.*
- *Delineate a designated extreme jeep route system in the Hathaway Stone Quarry area.*
- *Manage appropriate dispersed/undeveloped recreation opportunities.*
- *Preserve cultural resources (including traces of the Old Spanish Trail/rock art sites/Hathaway Stone Quarry).*
- *Maintain access to moss rock sites.*
- *Reduce motorized/non-motorized user conflicts.*

5. Lower Saguache TMA

The Lower Saguache TMA is bordered on the north by the RGNF. Private property borders the TMA on the east, south and west. Colorado State Highway 114 and U.S. Highway 285 run along the southern portion of the TMA. The community of Saguache is located just to the south. A portion of the TMA is located south of Saguache Creek, approximately three miles southwest of Saguache and is bordered on the north by private property and on the west/south by more of the RGNF.

This TMA is characterized at its lower elevations by flat limy bench short grassland dominated by blue grama, bottlebrush squirrel-tail, and winterfat. As the elevation increases in the foothills a vegetative canopy of piñon/juniper is added and once the more mountainous terrain is reached, ponderosa pine and Douglas fir dominate the over story, while the understory vegetation is dominated by mountain grasses. Various shrub species are interspersed throughout this elevational gradient.

The TMA is primarily utilized for grazing, local recreation, and firewood gathering. Numerous routes leave the highways and cross public lands before becoming RGNF routes. Several hunting camps maybe found during hunting seasons. Many deep, long drainages originating on the RGNF cross public lands before entering Saguache Creek. Illegal dumping is a problem due to the proximately to Saguache. Several make-shift target shooting sites occur off the more primary routes.

The DFC is to maintain critical winter wildlife habitat, manage dispersed recreation opportunity, and promote non-motorized recreation (e.g., mechanized and foot/horse recreation).

The management objectives include:

- *Reduce route density while maintaining public access.*

- *Develop route designations which address illegal dumping.*

- *Allow appropriate dispersed and undeveloped recreation opportunity.*

6. McIntire/Simpson TMA

The McIntyre/Simpson TMA is a very small TMA made up of two ranches purchased by the BLM (in 1995 and 2001, respectively) due to their unique high value riparian/wildlife habitat. This TMA is located seven miles east of Sanford and 11 miles south of Alamosa on the Conejos River and can be reached by traveling south from Alamosa on the River Road.

The historic McIntyre governor's mansion is located on the McIntyre property and Pike Stockade is adjacent to the Simpson property. The large producing McIntyre Spring contributes significant water to the Conejos River. The BLM sensitive and State Species of concern fish species Rio Grande chub is located in McIntyre Spring. The wildlife/riparian habitats are excellent for rearing waterfowl and other wildlife species. The largest population of breeding pairs of southwestern willow flycatchers in Colorado is located in this TMA. There is a large bald eagle winter roost site along the Conejos River. The only known San Luis Valley population of yellow-billed cuckoos resides in the cottonwood gallery.

An integrated activity plan was completed in 1995 that required a seasonal closure to all public use from October 1 to February 15 on the McIntire Springs property. This action focused on the bald eagle rockery. The decision did not apply to the Simpson property as that property had not yet been purchased.

The DFC is to preserve waterfowl/TES habitat, develop interpretation, education, and public recreation through non-motorized opportunities.

The management objectives include:

- *Maintain and improve waterfowl habitat.*
- *Develop appropriate non-motorized opportunities.*
- *Protect National Register eligible cultural resources, McIntyre Ranch, Simpson Ranch, and Pike Stockade (state).*
- *Maintain seasonal limitation on public uses of the McIntire Springs property.*

7. Los Mogotes ACEC TMA

The Los Mogotes ACEC/TMA is located eight miles southwest of La Jara. It is located adjacent to and on the boundary of the Alamosa TMA; the RGNF is located on its western boundary and private property along the Conejos River forms its southern boundary.

This area was designated as an ACEC due to the critical winter range for big game species. Mountain plover, a BLM sensitive bird species, nests in the TMA.

The DFC is to protect and enhance critical wildlife winter/birthing habitats, special status plant values/TES habitat, and reduce route density/remove duplicate routes.

The management objective is:

- *Restrict use to designated roads and trails in order to reduce route proliferation and close duplicate/user-created routes of low recreational value to reduce route density.*

8. Ra Jadero ACEC TMA

The Ra Jadero ACEC/TMA TMA is a very small, remote TMA (3,837 acres) and is located 15 miles southwest of La Jara. This ACEC was designated to protect the rare plant *Astragalus ripleyi*.

The DFC is to reduce route density and remove duplicate routes, to protect unique special status plant values/TES habitat, as well as other significant natural resources, and to restore soil health.

The management objective is:

- *Establish seasonal limitations to OHV travel and restrict use to designated roads and trails.*

9. Tracy TMA

The Tracy TMA is one of the larger TMAs (46,058 acres) and is located west of U.S. Highway 285 (a variable distance of one to four miles from the highway) with private property between the highway and the TMA. The RGNF is the western boundary, the private property along Carnero Creek forms the southern boundary, and the Tracy Ridge formation is the northern boundary. Several large tracts of Colorado State Lands are intermingled throughout this TMA. The Rio Grande Canal is along the eastern boundary.

This TMA contains a wide variety of soils, topography, vegetation, and concerns. This TMA vegetation is characterized in the east by limy bench range site containing short grassland dominated by blue grama/bottlebrush squirreltail/winterfat. Moving up in elevation into the foothills the characteristic vegetation is mixed grass and piñon/juniper over story. Higher yet, approaching mountainous ridges and drainages, the vegetation is characterized by mountain grasses such as sheep fescue and an over story of ponderosa pine and Douglas fir. This area contains significant year-round wildlife habitat. Large numbers of big game species winter in the TMA. Peregrine falcons and ferruginous hawk, sensitive species, nest in the area.

The TMA is primarily utilized for grazing, local recreation, rock collecting, and firewood gathering.

The lower elevations are usually free of snow in the winter and as a result are used by a number of local non-snow dependent winter recreationists (e.g., hiking, birding, mountain biking, OHV exploration, etc.) Intermingled amongst the numerous drainages are residential subdivisions and private in holdings. When these in holdings are located at the lower snow-free elevations, the combination of factors has led to routes

proliferating (radiating) out from these in holdings. Routes of all descriptions transect these areas and many of these routes have become local access routes to the RGNF. The Old Spanish Trail runs south to north across lower portions of the TMA.

The DFC is to improve critical winter wildlife habitat, manage dispersed recreation opportunity, and secure long term easements and right-of-ways (ROWs) across private property.

The management objectives include:

- *Preserve traces of the Old Spanish Trail.*
- *Locate and develop a quiet use area.*
- *Reduce route density by addressing route proliferation/hunter proliferation of routes.*

10. Penitente Canyon TMA

The Penitente Canyon TMA is three miles west of La Garita off of county road 38A. The TMA is a SRMA. This TMA contains the only developed BLM campground in the San Luis Valley. The western boundary is the RGNF, private property along Carnero Creek forms the northern boundary, and other private lands form the eastern and southern boundaries.

The campground and surrounding area receives very significant heavy public use year-round. The campground was developed to provide services to the rock climbers who come to the area from around the world. Horseback riding and bicycling have become very popular in recent years and several trails have been constructed. Many additional non-motorized trails have been created by the public due to the high demand.

This area has mild winter weather, which encourages high recreation use during the winter months. The rock climbing tapers off during the hotter portions of the summer. The high levels of non-motorized use have created some user conflicts. The TMA contains important winter habitat for big game populations.

There is a historic site identified from a rock painting in the canyon.

The DFC is to promote non-motorized recreation, reduce route density, and remove duplicate routes.

The management objectives include:

- *Preserve traces of the Old Spanish Trail/wagon tracks/rock art.*
- *Reduce user-created motorized and non-motorized trails.*
- *Maintain access to the developed recreation sites.*

11. San Luis Creek TMA

The San Luis Creek TMA lies along the San Luis Creek from Villa Grove northwest to Poncha Pass. This TMA is less than a mile from Villa Grove and is traversed down its middle by U.S. Highway 285, which runs southeast to northwest through it. The RGNF borders the northern, western, and eastern boundaries. The Sangre de Cristo Wilderness is located along the eastern boundary. The private lands surrounding Villa Grove and Kerber Creek create the southern boundary.

This TMA is comprised of two 5th level watersheds. The San Luis Creek TMA contains a wide variety of high quality wildlife habitat. Populations of deer, elk, bear, bighorn sheep, turkey, and game birds reside in the TMA. Numerous mountain streams flow off the RGNF onto public lands and eventually irrigate fields or flow to the San Luis Creek. The mosaic of habitat includes aspen, gamble oak, low elevation and mountain shrubs, sagebrush, introduced grass seedings, riparian vegetation, and several native grass communities. The entire TMA is critical wildlife winter habitat.

Both sides of the valley grade rapidly from relatively flat plains into extremely steep rugged, rocky, and rough mountains. Dispersed camping occurs just below the very steep forested RGNF/wilderness areas. The Sangre De Cristo Wilderness on the north and east is a major area of non-motorized/non-mechanized use which begins on the adjacent public lands. The area to the south and west on the other side of Highway 285 though not a wilderness is very popular due to the close location to Salida, motorized access on the RGNF next to step timbered areas which can be accessed only by foot or horseback. The Poncha Pass Loop at the Poncha Pass and the Decker Creek area receive very heavy year-round use from Poncha Springs and Salida. Uses include snowmobile, ATV, 4WD, and camping. Many of the routes found become RGNF access routes. The TMA is characterized as having one of the highest densities of dispersed campsites and highest hunting demands in the San Luis Valley. An area near Poncha Pass between Dorsey and Decker Creeks is particularly impacted by route proliferation. Much of the snowmobile and ATV use is cross-country, which often results in resource damage.

A small population of Gunnison sage-grouse, a BLM sensitive species, is located in this TMA. There is a popular launching site for hang-gliding north of Hayden Pass.

The DFC is to maintain and improve fisheries/riparian, critical winter wildlife and TES habitat, manage for dispersed recreation, and promote non-motorized recreation.

The management objectives include:

- *Reduce route density.*
- *Maintain access to Villa Grove Turquoise Mine.*
- *Improve interpretation, education, and signage.*
- *Secure easements and ROWs across private property.*
- *Evaluate and manage snowmobile trails/use areas.*

12. Cumbres and Toltec Railroad Corridor ACEC TMA

The Cumbres and Toltec Railroad ACEC was designated to protect the view shed for this historic railroad which runs from Antonito, Colorado to Chama, New Mexico. The

railroad is owned jointly by the states of Colorado and New Mexico. It was determined that the VRM classification (Class II) was of critical importance for the railroad's financial stability. This is to protect the historic cultural resources in context with the railroad and the VRM classification. The TMA is located three miles southwest of Antonito and is oriented along a northeasterly-southwesterly direction to the New Mexico state line.

The topography on public lands is open flats and low rolling hills with associated vegetation and wildlife. Recreational use is low due to the small size of the ACEC and open terrain. This open terrain allows excellent scenery viewing for the train passengers.

The DFC is to maintain and protect unique historic values, visual values, and wildlife habitat.

The management objectives include:

- *Strict conformance to VRM class objectives.*
- *Protect historical and visual values.*
- *Protect National Register eligible cultural resources for Cumbres & Toltec Scenic Railroad.*

13. Villa Grove TMA

The Villa Grove TMA is divided into two smaller TMAs with a few separate land-locked scattered tracts. The southwest unit is located two miles south of Villa Grove. The southeast unit is located four miles to the southeast along the Sangre de Cristo Mountains, south to an area north of the Luis Maria Baca Land Grant in the vicinity of Crestone. Several scattered tracts are associated in this portion. Most of the boundaries are with private property. The west boundary of the southwest tracts is the RGNF. The east boundary of the southeast tracts is the RGNF, which for most of the length is the Sangre de Cristo Wilderness.

The Villa Grove TMA is made up of three 5th level watersheds combined. The topography is for the most part a flat, if not gradually sloping, grass/shrub land. There are a few areas on the east portion that gradually progress into the foothills, but as is often the case adjacent to the Sangre de Cristo Mountains, most areas are flat to the edge of the mountains and then immediately and sharply increases into the very steep, rugged, rocky and mountains that characterize this range.

Several RGNF trailheads exist on the public lands. The area around Crestone receives high recreational use (both motorized and non-motorized) year-round and the RGNF has two campgrounds near that community.

Most of the streams on the east side of the TMA are diverted for irrigation. This TMA is important winter habitat for mule deer, elk, black bear, and bighorn sheep. A large population of antelope resides in the TMA on a year-round basis. Rio Grande cutthroat trout populations exist in streams on public lands and in the RGNF. Rio Grande chub occur on private lands.

The DFC is to preserve mountainous and scenic landscapes, maintain/improve fisheries/riparian areas, and maintain/improve critical winter wildlife and TES habitat, manage dispersed recreation, and promote non-motorized recreation.

The management objectives include:

- *Reduce route density west of U.S. Highway 285 and remove duplicate routes.*
- *Secure easements and ROWs across private property.*
- *Evaluate and manage snowmobile trails/use areas.*

14. Sangre de Cristo TMA

The Sangre de Cristo TMA is located west, southwest, and south of the Great Sand Dunes National Park on Highway 150 and Lane 6. This TMA consists of several blocked and scattered tracts and includes three sets of tracts that can only be reached from Lane 6 Road and are located seven and one-half miles west of the Lane 6 and Highway 150 junction. One tract is three miles north of Lane 6 and eight miles west of the junction. Some scattered tracts are included that start just south of the Great Sand Dunes National Park and run along the Sangre de Cristo Mountains. The western tracts are located just north of the Blanca Wetlands Habitat TMA and the southern tracts begin just two to three miles east/southeast of that same unit. These tracts are mostly surrounded by private property. The eastern-most tracts border Highway 150 to the west and the Sangre de Cristo Mountains to the east, which includes the Sangre de Cristo Wilderness. Several user-created routes have been created to reach the adjoining RGNF, which is located immediately to the east.

The TMA has a wide variety of topography and vegetation. The flat areas contain greasewood and vegetated sand dunes. The eastern edge, which is located just west of the RGNF are in the foothills and are dominated by sagebrush and piñon/juniper overstory. The areas adjacent to the RGNF have a much steeper incline and begin to contain mountain shrubs and grasses.

This TMA contains the Como Lake Road to Mount Blanca and is the only public access to Mount Blanca, a 14,000 foot mountain. Two chaining actions have taken place in the past and were performed to provide habitat for bighorn sheep and elk.

The DFC is to preserve mountainous/scenic landscapes, develop non-motorized access, and manage dispersed recreation.

The management objective is:

- *Reduce route density.*

15. Upper Saguache Creek TMA

The Upper Saguache Creek TMA is located in the Saguache Creek drainage where it turns south off State Highway 114, approximately 21 miles west from Saguache. Private

property along Saguache Creek splits the TMA down the middle and the RGNF surrounds the TMA on three sides.

This TMA contains valuable wildlife winter habitat. It is especially important for mule deer and elk. Sheep Creek and Saguache Creek provide important riparian habitat and raptor roosting and foraging areas.

The DFC is to maintain and improve fisheries and riparian areas, critical winter wildlife habitat, and manage for and promote dispersed non-motorized recreation.

The management objectives include:

- *Reduce route density.*
- *Evaluate and manage snowmobile trails/use area.*

16. Trickle Mountain TMA

The Trickle Mountain TMA has the same boundary as the Trickle Mountain OHV Plan boundary. The Trickle Mountain ACEC is a smaller unit (39,136 acres) inside the OHV Plan boundary. The ACEC was established for wildlife, big game winter habitat protection (particularly mule deer, elk, antelope and bighorn sheep), and is important raptor foraging and nesting habitat. The north, south, and west sides are bordered by the RGNF. The private property along Saguache Creek and Highway 114 split portions of the unit. Five additional private property holdings along important north/south creeks split portions of the TMA into smaller blocks.

Access and travel has been restricted in accordance to the OHV Plan since its implementation. A portion of the Old Spanish Trail lies in the TMA and a large cultural site is present. This TMA contains several drainages with trout fishing streams which feed Saguache Creek.

Trickle Mountain and Hoagland Hill are high elevation features. The topography is rugged and rocky with high flat mesas and moderately steep drainages and very thin fragile soils. This is important wildlife and raptor habitat and several populations reside and winter here. Many deep, long drainages originating on the RGNF cross the public lands before entering Saguache Creek.

Many of the BLM routes provide primary access to RGNF routes and are used for hunting, fishing, camping, and other recreational activities on public lands and the RGNF. These routes are important in that they allow access into the remote portions of the forest. Several hunting groups/camps maybe found during the various hunting seasons. Sergeants Mesa containing Soldiers Stones is located by access routes. Several important cultural sites are located in this TMA. The TMA is primarily used for grazing, hunting, local recreation, some moss rock collection occurs, and firewood gathering.

The DFC is to protect and enhance big game, non-game, and raptor species, other significant resource values, special status plant values, and continue the implementation of the Trickle Mountain OHV Plan.

The management objectives include:

- *Preserve traces of the Old Spanish Trail.*
- *Protect cultural properties in the Alkali Spring area.*
- *Maintain access to moss rock collecting sites.*

17. Rio Grande Canal TMA

The Rio Grande Canal TMA is located off county road 38A four miles south of La Garita. This TMA has flat to gentle rolling terrain and is characterized by short grass vegetation composed of blue grama, bottlebrush squirreltail, and winterfat. County road 38A is the western boundary, county roads E and D5 are the northern boundary, and private property east of the Rio Grande Canal make up the eastern and southern boundaries.

The Old Spanish Trail runs south to north. Critical winter wildlife habitat and a substantial antelope herd reside year-round. Illegal trash dumping is a serious concern due to the ready access into this TMA and the amount of scattered homes and subdivisions.

The DFC is to enhance critical winter wildlife habitat and manage dispersed recreation opportunity.

The management objectives include:

- *Reduce route density.*
- *Preserve traces of the Old Spanish Trail.*
- *Reduce illegal trash dumping.*

18. San Luis Hills ACEC TMA

The San Luis Hills ACEC TMA is located four miles east of La Jara, toward the Rio Grande River, and then south to County Road V. The primary purpose for the ACEC designation was to protect the Flat Top Mountain wetlands, big game habitat, and special status plant values. Flat Top Mountain provides raptor nesting sites.

This TMA is a rolling, very dry, high elevation desert with few live water sources. Considerable bare ground exists between plants, which are predominately rubber rabbitbrush, blue grama, Indian ricegrass, and some big sagebrush. The San Luis Hills lay southwest to northeast across the northern portion and then cross the Rio Grande into Costilla County. A portion of the Rio Grande Corridor Plan identified routes for limitations or closures, which were considered and incorporated as appropriate as part of this planning effort. The public uses of this TMA primarily consist of rock climbing and rock hounding in the Flat Top Mountain area. Flat Top Mountain (2,000 acres) is closed to OHV use.

The DFC is to maintain and improve the quality of the ACEC through route reduction on that portion of the area not including Flat Top Mountain, critical winter wildlife habitat, special status plant values, and improve management of ATVs.

The management objectives include:

- *Protect significant natural values.*
- *Consider open areas as appropriate locations are identified.*
- *Remain in compliance with Rio Grande Corridor Plan.*
- *Manage human activities (e.g., rock climbing) in the Flat Top Mountain area in order to minimize impacts to raptor nesting.*

19. San Luis Hills WSA TMA

The San Luis Hills WSA/TMA is located nine miles southeast of La Jara. It covers the majority of the Piñon Hills, which for the most part is a rather flat mesa. Few routes ever existed due to the nature and construction of the mesa, which for the most part prevented public motorized access. The John James Canyon provides some gradient access to the WSA and is not open to motorized or mechanized access (closed area).

Vegetation is very sparse and consists of desert shrubs and cactus. The soils are thin and undeveloped. The primary concerns include maintaining the wilderness characteristics, improving the backcountry setting, and enforcing the John James Trail restrictions. The WSA contains critical winter wildlife habitat.

The DFC is to maintain wilderness characteristics (in accordance with the TMA's WSA determination).

The management objectives include:

- *Continue the area closure to OHVs.*
- *Maintain the integrity of John James Trail.*
- *Maintain the wilderness characteristics.*
- *Enhance non-motorized and non-mechanized recreational opportunities that would maintain the remote backcountry setting.*

20. San Luis Hills TMA

The San Luis Hills TMA is located east and south of the San Luis Hills ACEC and WSA TMAs and contains public lands to the New Mexico state line. The topography and vegetation are similar to the adjoining TMAs. The eastern portion consists of tracts of land between the Rio Grande River Corridor and the other TMAs. The southern portion contains the South Piñon Hills, Punche Valley, and Punche Arroyo.

This TMA is a major migration corridor for antelope from New Mexico. Many herds of elk cross near Highway 285. The TMA provides critical winter wildlife. This TMA contains a feral horse herd.

The motorized access has been extended into the San Luis Hills WSA, which has become a serious issue due to erosion and the degradation of the WSA attributes.

This TMA is being studied for the possibility of wind energy development. Illegal dumping is unfortunately a significant issue. There are many illegal dump sites and efforts to clean up and maintain public lands free of trash have met with limited success.

The DFC is to maintain appropriate public access to the Rio Grande Corridor.

The management objectives include:

- *Reduce access to known illegal dump sites.*
- *Reduce access in and around the San Luis Hills ACEC and WSA.*

21. South Fork TMA

The South Fork TMA contains many small, isolated tracts north and south of the Rio Grande from Del Norte to South Fork. Some tracts are bordered on one side by the RGNF. Those tracts that are available to public access generally have access from the RGNF. Access is possible through private property, which historically was not an issue. New owners, fenced private property, subdivisions, and damage to private property by visitors not respecting the private property has led to many of the private property access points and gates being locked and public access denied. Much of the RGNF lands that are adjacent do not have access routes connecting to the public land tracts.

This TMA is comprised of three 5th level watersheds. The tracts vary widely in topography and vegetation. Some are flat or gently rolling terrain and sparsely vegetated. Other tracts are in the foothills and vegetated with piñon/juniper over story, short grass under story, and/or desert and transitional shrub communities. Some tracts are actually characterized as being low elevation mountainous in nature, with vegetation that is more often associated with montane environments. The community of South Fork and the associated subdivisions are placing great pressure on the public lands directly adjacent to that community.

This TMA provides critical winter wildlife habitat for mule deer, elk, and antelope in the area between South Fork and Del Norte. It represents the only area for these animals to winter due to subdivisions and ranchettes, and the high quality of shrubs for forage and cover. In addition to the issues surrounding the maintenance of critical winter range and mitigating for habitat loss due to development, the maintenance of public access through the acquisition of ROWs to the public lands remains a priority.

The DFC is coordinate with communities, subdivisions, and private landowners to provide appropriate recreation opportunities and protect critical winter wildlife habitat.

The management objectives include:

- *If the parcel is isolated, seek to gain public access and manage appropriately.*

- *If no public access is available, routes will be closed or assigned appropriate maintenance and ROW responsibility or maintained by BLM if administrative access is needed.*
- *If parcel has access (including access from RGNF), apply appropriate management.*
- *Work with the South Fork community on nearby tracts to develop open space and non-motorized recreation while protecting critical winter wildlife habitat.*

22. Zapata SRMA TMA

The Zapata SRMA TMA is a block of public lands immediately adjacent to the Colorado State Land containing Zapata Falls and the associated recreation area. The BLM has a cooperative agreement to manage Zapata Falls for the State. It is located two miles south of the Lane 6 and Highway 15 junction. This is seven miles south of the Great Sand Dunes National Park.

The TMA receives a significant number of visitors annually. The proximity to the Great Sand Dunes National Park has increased visitation. There are over four miles of developed mountain bike and hiking trails. It receives significant year-round recreational use. The trail head to South Zapata Lakes on the RGNF is located in this TMA. The county maintains the access road to the Falls Trailhead. Campsites and vault toilets are planned.

This TMA has a completed extensive urban wildland interface fuels reduction project due to proximity to the Zapata Subdivision.

Zapata Falls contains the only population of black swifts in the San Luis Valley.

The DFC is to coordinate with communities, subdivisions, county, state, other agencies, and private landowners to provide additional recreation opportunities.

The management objectives include:

- *Support the development of the recreational opportunities provided with Zapata Falls.*
- *Evaluate improving access to Zapata Falls and the South Zapata Lake trail.*

23. Rio Grande River Corridor ACEC TMA

The Rio Grande River Corridor ACEC/TMA consists of public lands adjacent to the Rio Grande beginning at a point on the river eight miles east of Sanford and following the river south to the New Mexico state line. The Rio Grande Corridor Plan was completed in January 2004 and sets the management direction for the Corridor. Federal legislation recently passed by Congress designated the Corridor as a Natural Area, which would be limited to one-quarter mile each side from the center line of the river. Some access routes have been closed in accordance with the plan. Most access issues were directed by the plan and little flexibility to take other actions is possible.

Two primary issues drive plans for this area: one is public access to the river where cliffs permit and the other is wildlife habitat. This TMA is very important for raptor nesting habitat. The river provides an important watering source for many classes of animals. The Corridor is proposed for designation as critical habitat for southwestern willow flycatcher.

Visual aspects are critical for floaters on the river. The plan calls for the management of the VRM Class I guidelines for the river. Livestock and a feral horse herd are devastating to riparian habitat along the river. Trespass grazing has been a historic problem. Many cultural sites exist along the river. One of the Rio Grande Corridor Plan goals is to develop commercial and non-commercial recreational opportunities.

The DFC is to maintain and improve the natural scenic landscape and healthy water, riparian, and recreational values of the Rio Grande Corridor Plan.

The management objectives include:

- *Provide public access.*
- *Enhance wildlife habitat.*
- *Strict conformance to VRM class objectives.*
- *Protection of essential aquatic and riparian resources.*
- *Enhance recreational opportunities that would maintain the proposed Natural Area designation.*
- *Protect and enhance natural, historic, archeological, and scenic resources.*
- *Provide opportunities for commercial and personal uses.*
- *Minimize illegal grazing.*

IDENTIFIED ISSUES AND CONCERNS

The issues for the SLRA TMP were identified through a public involvement process (see Public Participation section on page 228). Public involvement was achieved in three ways: interviews with affected stakeholders; formal public meetings; and informal meetings with representatives of various interests who were actively involved throughout the planning effort. The purpose of these meetings with the public was to gather input that would assist with this planning process. These parties were not asked for advice on decisions or asked to help make those decisions. In addition, issues and concerns were identified internally through meetings and discussions with BLM managers and resource specialists.

INTERVIEWS:

Interviews were conducted early in the planning process to identify the concerns of affected stakeholders. The interviews were conducted by members of the Front Range Resource Advisory Council (RAC), along with BLM personnel. Nineteen individual stakeholders were interviewed from April through August, 2004. The selected stakeholders included a cross-section of affected users, including individual ranchers, adjacent landowners, and representatives of clubs, organizations, and government agencies that have an interest in how travel on the public lands is managed.

PUBLIC MEETINGS:

Public meetings were held in Monte Vista, Center, Del Norte, Saguache, and Antonito on May 24, May 25, May 27, June 1 and June 3, 2004, respectively. The purpose of these meetings was to gather input for management objectives, DFCs, travel management issues, and what the public thought the TMP should provide including what the route system should look like. Despite extensive efforts to gather public input, the meetings were attended by a total of 43 citizens. In addition to the comments and opinions that were expressed during the meetings, attendees were encouraged to submit written comments. A total of 69 individuals and/or organizations submitted written comments as a result.

A second series of public meetings was held once the DFCs, management objectives, alternative criteria, and route analysis by TMA and alternatives had been developed. These meetings provided the public with an opportunity to comment and make suggestions on the above work. These meetings were held in Alamosa, Saguache, and Monte Vista on May 16, May 18, and May 20, 2005, respectively, and were attended by a total of 55 citizens. In addition to the comments and opinions that were expressed during the meetings, attendees were encouraged to submit written comments at the meeting and prior to June 10, 2005. Again, despite a comprehensive media blitz, including radio announcements, newspaper articles, public announcements, posters, and a letter to the interested public's mailing list, a total of only 77 individuals and/or organizations submitted written comments and/or completed feedback forms for specific routes.

The public meetings were attended in total by 98 citizens and a total of 146 individuals and/or organizations submitted written comments through the process.

INFORMAL MEETINGS:

In addition to the stakeholder interviews and the comments received at the public meetings, BLM personnel communicated and met with individuals and representatives during the public comment period who indicated a desire to be actively involved in this planning effort, including the Jacarilla Apache Nation; representatives of environmental organizations such as the Rocky Mountain Recreation Initiative, Colorado Mountain Club, Sierra Club, Audubon Society, Audubon Colorado, Quiet Use Coalition, Arkansas Valley Audubon Society, The Wilderness Society, Colorado Environmental Coalition, San Luis Valley Ecosystem Council (SLVEC), and Shumei International Institute; representatives of motorized recreation groups such as the Colorado Off-Highway Vehicle Coalition and Blanca Peak 4X4 Club; and representatives of non-motorized recreation groups such as the Backcountry Horsemen of America, International Mountain Bicycling Association, Arkansas Valley Cycling Club, local hikers and bicycle users. Affected holders of grazing permits and ROWs (e.g., power transmission lines, irrigation ditches, radio towers, etc.) were contacted to identify their access needs, and presentations were made to county commissioners.

As a result of public involvement, five key issues were identified for the SLRA TMP:

1. **Providing Appropriate and Reasonable Access** – The comments related to this issue indicate a need to provide public access and travel opportunities that benefit all types of users (recreational and non-recreational; motorized, mechanized, and non-motorized). The

majority of the respondents recognized the need to limit or restrict access where it is necessary to protect important resource values or to avoid conflicts with other uses.

2. **Achieving Compliance** – The comments pertaining to this issue indicate that people are concerned that user acceptance and compliance with new OHV travel regulations will not be easily achieved. Most of the comments related to this issue supported the need for restricting travel to designated routes but recommended that the BLM employ a variety of measures to ensure that the new system will be effectively implemented, including such measures as:

    a. setting priorities for implementing travel management decisions so that the areas that need the most attention are treated first;

    b. maintaining routes so that they are designed to minimize maintenance, maximize safety and functionality, and minimize impacts to resources;

    c. providing on-the-ground signing of designated routes, and installing interpretative kiosks at key locations and informative signs/panels on designated closures;

    d. providing location maps of the designated road and trail system;

    e. promoting acceptable use practices through outreach programs to user groups/venders, such as the "Tread Lightly" and "Leave No Trace" programs, and providing other user education programs/materials that promote low impact travel;

    f. recruiting organized user groups and clubs to help monitor and maintain routes and to promote acceptable practices;

    g. providing adequate BLM personnel to monitor use and enforce travel regulations;

    h. ascertaining adequate funding sources to manage and maintain the transportation system;

    i. developing a program of public education and a method of dissemination;

    j. being as consistent with the RGNF as possible;

    k. closing roads as necessary to lessen wet-season impacts to road stability and condition;

    l. protecting and enhancing visual resources in treated areas (i.e., vegetated treatments and route reclamation);

    m. working with cooperating and other agencies to the extent possible to insure consistency and maximize efficiencies; and

    n. implementing and continuing in a timely fashion a monitoring and maintenance plan.

3. **Abating the Proliferation of User-Created Routes and Cumulative Impacts of OHV Activities** – The comments related to these issues indicate that many people are concerned with the growing amount of OHV use on public lands and the increasing impacts that OHV use is having on the natural resources, especially to wildlife habitat, riparian habitat, and

water quality. Many respondents supported the need to limit motorized and non-motorized access and travel to benefit and protect the overall health and condition of the public lands.

4. **Reducing User Conflicts** – Comments related to this issue indicate that some people are concerned about the conflicts that exist between non-compatible motorized and non-motorized recreation uses and support travel management actions that will better serve the needs of all types of recreation users. Some respondents cited conflicts and safety concerns related to various user types on single track non-motorized trails.

5. **Responding to Population Growth and Increased Use of Public Lands** – A lot of people expressed awareness of the increased amount of use that the public lands have experienced in the last 10 years. They are concerned about the impacts that additional population growth will have on the ability of the BLM to manage even greater uses on the public lands in the future. Many respondents recognized and supported the need to plan and implement travel management actions to meet expected increased uses on the public lands to keep in step with future growth.

These issues will be addressed in this TMP and issues relating to implementation, maintenance, mitigation measures, and monitoring will be further addressed in the document developed after the TMP to address those actions.

DESIRED FUTURE CONDITIONS

DFCs are short vision statements that describe the major goals of the SLRA TMP and that directly respond to the major issues and concerns that were identified through public involvement. There are three overall DFCs and then specific DFCs were identified for each TMA.

1. **Maintain and Improve Public Land Health –** Environmental impacts resulting from access and travel uses on the public lands are improving or moving towards being in compliance with the Public Land Health Standards (see Appendix 4). (Responds to issues 3 and 5.)

2. **Maintain Recreational Access –** Access and travel uses on the public lands are improving or moving towards being in compliance with the Recreation Management Guidelines for Meeting Public Land Health Standards (see Appendix 5) and other applicable recreation management planning documents. User conflicts and safety issues are satisfactorily resolved. (Responds to issues 1, 3, 4, and 5.)

3. **Provide Appropriate and Reasonable Access –** The public lands are served by an effectively managed and maintained system of roads and trails that provides access and travel opportunities for legitimate recreational and non-recreational purposes for motorized, mechanized, and non-motorized users. (Responds to issues 1 and 2.)

DESCRIPTIONS OF THE ALTERNATIVES USED FOR THE ASSESSMENT

Four alternatives were developed to analyze and compare the benefits and environmental consequences that would result under different levels of access and use. Each alternative

represents a defined level of access and travel uses for the routes, as well as identifying the changes in area designations. The alternatives are named:

- Proposed Action Alternative C
- Current Use (No Action) Alternative A
- Minimum Access Alternative B
- Maximum Access Alternative D

Before reviewing the alternatives, the reader should become familiar with the Travel Use Categories that are used in the written descriptions, tables, and maps that are found throughout this document (see Table 4). The Travel Use Categories define the individual routes in terms of the types of uses that are permitted on them.

Table 4: Travel Use Categories

Type of Route	Symbol and Map Color	Permitted Public Uses And Explanations	Route Designation Category
Foot and Equestrian	Closed to Motorized and Mechanized Travel (Red)	Foot, horse	Limited or Mitigate Limit
Bicycle	Non-Motorized Access Only (Orange and Black Dashed)	Foot, horse, bicycle	Limited or Mitigate Limit
ATV and Motorcycle	Limited Motorized Access (Orange & White Dashed)	Foot, horse, bicycle, ATV, motorcycle	Limited or Mitigate Limit
General	Open and Mitigate Open (Green and Dashed Green)	Open to all motorized, mechanized, and non-motorized uses (includes maintained dirt and gravel roads suitable for sedan travel, as well as un-maintained primitive 4WD roads)	Open or Mitigate Open
Non-BLM	Highways, County Roads, Other Routes (Dark Blue)	Open to **street-legal** motor vehicles (i.e., closed to non- street-legal motor vehicles) and other mechanized and non-motorized uses (includes county, state, and federal roads and highways that access BLM lands but do not fall under BLM management jurisdiction)	[Not designated by BLM]
Limited User	Limited to Authorized Users (Light Blue)	Routes not available for motorized access to the general public but may be used for motorized administrative, grazing permittee, utility company and private property purposes. May also allow for public non-motorized access (bicycle, foot and equestrian).	Limited or Mitigate Limit
Closed	Closed (Thin Grey Lines with Round Grey Markers)	A route that is permanently closed to all motorized and mechanized use; non-motorized and non-mechanized use would be allowed (as cross-country travel) unless specifically identified otherwise.	Closed

For the purpose of this document legal public access exists if the route can be legally accessed without trespassing over private lands (i.e., access is provided from county, state, or federal highways or via routes where the BLM or Forest Service has obtained a public easement or ROW).

ACTIONS COMMON TO ALL ACTION ALTERNATIVES

The dramatic increase in route proliferation within the project area since the SLRA RMP was signed has resulted in commensurate increases in resource damage. There are many reasons for the increase in motorized routes, including the combined effects of the lack of specific travel management planning, on the ground management, significant regional population growth, the increase in popularity of OHV recreation and the open area designation that allowed cross-country travel. There were many duplicate routes such as one route on a ridge and one route in the next drainage or a route created over the last decade in each drainage. The visitor's ability to travel cross-country without consideration or knowledge of the impacts to resources created many additional routes. Many user-created motorized routes occurred as one person followed the tracks of another. The use of motorized modes of travel has allowed visitors to enjoy the public lands perhaps longer than they would have in generations past regardless of their age or any physical challenges they may face. A more urban population has resulted in fewer horseback riders and more ATV users. An increase in the power and capability of ATVs allows them to reach places not accessible previously. A population which is more sedentary and not conditioned to walk cross-country has sought out motorized methods to utilize public lands. Individuals seeking to go where no one has gone with a motorized conveyance has caused many user-created routes.

Several actions are common to all action alternatives (excluding the Current Use [No Action] Alternative A). They are:

- ***Change in Area Designations:*** The action alternatives change the area designation of public lands in planning Area #1 from open with some routes falling in a limited seasonal closure in crucial wintering and birthing areas to the area designation of limited. The RMP designated Area #1 as open. Any action alternative by necessity would have to change this designation to Limited. The Limited designation would allow the development of a travel management plan and a route by route evaluation which would not purposeful under Open or Closed designation. The No Action Alternative leaves Area #1 Open as it is in the RMP. An action alternative with an open designation but restricting route access is meaningless as any use would remain legal off of the routes even if the routes were limited or designated in some fashion. Area #2 and Areas #4 through #10 (ACECs) would remain with an area designation of limited and the San Luis Hills WSA would remain with an area designation of closed to motorized and mechanized use. The action alternatives further refine limited area designations for the project area to limited to *designated* roads and trails (rather than limited to existing roads and trails).

- ***Road-Side Use Limitation****:* Pulling a motorized vehicle off a designated route (e.g., for parking, camping, and other dispersed recreational activities associated with limited access points adjacent to the route) would be limited to a single perpendicular distance of 300 feet from the edge of the route (no travel parallel to a route). This policy will be an interim policy until further monitoring can be completed and additional analysis is conducted during the revision of the RMP.

- ***Game Retrieval:*** Motorized use off designated motorized routes (cross-country travel), including game retrieval, would not be permitted.

- ***Seasonal Wildlife Closures:*** Wildlife seasonal restrictions to the motorized/mechanized public would occur in critical winter wildlife habitat[6] from January 1 to April 30. This closure would be adjusted to December 1 through April 30 should the DOW close the late season cow elk hunt. Those routes utilized for commercial, administrative, and private property access will remain available for those uses during the seasonal motorized restriction period. Wildlife seasonal restrictions will be identified in cooperation with the DOW. Further short-term emergency wildlife winter restrictions may be implemented in coordination with DOW should extremely severe winters occur that force the concentration of big game species into what was considered non-critical winter wildlife habitat.

- ***Administrative Use for Livestock Grazing Related Activities:*** Many of the routes in the planning area are identified as limited to administrative purposes. Under this designation, livestock grazing permittees would be permitted to use the routes for management of livestock grazing and movement only from two weeks prior to turning livestock onto the public lands to two weeks after removal of livestock from public lands. Special authorizations could be granted to a permittee outside this time period as needed on a case-by-case basis through the local Field Office Manager.

- ***Horse Gates:*** Horse gates through BLM fences would be authorized by permit only through the local Field Office Manager.

- ***Bicycle Limitations:*** Travel by bicycles and other non-motorized mechanical vehicles would be limited to designated routes only (no cross-country travel).

- ***Foot and Horse Travel:*** Foot and horse travel will still be permitted under all action alternatives, as well as the Current Use (No Action) Alternative A, across all public lands and shall not be limited to designated routes.

- ***Snowmobile Use:*** Snowmobile use would be authorized on designated motorized routes. There will be an open area for snowmobile use near Villa Grove from Kerber Creek on the south and west side of U.S. Highway 285 to Wild Bill Gulch Road and on the north and east side to Raspberry Creek Road. There is a closed area on all routes from Wild Bill Gulch Road to Clover Creek on the south and west and on the north and east from Raspberry Creek Road to the forest boundary. Snowmobile use in the area south and west from Clover Creek to the forest boundary (the Poncha Pass Loop area) will be limited to routes specifically signed and designated for snowmobile use. (See map in Appendix 6.)

- ***Open Areas:*** Two areas are proposed to remain designated as open motorized areas, both of which are in the San Luis Hills TMA. The first area (81.1 acres) is located 1.4 miles south of Antonito off U.S. Highway 285 and 0.4 mile east on road SLH1002. This is north towards the perlite processing plant. The second area (179 acres) is reached via U.S. Highway 285 to

[6] BLM critical winter habitat is identified by BLM in conjunction with DOW as winter concentration, resident population, and concentration areas.

Colorado State Highway 142 east, 7.1 miles through the towns of Romeo and Mannassa, south on BLM Emory Orr Road 5006. The recommendation to keep these areas designated as open was carried through each alternative following recommendations from the public during the scoping process after a determination was made that the areas would not revegetate fully from previous activities, and to allow for focus of ATV and dirt bike use from nearby communities without substantial additional damage to resources.

- ***Emergency Access:*** Motorized emergency access would be available (i.e., in accordance with appropriate federal regulations) throughout the planning area regardless of the area or route designation. When possible, emergency vehicles will attempt to utilize existing routes, however there may be instances where access off-route would be necessary.

PROPOSED ACTION ALTERNATIVE C

The establishment of designated travel uses under the Proposed Action Alternative C, would be guided by, among other directives and statutory requirements, the need to maintain or improve the health of the public lands as defined by the Colorado Public Land Health Standards (see Appendix 4) and BLM's mandate to provide recreation opportunities for the public as required under the Federal Land Policy and Management Act (FLPMA). Some user-created and existing routes would be closed to public use. Other user-created routes would be left open or limited (allowing for limited uses). The user-created routes were not illegal because Area #1 was designated open in the SLRA RMP. Establishing ROWs across some private property lands will be a priority to facilitate public access and loop development.

The Proposed Action Alternative C is to designate a travel system for use by motorized, mechanized, and non-motorized users that would provide for protection of sensitive resources while providing recreational opportunities, commercial, and administrative access.

The routes designated open would be signed on the ground and maps would be prepared for kiosks at primary entry points and for distribution to users. Bicycles and other mechanized vehicles would be limited to routes designated for motorized, mechanized, and identified limited users such as administrative purposes. No cross-country travel would be authorized. A total of 650.9 miles of routes would be available to the public for motorized use. When compared to the Current Use (No Action) Alternative A, this is a reduction of approximately 51% of existing BLM routes. It is estimated that approximately 75% of this route reduction results from closures of user-create routes.

Reclamation of closed routes would be prioritized based on wildlife habitat productivity, resource sensitivity, soil loss potential, cultural resource impacts, or other resource protection needs. The emphasis for natural resource management would be to improve vegetation, hydrology, soils, and water quality across all TMAs through the designation of routes that direct visitors away from sensitive resource areas. This alternative strives to provide for a mix of quality motorized and non-motorized recreation experiences and opportunities.

The Proposed Action Alternative C is designed to provide for access and recreational opportunities within the limits of the lands and resources and to manage recreational impacts and traffic flows within the capabilities of the BLM to maintain and monitor the proposed system of

designated routes. Maps 1 through 8 display the Proposed Action Alternative C and are located on the CD at the back of this document.

Some of the questions asked by the interdisciplinary team for this alternative (as well as the other alternatives considered) included: What are the natural resources being damaged and how badly? What are the larger resource issues and would they be better served by closing or restricting use on this route? Is there a greater need than access? In addition to recreational access uses, are there commercial, private property or administrative needs that should be considered? Would the area provide a quiet use area? If the route was not a trunk line or significant loop, it was evaluated for access to private property, commercial access, permittee needs, and administrative needs. These types of questions assisted the interdisciplinary team to evaluate each area and route to provide a balanced alternative.

Implementation of the Proposed Action Alternative C would include the miles of routes by the respective travel use categories shown in Table 5. When reviewing the data in this table the reader is reminded that each individual travel use category also allows uses by those categories that are listed above it (excluding the limited user category). For example, the ATV category also allows uses by the Bicycle, Equestrian, and Foot categories. A few exceptions were developed to reduce user conflicts between horseback riders and mountain bicycles. The locations of the routes by travel use categories are displayed on the Proposed Action Alternative C Maps 1 through 8.

Table 5: Miles of Routes by Alternative and Travel Use Categories*

Travel Use Category	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Foot and Equestrian	25.7	7.4	21.2	17.3
Bicycle	64.7 Plus (19.3)**	29.1	46.1 Plus (24.1)**	67.4 Plus (13.0)**
Motorcycle	0	0	0	1.8
ATV	8.1	8.9	2.9	25.7
General	642.8	1,319.8	397.4	865.3
Non-BLM	223.4	223.4	223.4	223.4
Limited User	296.6	47.8	376.1	172.5

**This table is not able to show the extent of seasonal closures as they will be variable from year to year based upon the amount of critical winter habitat, which will be determined annually by the BLM in conjunction with DOW.*
***Motorized travel limited to authorized users (utility companies, permittees, administrative, and private property owners for access) and available by bicycle, horse, and foot to the public. These miles are included in limited user category.*

The Proposed Action Alternative C considers recreational needs and access in conjunction with the occurring and potential resource impacts. This alternative allows access and uses that do not conflict with other resource protection while continuing to fully address excess routes and impacts from routes/users on the natural resources. It provided the middle ground between maximum access and minimum access. As routes were evaluated, an effort was made to determine the use level and route condition because during the primary inventory this data was not sufficiently collected. The process identified natural and cultural resource issues and recreational values/needs. Recreational opportunities, commercial, private property and

administrative uses, and resource impacts were identified and evaluated. It was determined if there was a purpose or need for the route. The use level and user type was determined. The type of route was identified. The public uses and impacts from changes in uses were evaluated. The resource impacts were gathered and evaluated for changes if changes to the routes occurred.

The Proposed Action Alternative C designates 650.9 miles of motorized BLM routes in the travel use categories of General and ATV. The Proposed Action Alternative C provides the public an additional 387 miles of restricted non-motorized/non-mechanized access routes (travel use categories of Foot and Equestrian) and 109.7 miles are limited to the bicycle, foot, and equestrian travel use categories. There are 19.3 miles of limited user administrative routes that are open to bicycles in this total. Snowmobile use will be permitted on 619.3 miles of motorized routes, routes designated and signed in the Poncha Pass loop area plus the open cross-country area north and west of Villa Grove. This alternative contains technical 4WD rock crawling routes in the Limekiln TMA. Specific routes in this area would be open for casual and permitted event use. Routes LK23117, LK23118, LK23119, LK23122, and LK23123 were evaluated based upon general motorized use not strictly on access for rock crawling pods (play areas). These routes were designated as mitigated open to allow the general motorized public use and to allow the rock crawler access to pods (play areas). LK23123 is mitigated limit to grazing permittee and private landowners. Routes LK23126 and LK23127 identify rock crawling pods (play areas) and are open to rock crawling activities on a seasonal basis (summer). Access routes LK23120 and LK23121 are closed to rock crawling access and pod (play area) identified by route LK23125 is closed under this alternative (see Appendix 7B).

CURRENT USE (NO ACTION) ALTERNATIVE A

The Current Use (No Action) Alternative A would postpone changes to the management of motorized and non-motorized recreation use until the SLRA RMP is either amended or revised. Area #1 (389,279 acres) would remain open to motorized cross-country travel. It is expected that motorized use will continue to increase on existing routes and that the establishment of additional user-created routes would continue based upon the 26% and 40% growth rate of surrounding communities over the next 15 years. The potential exists for continued route proliferation at a rate at least the same as the population growth. There is the potential for increased rate of growth as surrounding/regional National Forests and public lands managed by the BLM continue to develop/manage/increase travel management planning. This anticipated proliferation of routes would occur legally; as the Area #1 designation under the current designation is open over Area #1(this open area designation permits cross-country motorized travel). This would mean the addition an undetermined amount of user created routes.

A portion of Limekiln TMA has been used for technical 4WD rock crawling trails and play areas and these activities would continue to legally expand unchecked. Soils, hydrological, minerals, potential cultural, and vegetation damage to resources would continue. A lack of funding and staffing has prevented the development of a NEPA document to evaluate this occurrence. The routes involved in contributing to the resource impact are: LK23117, LK23118, LK23119, LK23120, LK23121, LK23122, LK23123, LK23125, LK23126, and LK23127 (see maps in Appendix 7).

In this alternative, 1,328.7 miles of inventoried routes would be available for motorized recreation (travel use categories of General and ATV). Any proposed closures or restrictions of existing OHV routes to prevent resource damage or user conflicts would be reviewed and implemented subject to special rules authorities provided under 43 CFR 8340 - Off-Road Vehicles. Formal proposals for new roads or trails would be evaluated in a site-specific environmental assessment. Motorized cross-country travel would continue to be allowed.

The Current Use (No Action) Alternative A analyzes the effects of continuing under the current area designation of open for most of the planning area. The limited category would continue for the ACECs and closed would remain in effect for the WSA. The route designations would remain as they currently are in Blanca Wetlands Habitat Plan, Trickle Mountain OHV Plan, McIntire Springs property, and the Rio Grande Corridor Plan. The seasonal closures for crucial wildlife winter range would remain in affect. Maps 9 through 16 display the Current Use (No Action) Alternative A.

The restrictions in the Proposed Action Alternative C for road-side use limitation/game retrieval, seasonal wildlife closures, permittee/administrative use, horse gates, bicycle limitations, and snowmobile use would not be implemented under the Current Use (No Action) Alternative A. Routes created since the 2003 inventory would be considered unauthorized user-created routes and be closed. Future closures or restrictions of existing OHV routes to prevent resource damage or user conflicts would be evaluated and implemented as needed through separate individual activity plans or per emergency closure authorities provided under the CFRs. Future development of new routes would be evaluated and implemented through individual activity plan analysis.

Implementation of the Current Use (No Action) Alternative A would include the miles of routes by the respective travel use categories, shown in Table 5. When reviewing the data in this table the reader is reminded that each individual travel use category also allows uses by those categories that are listed above it (excluding the limited user category). For example, the ATV category also allows uses by the Bicycle and Foot and Equestrian categories. The locations of the routes by travel use categories for the Current Use (No Action) Alternative A are displayed on Maps 9 through 16.

The Current Use (No Action) Alternative A would continue to allow motorized uses on 1,328.7 miles of existing routes (0% reduction). Snowmobile use is not restricted to routes and is open cross-country in all areas except in the WSA.

MINIMUM ACCESS ALTERNATIVE B

The Minimum Access Alternative B would provide for minimal motorized recreation opportunities within a limited to roads and trails designation. This would be accomplished by changing the Area #1 designation from open to limited (i.e., motorized vehicle use limited to designated routes). The primary management emphasis would be the protection and enhancement of natural and cultural resource values through a substantial reduction in the travel routes available for motorized use. This alternative was an attempt to close or limit any route without a specific purpose or that was not a system route or a connector route to a Forest Service system route. Bicycles and other mechanized vehicles would be limited to routes designated for

those uses and to open motorized routes (no cross-country travel). Approximately 400.3 miles of routes would be designated and available for motorized recreation (travel use categories of General and ATV). The number of miles available to the public for motorized use would be reduced by about 70% when compared to the Current Use (No Action) Alternative A. It is estimated that approximately 60% of this route reduction would be from the closure of routes created since the ROD for the SLRA RMP. Non-motorized recreation activities would be encouraged and quiet zones would be created where possible. Reclamation of closed routes would be prioritized based on wildlife habitat productivity, soil loss potential, visual impacts, cultural resource impacts, or other resource protection needs.

The Minimum Access Alternative B contains most of the elements of the Proposed Action Alternative C. The significant difference between the two alternatives is that there is more extensive use of the limited route designation, such that more of the routes would be closed to public motorized use and only left open to administrative motorized uses. The level and designation of routes would be further refined to emphasize natural resource management to improve vegetation, hydrology, and water quality across all TMAs through closures or limitations on routes with known or potential resource damage or conflict.

The route system would be further refined causing changes in the designation of routes in the ACECs, including designations made previously in the Blanca Wetlands, Trickle Mountain OHV Plan, McIntire Springs property, and the Rio Grande Corridor Plan. Routes maybe restricted by user and/or transportation type, or a route could be modified from one route designation category to another (Open, Mitigate Open, Limit, Mitigate Limit, and Closed).

This alternative provides a relatively low level of motorized access and motorized recreational uses when compared to the other alternatives. Maps 17 through 24 display the Minimum Access Alternative B.

The Minimum Access Alternative B closes or limits use on every route that did not have a determined purpose related to commercial, administrative or private property use, was a system route or connector to a Forest Service system route, had resource damage occurring, or would potentially have damage in the near future with increased use levels. Some of the questions asked by the interdisciplinary team to assist in formulating a route by route basis for this alternative (as well as the other alternatives considered) included: What are the natural resources being damaged and how badly? What are the larger resource issues and would they be better served by closing or restricting use on this route? Is there a greater need than access? In addition to recreational access uses, are there commercial, private property, or administrative needs that should be considered? Would the area provide a quiet use area? If the route was not a trunk line or significant loop, it was evaluated for access to private property, commercial access, permittee needs, and administrative needs. This alternative would look first at the natural resource issues such as damage and the extent of the damage, as well as any larger resource issue that might be at stake. Route closure or limitation action would be taken. The potential for quiet use areas was assessed and attempted if possible. The routes meeting the general criteria regarding resource damage would be closed or limited as appropriate. The Minimum Access Alternative B would designate 400.3 miles of motorized access routes, consisting of General and ATV travel use categories. The Minimum Access Alternative B provides a total of 91.4 miles of

non-motorized routes, consisting of 67.3 miles in the Bicycle, Equestrian, and Foot travel use categories.

MAXIMUM ACCESS ALTERNATIVE D

The Maximum Access Alternative D would provide for the highest levels of motorized and mechanized recreation opportunity within limited to a roads and trails designation.

Motorized and mechanized recreation would be provided with a wide variety of opportunities as 892.8 miles of routes would be available to the public (travel use categories of General, ATV, and Motorcycle). The total number of routes available to the public for motorized use would be reduced by 33% when compared to the Current Use (No Action) Alternative A. It is estimated that approximately 90% of the reduction is from routes created since the ROD for the SLRA RMP. The emphasis for natural resource management would be to maintain the integrity of existing vegetation with some improvements to condition through closures of routes with resource damage or serious visitor conflict. Reclamation of closed routes would be prioritized based on wildlife habitat productivity, soil loss potential, visual impacts, cultural resource impacts, or other resource protection needs.

This alternative contains technical 4WD rock crawling routes in the Limekiln TMA. Specific routes in this area would be open for casual and permitted event use. Events held in this area would be limited to 50 rock crawling vehicles and require a special recreation permit. Routes LK23117, LK23118, LK23119, LK23122, and LK23123 are access routes for the rock crawling pods (play areas) and for the general motorized public which will be open or mitigated open. Routes LK23120 and LK23121 which are access to rock crawling pods (play areas) will be closed to all uses. Routes LK23125, LK23126, and LK23127 which identify the rock crawling pods (play areas) will be open on a seasonally limited basis for the summer (see Appendix 7C).

The Maximum Access Alternative D contains most of the elements of the Proposed Action Alternative C. The significant difference from the Current Use (No Action) Alternative A is changing the Area #1 designation from open to limited (i.e., motorized travel is limited to designated routes), thereby eliminating cross-country travel. The level and designation of routes would be further refined to provide maximum motorized access and minimum necessary protection of natural and cultural resources. Some of the questions asked for this alternative (as well as the other alternatives considered) included: What are the natural resources being damaged and how badly? What are the larger resource issues and would they be better served by closing or restricting use on this route? Is there a greater need than access? In addition to recreational access uses, are there commercial, private property or administrative needs that should be considered? Would the area provide a quiet use area? If the route was not a trunk line or significant loop, it was evaluated for access to private property, commercial access, permittee needs, and administrative needs.

The route system would be further refined causing changes in the designation of routes in the ACECs, including designations made previously in the Blanca Wetlands, Trickle Mountain OHV Plan, McIntire Springs property, and the Rio Grande Corridor Plan. Routes may be restricted by user type and/or transportation type, or a route could be modified from one route designation category to another (Open, Mitigate Open, Limit, Mitigate Limit, or Closed).

The Maximum Access Alternative D focused on access and travel use designations for motorized, mechanized, and non-motorized uses would be established with a high emphasis placed on providing increased and enhanced recreational access. Some "user-created" and currently motorized routes would be closed or limited in accordance with general and TMA DFCs and objectives. Other "user-created" routes would be left open.

Implementation of the Maximum Access Alternative D would include the miles of routes by the respective travel use categories shown in Table 5. When reviewing the data in this table the reader is reminded that each individual travel use category allows uses by those categories that are listed above it (excluding the limited user category). For example, the ATV category allows uses by the Bicycle, Equestrian, and Foot categories. The locations of the routes by travel use categories for the Maximum Access Alternative D are displayed on Maps 25 through 32.

The Maximum Access Alternative D seeks to provide access for recreation and other purposes provided significant resource damage is not occurring or going to occur. The routes were examined for a purpose and checked for the potential of being a duplicate route. The key thought with this alternative is even without a purpose and need the route could remain open if resource damage was not occurring and did not have a significant potential for occurring. The route was left open if natural or cultural resource damage could be mitigated. A justification had to be present to close the route, otherwise it remained open. Every effort was made to create loops. Special uses were identified if that would allow continued use and reduce damage or conflict. In addition to the questions asked under the Proposed Action Alternative C, questions were asked in an effort to focus the route analysis to address an alternative such as: Can this route be left open without resource damage? Can natural or cultural resource damage or potential damage be mitigated? Is there a justification for closing the route? Can a loop be created? Should a special use be identified that would reduce damage or conflict? The Maximum Access Alternative D would designate 892.8 miles of motorized BLM access routes, consisting of the general, ATV, and motorcycle travel use categories. The Maximum Access Alternative D provides a total of 257.2 miles of restricted non-motorized BLM access routes, consisting of 97.7 miles in the bicycle, equestrian, and foot travel use categories.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM ANALYSIS

Due to the many combinations of possible travel use designations that could be created from the large number of routes (roads and trails), numerous other alternatives could have been developed for this TMP. The three action alternatives adequately address a range of alternatives as required by NEPA. The alternatives brought forward in this environmental assessment (EA) cover a wide variety of options for many of the routes, giving the decision maker the opportunity to select different motorized and non-motorized options for individual routes.

The SLVEC, a group of interested volunteers, suggested two alternatives. The SLVEC spent a considerable time developing and submitting these two alternatives. The "Balanced Travel Alternative" provided for foot/horse use on some routes instead of completely closing the routes. Their "Conservation Travel Alternative" listed the same routes as closed. The two alternatives amount to identical alternatives from the perspective of the administrative BLM travel management process. The public lands are and will remain open to horse/foot traffic unless a recognized maintained trail is to be identified. For this reason, only the Conservation Travel

Alternative was considered. When a comparison of the BLM Minimum Access Alternative B with the SLVEC Conservation Travel Alternative was performed, the result indicated a potential of 334 routes for which the designations did not match with BLM Alternative B, Minimum Access out of the total of 1,600 routes. This was reduced to 92 routes after close inspection of the commercial, administrative, and private property access needs for those 334 routes. Many of the routes could not be closed as suggested in the Conservation Travel Alternative due to access needs for range improvements, utility lines, mining patents and claims, commercial activities, private property owners, or other administrative requirements for which the BLM, county, state or federal governments require access, and for which the SLVEC was unaware and did not take into account in their proposals.

The remaining 92 routes were analyzed by the Interdisciplinary Team in an attempt to determine the potential for incorporation as suggested by the SLVEC into the Minimum Access Alternative B. The remaining 52 routes were not modified due to the following reasons: the preliminary review missed a commercial, administrative, or private property issue; closure of the route in question with previously identified closures for that alternative would have eliminated access to a large area; displacement of users to other areas was estimated to be excessive; other input from publics during scoping pointed out errors in the initial route designation; it was better to leave a route open or limited than closed and cause an alternative route to be re-designated as open or limited; hunting/fishing access issues; and/or closure would have eliminated access to a RGNF route. The Interdisciplinary Team modified 40 of the remaining 92 routes as a result of the SLVEC proposal. The SLVEC Conservation Travel Alternative after thorough consideration was eliminated because it was adequately represented by the Minimum Access Alternative B.

OTHER PERTINENT BACKGROUND INFORMATION

This section contains information pertaining to the procedures, methods, and other considerations that members of the planning team utilized in conducting this assessment.

TRENDS AND ASSUMPTIONS

The following trends and assumptions were considered in assessing continued population growth and increased demands on public lands for recreation and other uses that are expected to occur over the next 20 years:

- There will be an estimated 26% to 40% population growth in surrounding communities over the next 25 years. (Colorado Division of Local Government, State Demography Office. ONLINE July 2004. Available: http://dola.colorado.gov/dlg/demog/pop_cnty_forecasts.html)
    - There will be an increase in traffic use on routes.
    - Residential development of lands adjacent to public lands will increase.
    - Route densities within private lands surrounding public lands will increase.
    - Acres of wildlife habitat on private lands will continue to shrink and become degraded; wildlife will become increasingly more dependent on public lands for habitat needs.
    - Demands for all types of recreation uses will increase.

    - Conflicts between competing recreation use and commercial permitted uses will increase.

- Soil erosion from routes/traffic will increase without proper/adequate maintenance.
- Technological advances will produce mechanized and motorized vehicles that will enable people to go places where they could not go before, which may change planning priorities.
- Technological advances in GPS, computerized mapping applications, and tele-communications will encourage increased off-trail exploration of previously inaccessible areas and reduce the opportunities for primitive experiences.
    - Areas that provide solitude and low levels of use will decrease.
- Illegal activities will increase (e.g., dumping, off-road travel, theft of forest products, fire, violations, drug labs, vandalism, etc.).
- Costs for law enforcement and travel management compliance will increase.
- Costs of maintaining routes will increase as the cost of labor, fuel, maintenance, and machinery increases.
- Parking at trailheads will become more congested.
- Increasing population pressure will result in increasing problems with management of routes unless adequate funding is available.
- Some existing routes that are closed to vehicles will vegetate and naturally reclaim themselves; the route bed will gradually be confined to a narrower tread. Other routes will require reclamation action.
- Increased human activity will increase the potential for fire ignition.
- Motorized uses if left unmanaged during wet periods will increase cumulative resource damage unless restrictions are in place.
- Increased cross country motorized travel under RMP designation would lead to increased disruption of wildlife and degradation of habitat.
- Unmitigated/unmanaged access related activities would adversely affect soil stability, vegetation, and water quality.
- Big game hunter age groups are modifying the type of demand and changing the acceptable hunting experience, causing higher demand for motorized routes as evidenced from hunter surveys, public interviews, and observed hunter characteristics and methods.
- Recreational activities tend to be motorized- and/or mechanized- based.
- There is an increase in bird watching.
- There is increasing use of existing routes for pleasure driving based upon recreationists' interviews and observed occurrences.
- There is an increasing demand for more direct access and more access to motorized recreational opportunities and commercial resources based upon public field office visits and

requests for information and interviews with the public in the field. Several scoping comments supported this demand.

- Motorized access increases opportunities for dispersed camping, target shooting, and hunting more than non-motorized access would.
- There will be an increased demand for information and public relations.
- There will be a need for increased interaction and planning between agencies.
- There will be an increased opportunity to develop partnership and funding/activities with non-governmental public land use organizations.

ROUTE EVALUATION PROCESS

The San Luis Valley Interdisciplinary Team utilized the Route Evaluation Tree Process© to evaluate and designate routes on public lands throughout the project area. The Route Evaluation Tree Process© is a tool designed by Advanced Resource Solutions Inc. located in Cameron Park, CA to assist land management agencies with preparing for and performing route evaluation/designation and compiling data that may be utilized by the agency during analysis and development of the TMP. A detailed description of the Route Evaluation Tree Process© can be found in Appendix 8.

Some routes were subject to previous designation decisions through activity-level planning or were identified as non-BLM routes and therefore were not designated under this recent effort.

PLAN CONFORMANCE REVIEW

The proposed action is subject to the following plan:

Name of Plan: San Luis Resource Area Resource Management Plan (SLRA RMP)

Date Approved: 12/18/91

Decision: Locations of decisions from the ROD are listed with a summary of the decision.

San Luis Valley General Area #1:

- Page 13, paragraph 1-3, third subparagraph: Limited OHV designations in riparian zones.
- Page 15; paragraph 1-18: This is a series of four subparagraphs providing priorities for access easements.
- Page 15, paragraph 1-15: Paragraphs 1 through 3 discuss non-permissible and permissible locations for utility corridors. Utility corridors usually require motorized access.

- Page 15, paragraph 1-16: ROWs crossing riparian areas with impacts will be mitigated.

- Page 15, paragraph 1-17: Public lands are open to ROWs for utilities, roads, etc., and will be evaluated on a case-by-case basis.

- Page 16, paragraph 1-8: Identify and designate access corridors.

- Page 16, paragraph 1-20: The majority of lands in Area #1 will remain open or limited (seasonal, designated roads and trails) to vehicle travel. The WSA will be closed to motorized and mechanized travel. The public is encouraged to stay on roads. Designation of corridors that lead to RGNF, state lands, and private lands will be identified.

- Page 16, paragraph 1-21: Crucial big game winter and birthing areas designated as limited (seasonal) for OHV use.

- Page 16, paragraph 1-22: Manage area west of U.S. Highway 285 for VRM Class III to allow for utility corridor.

- Page 16, paragraph 1-23: Five eligible National Register sites will be closed to OHV use.

Trickle Mountain Area #2:

- Page 18, paragraph 2-4: Limited OHV use and all travel at other times to designated roads and trails. Existing OHV plan remains in affect.

Blanca Area #4:

- Page 20, paragraph 4-3: Limited OHV designations (seasonal and travel restricted to designated roads and trails per CRMAP) to maintain and protect significant values. Travel limited to existing roads and trails.

- Page 20, paragraph 4-4: A seasonal limitation in the ACEC from February 15 to July 15 is established.

Elephant Rocks Area #5:

- Page 21, paragraph 5-2: Limited OHV designations (seasonal limitations and travel restricted to designated roads and trails per CRMAP) to maintain and protect significant values. Travel limited to existing roads and trails.

La Jadero Canyon Area #6:

- Page 22, paragraph 6-2: Limited OHV designations (seasonal limitations and travel restricted to designated roads and trails per CRMAP) to maintain and protect significant values. Travel limited to existing roads and trails.

Los Mogotes Area #7:

- Page 23, paragraph 7-2: Limited OHV designations (seasonal limitations and travel restricted to designated roads and trails per CRMAP) to maintain and protect significant values. Travel limited to existing roads and trails.

San Luis Hills Area #8:

- Page 24, paragraph 8-4: Flat Top Mountain portion of ACEC will be closed to OHV use.

- Page 24: Rest of ACEC limited OHV designations (seasonal limitations and travel restricted to designated roads and trails per CRMAP) to maintain and protect significant values. Travel limited to existing roads and trails.

Rio Grande River Corridor Area #9:

- Page 25, paragraph 9-8: Limited OHV designations travel restricted to designated roads and trails per CRMAP to maintain and protect significant values. Travel limited to existing roads and trails.

Cumbres and Toltec Scenic Railroad Corridor Area #10:

- Page 27, paragraph 10-4: Limited OHV designations (seasonal limitations and travel restricted to designated roads and trails per CRMAP) to maintain and protect significant values. Travel limited to existing roads and trails.

The Proposed Action and Alternatives have been reviewed for conformance as required by 43 CFR 1610.5-3 and were found to be consistent with the 1991 SLRA RMP.

Public Land Health Standards: The Standards are addressed in the appropriate Affected Environment/Environmental Consequences sections.

CONFORMANCE TO STATUES, REGULATIONS, AND POLICIES

The Proposed Action and Alternatives conform to the following statutes, regulations, policies, and guidelines:

FLPMA: In the *Declaration of Policy*, Section 102(a) and 102(a)(8) of the 1976 FLPMA, Congress set forth the policy statement that:

> …it is the policy of the United States 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 archaeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

National Management Strategy for Motorized Off-Highway Vehicles Use on Public Lands: In 2001, the BLM issued a national strategy for providing guidance to *"determine and implement better on-the-ground motorized off-highway vehicles management solutions designed to conserve soil, wildlife, water quality, native vegetation, air quality, heritage resources, and other resources, while providing for appropriate motorized recreational opportunities."*

Instruction Memorandum No. 2004-005: In October of 2003, the BLM through an Instruction Memorandum emphasized policy and provided clarification and additional guidance for management of motorized and other access on the public lands in accordance with existing law, executive orders, proclamation, regulation, and policy. Within this context, this memorandum, states that *"Selection of a network of roads and trails should be performed for all limited areas in each RMP. This requires establishment of a process that includes selecting specific roads and trails within the limited area or sub-area and specifying limitation(s) placed on use."*

Public Land Health Standards: In January 1997, Colorado BLM adopted the Public Lands Health Standards (Standards) in all of their RMPs. The Standards described natural resource conditions needed to sustain public land health and relate to all uses of the public lands. They encompass upland soils, riparian systems, plant and animal communities, threatened and endangered species (T&E), and water quality. Because a standard exists for these five categories, a finding must be made for each of them in an EA. These findings are located in specific resource elements listed below. A copy of the Standards is contained in Appendix 4 and is available for review at the San Luis Public Lands Center in Monte Vista, Colorado.

Recreation Management Guidelines to Meet Public Land Health Standards: In December 2000, Colorado BLM issued Recreation Management Guidelines (Guidelines) to help achieve and maintain healthy public lands as defined by the Public Land Health Standards. These Guidelines are tools, methods, and techniques that can be used by managers to maintain or meet the Standards. A copy of the Guidelines is contained in Appendix 5 and is available for review at the San Luis Public Lands Center in Monte Vista, Colorado.

This TMP is an implementation action (activity level plan) for the OHV designation decisions made in the SLRA RMP. In addition, the guidance that came out of the Blanca Wetlands Habitat Management Plan, Rio Grande Corridor Plan, McIntire property, Trickle Mountain OHV, and San Luis Hills WSA were incorporated into this TMP. Coordination was conducted with the RGNF on consistency with the Forest Plan.

AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION MEASURES

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment

Air quality, while not specifically monitored in the planning area, is considered good to excellent. This is due to the high elevation geographical location, constant wind circulation within the valley, and a sparse human population within the large land mass of the valley. There can occur, on an infrequent basis, an inversion layer during cold calm winter days within the valley towns which traps gases and particles from vehicles, wood stoves, and other sources. This event can cause air quality to decrease until the temperature rises and breaks the inversion layer. The State of Colorado has two particulate monitoring sites within the city of Alamosa, Colorado. The RGNF and the Great Sand Dunes National Park and Preserve do some local monitoring for their information. Air Quality on the RGNF rates among the best in the country as stated in the RGNF FEIS (1996). Ambient air quality standards are achieved. No violations of ambient Air Quality Standards have occurred on the Forest as stated in the RGNF FEIS (1996). The SLRA TMP project area is located within the San Luis Valley, the largest alpine valley in the world, and is bordered on the east side by the Sangre de Cristo Wilderness that is designated a Class II air quality area.

Environmental Consequences

Current Use (No Action) Alternative A: Available routes for use (1,319.8 miles) have not resulted in excessive generation of dust and non-dust particulates as a result of recreational use. Specific mitigation measures have been not been implemented or are not contemplated.

- ***Proposed Action Alternative C:*** The change from open area designation to motorized use limited to designated routes is likely to lead to significant reductions in dust and non-dust particulates being blown from user-created routes. This alternative in relation to Alternative A reduces general motorized routes from 1,319.8 miles to 642.8 miles which could result in a commensurate decrease in the amount of dust and non-dust particulates. If the current use on the 1,319.8 miles were concentrated onto the 642.8 miles, the decrease in the amount of dust and non-dust particulates may be rather small. There would have to be a rather large reduction of the amount of vehicle use on the remaining routes to realize a noticeable reduction in dust and non-particulates. Proposed Action Alternative C should require limited mitigation due to the closing of over 50% of the existing routes. Natural reclamation and restoration of disturbed soils through the closure of routes and the elimination of motorized cross-country travel is expected to significantly reduce the production of dust.

Minimum Access Alternative B: The Minimum Access Alternative B would likely reduce the levels of use and dust due to the significant decrease in use from 1,319.8 miles to 397.4 miles in the number of routes open, improving air quality. Any air quality improvement other than

pollution from dust would be minimal if total use is merely shifted to routes that remain open. Only if users moved outside of the Valley, would a noticeable improvement in non-dust air pollution occur.

Maximum Access Alternative D: This alternative includes a substantial increase in the miles of trail accessible by ATVs, from 8.9 to 25.7. This increase is more than offset by the decrease in the routes open to general motorized use (i.e., from 1,319.8 miles to 865.3 miles). The use and amount of generated dust is scattered over a large general area and occurs year-round with the heaviest use occurring during the fall hunting seasons. A fairly new concentrated use area called the Rock Crawling Area is in the Limekiln TMA. Recreationists with their extreme jeeps and other such vehicles use this area several weekends each year. Air quality may be temporarily lowered during these weekends in this portion of this TMA. Overall due to the reduction in open route mileage and the elimination of the open area designation with the resultant limitation of motorized use to designated routes the project area should experience improvements in air quality (i.e., particularly as it relates to dust).

Mitigation

The following mitigation measures would apply to all alternatives:

- If air quality standards are not met dust mitigation measures including, but not limited to, closure or limitation of use on particular routes would be considered and implemented as appropriate.

CULTURAL RESOURCES

Affected Environment

A wide variety of cultural resources are located within the project area including prehistoric sites dating as early as 11,200 yBP (years before present) and historic sites relating to later mining, ranching, and homesteading activities dating as recent as the mid-20th century. Routes intersect or are in the proximity (within ¼ mile) of approximately 100 cultural sites that have either been determined to be eligible to the National Register of Historic Places or are in the "Needs-Data" category (cultural resources in the "Needs-Data" category require additional information in order to determine historical significance).

Prehistoric occupation included utilization by groups of Paleoindians who seasonally occupied the San Luis Valley and the surrounding foothills and mountains beginning around 11,200 yBP. Folsom Complex occupation, beginning around 10,900 yBP, is rather well represented in the archaeological record. Folsom people focused on hunting *Bison antiquus*. This culture persisted until around 10,200 yBP when this species of bison became extinct. People of later Paleoindian cultures including Agate Basin, Dalton, Hell Gap, Eden, James Allen, and Scottsbluff visited the area until about 7,000 yBP.

After the extinctions of Ice-Age animals, nomadic bands associated with the Archaic Stage occupied the area, again mostly seasonally, from about 7,500 yBP to 1,500 yBP. People adapted to changing climatic conditions by hunting bison, elk, deer, bighorn sheep, and other smaller

animals during the Archaic Stage. There was a demonstrated increase in the use of plant gathering activity during this period.

The Ute people, who are the oldest continuous residents of Colorado, probably arrived in the area around 700 yBP (1,300 AD). The Capote band of Utes inhabited the San Luis Valley in Colorado. By 1873, under the Brunot Treaty, the Utes were removed from the mountains of Colorado and by 1881 they were confined to small reservations in southwestern Colorado and in Utah.

Site types, relating to past Native American populations, include:

1) Open Camp sites, located in open topographic situations, consist of features and/or artifacts indicative of domestic activity. They are defined by the presence of grinding stones, ceramics, and/or fire hearths. Chipped stone tools such as projectile points, scrapers, knives, gravers, and drills are usually found. Numerous waste flakes of stone are usually found.

2) Open Lithic sites, located in open topographic situations, consist of chipped stone tools such as projectile points, scrapers, knives, gravers, and drills. Numerous waste flakes of stone are usually found. No evidence of domestic activity is found. Open lithic sites are by far the most plentiful type of cultural resource in the San Luis Valley and surrounding mountains. The historic significance of open lithic sites is often dependent on the presence of buried cultural deposits.

3) Open Architectural sites, located in open topographic situations, contain architectural features. Those found usually are dry-laid stone structures such as stone enclosures, simple stone alignments, and stone fortifications. Open Architectural are often accompanied chipped stone tools or evidence of domestic activity (grinding stones, pottery, and/or hearths).

4) Sheltered Architectural sites have architectural features but are located in rock overhangs, alcoves, and rock shelters. Sheltered Architectural sites are often accompanied chipped stone tools or evidence of domestic activity (grinding stones, pottery, and/or hearths).

5) Lithic Quarries are locations where there is evidence of the extraction of raw lithic material for the production of chipped stone tools.

6) Rock Art sites consist of symbols either pecked into or painted on rock surfaces. They are generally concentrated on public and private lands in foothill locations near the towns of Monte Vista, Del Norte, and La Garita. Rock images are found adjacent to the Rio Grande in the south-central portion of the San Luis Valley. The rock images are thought to be Archaic, Pueblo, and Ute motifs dating as early as several thousand years to as late as 1890. There are a number of Hispanic-based culture rock images, probably done by sheepherders, dating from the late 1800s to the 1930s.

Historic Cultural Resources: Historic cultural resources found, or with the potential to be found, include sites associated with the following themes: Trading and Trappers 1800-1860,

American Exploration and Expeditions 1806-1920, U.S. Military Posts and Installations 1852-1890, Trails and Transportation 1820-1900, Precious Metals Mining Industry 1860-1920, the Railroad Era 1870 to 1945, Early Farming and Ranching 1840-1890, and Federal Influences 1890-1940.

The route of the West and East Forks of the North Branch of the Old Spanish Trail are located through public and private lands within the planning area. The Old Spanish Trail is a historic trade route which connected the northern New Mexican settlement of Santa Fe with that of Los Angeles in California. The North Branch proceeded into the San Luis Valley and crossed west over Cochetopa Pass to follow the Gunnison and Colorado rivers to meet the Southern Branch near Green River, Utah. Remnants of the trail are found, or have the potential to be found, in the following sub-units: Railroad, Alamosa River, Limekiln, Rio Grande Canal, Penitente SRMA, Tracy, Lower Saguache, Trickle, Upper Saguache, Sangre de Cristo, Zapata, and Villa Grove.

Mining related cultural resources on public lands are found or have the potential to be found anywhere but especially in the vicinity of Bonanza, Saguache, La Garita, and along the base of the Sangre de Cristo Mountains.

Cultural Resource Considerations in Route Evaluation, Designation and Analysis: The process used by the Interdisciplinary Team to evaluate travel routes took into account cultural, historical, and scientific sites and objects protected by the National Historic Preservation Act (NHPA), as well as other specially protected resources. Systematic consideration of mitigation and/or limited access designation addressed resource impacts associated with cultural and other resources.

A geographic information system (GIS) analysis was completed to determine what previously recorded cultural sites intersect, or are within the proximity (within ¼ mile), of all identified route segments. Cultural resources that were determined to be eligible to the National Register as well as those in the "Needs Data" category were included in the route analysis process. Known but as-yet-unrecorded sites and areas considered to have a high probability for cultural resources were considered in the route analysis process.

Potential Impacts of Road Management: It is important to note that the implementation of a travel management system (where motorized travel is limited to designated routes versus the existing open area designation which allows motorized cross-country travel) will serve to better protect cultural resources across a broad landscape. Because fewer areas would be directly accessible by vehicles there would most likely be a significant reduction in looting, vandalizing, and illegal artifact collecting at cultural sites.

Even with a travel management system limiting motorized travel to designated routes, the potential for impacts remains.

- Routes may provide access to cultural resources for looters, vandals, and artifact collectors.
- A number of existing roads are not adequately maintained thereby resulting in the potential for increased erosion-related impacts to cultural sites.

- Direct physical impacts to cultural resources from the use of vehicles are possible. Open camp and open lithic sites can be directly impacted by destruction of the buried cultural content of the site. Open architectural sites, often consisting of stacked rock structure remains, could be directly impacted.

An additional factor that could contribute to potential impacts is that motorized traffic may increase on a specific routes because nearby routes have been closed. Presently, and for the foreseeable future, the level of travel on most unpaved routes through the project area is considered relatively low compared to use on public lands in more densely populated areas; closing nearby routes in those areas with relatively low use will most-likely not result in an appreciable increase in traffic on routes remaining open.

Cultural Resource Inventory: Because of the large number of existing routes that will be designated within the project area the BLM will use a phased approach to complete the inventory, evaluation, and treatment of cultural resources after the TMP is completed. In most cases cultural resource inventories will be undertaken during the implementation phases of the plan in response to planned activities such as road and trail construction, closure, or maintenance. Evaluations of routes to be designated as closed to protect cultural resources are based on existing inventory information.

BLM will determine whether a cultural resource inventory is necessary, and if so, the type of inventory that will be completed. In most cases, route or area closures need not be inventoried unless there is a reasonable expectation that the closure will shift vehicle use into other areas or the closure treatment is ground disturbing, resulting in the potential for adverse effects on historic properties. In most cases, inventories are not required for paved roads, gravel roads, crowned and ditched roads, and regularly maintained roads. If a paved, graveled, and previously maintained route is upgraded or improved a cultural resource inventory will be required. Where inventory is performed, the archaeologist will survey a corridor that extends at least 50 feet on both sides of the centerline of the route. When determining the order of inventory, BLM will place greatest emphasis on the routes for which the type of use is most likely to adversely affect historic properties.

Environmental Consequences

Current Use (No Action) Alternative A: Nearly 390,000 acres would remain open to motorized cross-country travel due to the area designation of open in Area #1. The addition of approximately 437 to 672 miles of routes over the next 15 years is projected. Motorized use would continue to increase on existing routes and the establishment of additional user-created routes would continue. Potential impacts to cultural properties would likely increase dramatically due to the high potential for increased establishment of user-created routes, possibly into culturally sensitive areas.

The closures will restrict access to existing sites in some cases and in others user created routes will not inadvertently go through or near sites creating damage or artifact hunting.

Proposed Action Alternative C: Under the Proposed Action Alternative C the area designation would be changed from open to limited to designated routes. The potential impacts to cultural

properties would be decreased because of the closure of a high percentage of "user-created" routes and the enactment of a limitation to designated routes. When compared to the Current Use (No Action) Alternative A, there is a reduction of approximately 51% of BLM routes. A designated travel system would address the issues of route proliferation of “user-created” routes.

Minimum Access Alternative B: The Minimum Access Alternative B would provide for minimal motorized recreation opportunities that would be limited to designated routes. The area designation would be changed from open to limited to designated routes. The primary management emphasis would be the protection and enhancement of natural and cultural resource values through a substantial reduction in the travel routes available for motorized and/or mechanized use. The potential impacts to cultural resources would be considerably fewer than the Current Use (No Action) Alternative A.

Maximum Access Alternative D*:* The Maximum Access Alternative D would provide for the highest levels of motorized and mechanized recreation opportunity. The potential impacts to cultural resources would be higher than the Proposed Action Alternative C due to the greater number of designated routes. Since travel would be limited to designated routes there would still be an increase in cultural resource protection as compared with Alternative A.

The Proposed Action Alternative C and the Maximum Access Alternative D address the establishment of technical 4WD rock crawling routes in the Limekiln TMA.

Specific routes in this area would be open for casual and permitted event use. Events would be limited to 50 rock crawling vehicles and require a special recreation permit. This rock crawling system includes the following routes: LK23117, LK23118, LK23119, LK23122, LK23123, LK23125, LK23126, and LK23127 (see maps in Appendix 7).

Photo of technical 4WD rock crawling activity on outcrop of volcanic tuff in the Limekiln TMA

A cultural resource inventory of the specific routes proposed for 4WD rock crawling was conducted in October, 2005. This inventory resulted in the recording of one prehistoric heritage resource site (5RN1000) and three isolated finds (5RN990, 5RN991and 5RN992). Site 5RN1000**,** approximately 0.3 acres in size, has been determined to be eligible to the National Register of Historic Places because of the potential for buried cultural material and the presence of culturally and chronologically diagnostic artifacts. Site 5RN1000 should be avoided and protected from all activities with the potential to impact the site associated with the Limekiln Rock Crawling Trail Project. Routes in the rock crawling area may need to be lined with large boulders to prevent traffic from impacting potential sites.

Mitigation

The following mitigation measures would apply to all alternatives:

- If a cultural property is experiencing adverse impacts resulting from the use of a route the BLM San Luis Valley Public Lands Center (BLM-SLVPLC) will immediately take action, such as rerouting traffic or emergency treatment of the site, to protect the property from further damage. A formal site-specific mitigation plan will be prepared after the situation is stabilized in order to assure site protection.

- ***Cultural Resource Monitoring:*** A monitoring program will be instituted to monitor cultural resources intersected by or in the proximity (within ¼ mile) of travel routes in order to determine if travel-related impacts are occurring. If a cultural property is found to be experiencing adverse impacts resulting from the use of a route BLM-SLVPLC will immediately take action, such as re-routing traffic or emergency treatment of the site, to protect the property from further damage until further consultation is complete. If the affected property may be of traditional religious or cultural significance to a tribe or tribes, BLM will consult with the tribe(s) regarding the proposed treatment of the property. Monitoring of "Needs Data" sites will include updating of the site form and a significance recommendation.

CUMULATIVE EFFECTS

A number of cultural resources have been impacted by past activities before laws and regulations were promulgated to protect them, especially cultural sites in rock shelter situations. Other cumulative impacts are associated with past over-grazing and resultant impacts to cultural resources caused by increased erosion. Recreation, especially dispersed camping, has caused impacts to cultural resources in the form of increased compaction and other soil disturbance such as the building of fire pits.

The degree of impacts to cultural resources due to cumulative impacts is not presently known. Further inventory and monitoring will be formulated to help disclose the level of cumulative impacts to cultural resources.

ENVIRONMENTAL JUSTICE

Affected Environment

The San Luis Valley has a large Hispanic minority population and a low income population. The Valley has a rural agricultural based economy and many jobs are of a seasonal basis which limits income potential for individual with those jobs.

Environmental Consequences

Disproportionately high and/or adverse human health or environmental effects would not occur with this plan on minority populations and low-income populations.

FLOODPLAINS, WETLANDS AND RIPARIAN ZONES

This section includes information related to Land Health Standard 2

Affected Environment

The San Luis Valley planning area contains several riparian and wetland vegetative communities that support water, cover, and forage for wildlife species and livestock. Factors that contribute to riparian vegetative diversity include elevation, ecological range sites, soil types, topography, annual precipitation, human influences, climatic changes, and daily temperature fluctuations. Plant communities imitate the variation in the water table, ranging from communities that require perennial saturated areas (obligate species), to those communities that survive in intermittent (facultative), and ephemeral (upland) runoffs. Resources dependent on riparian and wetland assets include drinking water sources, fisheries, terrestrial wildlife habitat, migration corridors, flood protection, commercial ranching, irrigational practices, and recreational resources. Sustaining the health, diversity, and productivity of riparian and wetland resources, while providing multiple uses for present and future generations, is a challenging task for BLM.

The travel management planning area includes lands within watersheds of the Rio Grande, Saguache Creek, San Luis Creek, Alamosa River, and Conejos River. The majority of public lands lie within small watersheds of these major systems. Streams for the most part are ephemeral or intermittent. The planning area includes one 3rd Field, six 4th Field, 42 5th Field, and 160 6th Field watersheds. These hydrological unit codes (HUC) and the name of the major creeks within these watershed are listed in Appendix 9 (Watersheds by 4th-6th Hydrological Unit Codes (HUC)). BLM monitors 76 streams (91 reaches), and 28 springs for Proper Functioning Condition (PFC) (see Appendix 11A) within the HUCs listed in Appendix 9 from 7,544 feet to 11,068 feet elevation. The streams vary in size and stream channel classification. Stream classification is based on entrenchment ratio, width depth ratio, sinuosity, slope, and landform features (Rosgen, 1996). Generally, A channels fall within steep (4-10% slope), entrenched rocky mountain slopes and have low sinuosity 1-1.2. As the stream travels down the mountains there may be B channels (associated with structural contact zones). B channels have a sinuosity >1.2, slope range .02-.039% and width/depth ration >12. Further down slope, C through G channels are present at <2-4% slopes. C channels are located in narrow to wide valleys in well developed floodplains. C channels are moderately sinuous (>1.2) and have width depth ratios exceeding 12. D channels are braided and have a high width depth ratio (>40). E

channels are highly sinuous (>1.5) and have a width/depth ratio <12. F Channels have a sinuosity >1.2 and width/depth ration >12. G channels are essentially gullies with a sinuosity >1.2 and width/depth ratio <12 and no floodplain. F and G channels have high bank erosion and fall early in channel evolution. C and E channels have the most developed floodplain associated with them. B, C, E, and G channels are most common. High flows during spring runoff or summer monsoons on these streams can cause localized sedimentation and erosion impacts. Detrimental impacts within associated floodplains are primarily attributed but not limited to routes that may cross or lie within 30 meters of unhealthy riparian habitat.

All of the watersheds eventually empty into the HUC 3 Rio Grande watershed either through surface or subsurface pathways. The Rio Grande is the largest river in the San Luis Valley. Many other ephemeral stream channels empty into the Rio Grande watershed.

Spring and wetland (lentic[7]) health determination on public lands in the San Luis Valley is based primarily on ocular assessments of hydric vegetation, hydrology, erosion, and hydric soil attributes. Some springs run overland up to two miles and have riparian habitat associated them. These springs are monitored using the PFC method. There are several more small springs that are used for livestock and wildlife. Riparian vegetation is not associated with these springs and monitoring at these locations is carried out via livestock grazing term permit environmental assessments and maintenance inspections.

Wetlands are primarily found in the Blanca Wetlands ACEC, and McIntire/Simpson TMAs, Mishak Lakes, and O'Neal Spring. There are approximately 2,367 acres of wetlands in the planning area (see Table 6). Blanca and McIntire/Simpson Wetlands are partially maintained by irrigation ditches. Other water is available via sub irrigation. Appendix 10 (Wetlands & Monitored Springs in the Project Area) displays the location of the wetlands and springs. Table 10 displays the types of wetlands.

The table in Appendix 11A summarizes the wetland and springs by TMAs, including the riparian monitoring results, alternative comparisons of open motorized routes within 30 meters, and number of motorized routes crossing the channels of the streams and springs.

Table 6: Acres of Springs and Wetlands by TMA

Wetland Name	TMA	Acres
Blanca	Blanca Wetlands ACEC and Sangre de Cristo	1,388
Simpson/McIntire	McIntire Simpson	769
O'Neal Spring	Lower Saguache	2.3
Mishak Lakes	Blanca Wetlands	208
	Total Acres:	2,367.3

[7] "Lentic" means pertaining to or living in still water.

Table 7: USFWS Wetlands and Deepwater Classification for Monitored Wetlands		
Wetland Name	**Wetland and Deepwater Classification**	**Legend**
Blanca	U PUSCh PUSC PUBFx PEMJh PEMJ PEMFh PEMF PEMCh PEMC PEMAh PEMA PABGx PABG PABFx PABFh PABF L2USC L2ABGh L2ABG	**L = Lacustrine** **P = Palustrine** **R = Riverine** **U = Unknown** **2 = Lower Perennial** **3 = Upper Perennial** **AB = Aquatic Bed** **EM = Emergent** **FO = Forested** **SS = Scrub-Shrub** **UB = Unconsolidated Bottom** **US = Unconsolidated Shore** **A = Temporary Flooded** **B = Saturated** **C = Seasonally Flooded** **F = Semi permanently Flooded** **G = Intermittently Exposed** **H = Permanently Flooded** **J = Intermittently Flooded** **h = Diked/Impounded** **x = Excavated** **Example: PEMCh** P = Palustrine EM = Emergent C = Seasonally Flooded H = Diked/Impounded
Simpson/McIntire	U PEMA PEMC PFOA PSSC R3USC PEMF PABF PABH R2USC PEMB	
O'Neal Spring	PEMA PEMB	
Mishak Lakes	U PUSAx PEMJ PEMC PEMA PABFx	

PFC monitoring is conducted on all known perennial and some intermittent streams (lotic[8]) with riparian vegetation. Periodic PFCs on lotic riparian systems are performed in order to understand conditions and determine if management objectives are met. These assessments determine whether riparian habitat is in PFC, Functional-at-Risk (FAR) or Non-Functional (NF). The PFC analysis aids decision-making processes aimed at meeting Standard 2 for the Public Land Health Standards. Standard 2 for Public Land Health is defined as:

> Riparian systems associated with running water and standing water, function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.

A stream in PFC and most streams in FAR condition are meeting Standard 2.

[8] "Lotic" means running water habitat such as rivers, streams and springs (as defined by BLM Technical Reference 1737-9 1993, Revised 1995, *Riparian Area Management*).

The focus of this assessment will be on public lands. This focus is in spite of the fact that there are many miles of streams and acres of riparian habitat on privately owned, state, and other federally managed lands that will benefit by the travel management system. Many of the lotic and lentic sites have water development structures for livestock and wildlife. There are many canals and ditches. This assessment will focus on monitored lotic and lentic systems on public lands. Consideration was given to water development sites, canals, and ditches for providing maintenance access. Although the focus is on public lands, the final route designation will impact not only public lands, but any adjoining lands.

TMAs and their associated monitored stream and riparian reaches, route association and alternatives are listed in Appendix 11A and 11B. Mileage and acreage numbers are based on GIS data that are regularly maintained and updated as new information is collected. Based on data compiled from monitoring results, field reconnaissance and Colorado Decision Support Systems (http://cdss.state.co.us), 124.17 miles of stream are classified as perennial, ephemeral and intermittent (see Appendix 11A). A 30 meter buffer is used due to proper road maintenance practices. A 30 meter vegetation buffer should be adequate to negate nearly all expected impacts from adjacent routes (see Table 12 page 69: Effects of Different Route Treatments on Soil Erosion Based on the WEPP Model). Additional off road resource protection is provided via (43CFR 8365.1-5a Property and Resources). Additional impact to floodplains, wetlands, and riparian zones are not anticipated outside the 30 meter buffer zone from a vehicle pulling off a designated route because of the added resource protection provided in 43CFR 8365.1-51 . The 300 foot policy for dispersed recreation uses will not be further analyzed. This policy will be an interim policy until further monitoring can be completed and additional analysis is conducted during the revision of the RMP. Depicted in the table are miles of stream within 30 meters of routes and number of crossings in the TMA by alternative. There are 26.55 miles of riparian within 30 meters of routes, and 82 stream crossings. The table in Appendix 11A and the map in Appendix 11B identify the latest results of past monitoring and the potential riparian systems that may benefit from the proposed action and alternatives. There are many miles of stream and acres of riparian on non-public lands that are outside the jurisdiction of BLM and are not directly monitored by BLM.

Some of the TMAs have little or no true riparian associated with them. These TMAs include: Sangre de Cristo, San Luis Hills ACEC, San Luis Hills WSA, and San Luis Hills. Where county and other federal roads and private in holdings may influence riparian zones, management direction on alternatives is very limited.

The map in Appendix 12 (Motorized Routes within 100’ of Stream Channels) and Table 11 (Miles of Routes within 30 Meters of Delineated Wetlands) summarize the affected wetland environment by TMA, proposed action, and alternatives.

The majority of riparian and wetland impacts are primarily found in TMAs that have riparian and wetlands within 30 meters of the route or numerous stream, riparian, and wetland crossings. Alternative B will have the greatest percent reduction of routes with 30 meters of riparian and wetland habitat, followed by the proposed action.

Environmental Consequences

The various alternatives may impact the functionality of floodplain, riparian, and wetlands. The action alternatives reduce route miles that may lie within floodplain, riparian, and wetland areas more than the Current Use (No Action). Alternative A would increase the amount of unauthorized user-created routes over time due to the unrestricted travel by the public. Changes in route density within wetlands and riparian areas associated with intermittent and perennial stream reaches that are monitored are depicted in Table 8 and Appendix 15B.

Table 8: Miles of Routes Within 30 Meters of Delineated Wetlands

Wetland Name	Current Use (No Action) Alternative A	Proposed Action Alternative C	Minimum Access Alternative B	Maximum Access Alternative D
Blanca	16.5 open motorized route plus 37.1 motorized administration use only	11.5 open motorized route plus 39.5 motorized administration use only	9.7 open motorized route plus 37.1 motorized administration use only	13.9 open motorized route plus 37.1 motorized administration use only
McIntire/Simpson	1.71 open motorized route	0.07 open motorized route plus 1.38 motorized administration use only	0.07 open motorized route plus 1.20 motorized administration use only	0.25 open motorized route plus 1.20 motorized administration use only
O'Neal Spring	0.06 open motorized route	0.05 open motorized route	0.05 open motorized route	0.05 open motorized route
Mishak Lakes	5.82 open motorized route	0.73 open motorized route plus 0.50 motorized administration use only	0.65 open motorized route plus 0.08 motorized administration use only	1.23 open motorized route
Total	24.09 open motorized route plus 37.1 motorized administration use only	12.3 p open motorized route plus 41.43 motorized administration use only	10.42 open motorized route plus 38.43 motorized administration use only	14.15 open motorized route plus 38.3 motorized administration use only
% reduction of routes within 30 meters of riparian relative to the Current Use (No Action) Alternative A	**0**	**51**	**56.7**	**41.3**

Current Use (No Action) Alternative A: Colorado is one of the fastest growing states in terms of population and recreational attraction. As the majority of routes are open and cross-country travel is still permitted across significant portions of the land in Area #1, floodplains, wetlands, and riparian habitat would likely become heavily impacted. These impacts would be caused by increased travel as well as the development of new routes with increased tourism. These impacts will occur largely unchecked under the current open route and area designations. Increases in use under this alternative and its management protocols would likely:

- Lead to the narrowing and loss of riparian habitat, increasing the impacts of flooding.

- Lead to increased sediment and water runoff.
- Promote stream bank erosion.
- Contribute to poor water quality.
- Decrease habitat for wildlife.
- Lead to lower recreational benefits to the public.
- Convert productive floodplains, wetlands and riparian habitat to barren road surfaces.
- Constrain and divert surface flows.
- Concentrate and accelerate runoff.
- Create a source of toxic pollution.
- Intercept groundwater flows.

Indirect impacts could affect riparian/wetland hydrology and suppress biotic productivity by:

- Increasing/decreasing channel gradients and runoff velocities.
- Accelerating soil erosion and the loss of soil nutrients and fine sediments.
- Dewatering floodplains, wetlands, and riparian areas.
- Trigger site conversion from riparian/wetland vegetation to upland species.
- Reduce organic production and forage yields.
- Impair floodplains, wetlands, and riparian habitat effectiveness for wildlife.
- Reduce base flows, increase peak flows, and flood frequencies.

Because of the relatively high number of routes (with potential for an increased numbers of user-created routes), desired values for meeting Standard 2 on Public Land Health Standards would greatly decrease in all relevant TMAs under the Current Use (No Action) Alternative A.

Proposed Action Alternative C: Of the 1,319.8 miles of routes currently available to the public for generally unrestricted motorized use, 642.8 (48.7%) miles would be designated open to the public without limitations, 98.5 miles (7.5%) would be designated open with some form of transportation limitation, and 296.6 miles (22.5%) would be closed to public use but restricted to administrative use and 417.9 miles (31.7 %) would be closed to all forms of motorized use (see Table 5). Floodplain, riparian, and wetland would be improved and maintained by:

- Seasonal closures limiting motorized recreational access and providing resource protection.
- Maintaining and providing good water quality.
- Allowing responsible recreational opportunities in areas such as wildlife watching, hunting, fishing, quiet, scenic areas, and rafting, etc.
- Improving aesthetics, thereby increasing property value.

- Providing educational opportunities.
- Floodplain, riparian, and wetlands physical structure would be less compacted and hold runoff for longer periods.
- Impaired floodplain, riparian, and wetlands habitat will be reduced.
- Property damage will be reduced by flood activity.

This alternative provides reasonable public access and is moderately resource protective for floodplains, wetlands, and riparian habitat. Riparian protection can be adjusted to serve areas in the most need of meeting Standard 2. This alternative, like alternatives B and D, through the use of adaptive management may allow additional routes to be closed. Although closures would further impact recreational opportunity, such closures would be in recognition of the high priority assigned to riparian management and protection. The Proposed Action Alternative C would protect riparian resources while still allowing reasonable and flexible public recreational opportunities thus meeting BLM commitment to multiple use.

Minimum Access Alternative B: Of the 1,319.8 miles of routes currently available to the public for generally unrestricted motorized use, 397.4 (30.1%) miles would be designated open to the public without limitations, 67.3 miles (5.1%) would be designated open with some form of non-motorized transportation limitation, 376.1 miles (28.5%) would be closed to public use but restricted to administrative use, 611.9 miles (46.4 %) would be closed to all forms of motorized use, and 2.9 miles (.2%) will have limited open motorized use (see Table 5).

This alternative would promote healthy riparian areas by reducing the miles of routes available to public motorized travel. This alternative has the least probability of causing floodplain, wetland, and riparian damage. Floodplain, wetland, and riparian habitat would respond to new growth and regeneration at a faster pace than any of the other alternatives. This has been demonstrated in the Trickle Mountain Travel Management Plan, Dorsey Creek Road Relocation, Rio Grande Corridor Plan implementation efforts. Some of the ways in which the Minimum Access Alternative B would improve floodplain, wetland, and riparian habitat might include:

- Positive changes in stream dynamics and natural sinuosity.
- Vegetation community structures would become stable with floodplain, wetland, and riparian vegetation.
- Allow an occasional healthy disturbance such as high flows.
- Improved and/or increased biodiversity and valuable habitat for wildlife.
- Decreased stream bank erosion and sedimentation.
- Improved water quality and quantity.
- Improved non-motorized recreational and educational opportunities.
- Increased natural quiet use area for the public.

The Minimum Access Alternative B will have the greatest impact to motorized users by affecting the number of motorized and mechanized recreational opportunities. Specific areas that would

benefit from this alternative are too numerous to mention. This alternative would provide management with a greater opportunity for habitat improvement, thus it is the best alternative for allowing floodplain, wetland, and riparian habitat to meet Standard 2 of the Public Land Health Standards.

Maximum Access Alternative D: Of the 1,319.8 miles of routes currently available to the public for generally unrestricted motorized use, 865.3 (65.6%) miles would be designated open to the public without limitations, 84.7 miles (6.4%) would be designated open with some form of non-motorized transportation limitation, 172.5 miles (13.1%) would be closed to public use but restricted to administrative use, 305.7 miles (23.2%) would be closed to all forms of motorized use, and 25.7 miles (1.9%) will have limited open motorized use. Route density would be greater than the other action alternatives, maximizing loops and developing routes with various levels of difficulty. In spite of these improvements in public access this Maximum Access Alternative D would still have fewer impacts than the Current Use (No Action) Alternative A. This is due to the fact that some routes were closed under this alternative and cross-country travel would not be permitted except in two small open areas. Routes closed under this alternative primarily consisted of short spur routes without significant purpose, leaving routes along riparian areas open. Riparian habitat would potentially be significantly impacted in areas where routes cross riparian stream channels. For example, potential impacts might include some of the following:

- Crossings that fragment floodplain, wetland, and riparian habitat causing loss of accessible habitat.
- Vertebrates and invertebrate genetic diversity reductions.
- Reductions in vegetative and animal range.
- Loss of nutrients to floodplain, wetland, and riparian habitat.
- Reductions in vegetative and animal community's assemblages.
- Creation of excessive sediment and water in streams which could then degrade riparian vegetation habitat.
- Weakening of stream bank stability, which could then lead to widening of the stream channel and loss of riparian habitat.
- Degradation of natural stream sinuosity.

Riparian conditions in areas that are FAR would be greatly impacted. Increased access would likely lead to an increase in invasive and noxious species, decrease native hydric vegetation (decreasing stream bank protection), and routes would degrade stream channels by directing stream water away from riparian areas, and increase widening of the stream channel, erosion, and sedimentation. Overall, this alternative would have the greatest negative impact on all accessible riparian areas of the *action* alternatives.

Mitigation

The following mitigation measures would apply to all action alternatives (i.e., Minimum Access Alternative B, Proposed Action Alternative C, and Maximum Access Alternative D):

- Full consideration will be given to the standards for proper route management, construction, operation, and maintenance because these actions critically change floodplain, wetland, and riparian habitat morphology.

- Instigate seasonal closures during wet seasons as necessary.

- Identify potential problems clearly at the onset of any route construction.

- Install culverts and bridges where necessary and in such a manner as to maintain flow direction and gradient.

- Identify and establish reclamation priorities on closed routes.

- Monitor routes for unforeseen impacts due to route designations and establish adaptive management protocols.

INVASIVE, NON-NATIVE SPECIES

Affected Environment

The public lands in the San Luis Valley have been inventoried for invasive non-native weeds over the last seven years by the BLM weed specialist. The inventories have shown that invasive non-native weeds are more common on the private lands than on the public land. The public lands located in the northern part of the project area are generally at higher elevation and are susceptible to invasion by Russian knapweed, black henbane, and Canada thistle, if severe soil surface disturbance occurs. The public lands located in the southern part of the project area are generally at lower elevation and are susceptible to invasion by Russian knapweed, Canada thistle, and hoary crest, if severe soil surface disturbance occurs. The majority of the weeds found throughout the San Luis Valley are associated with roads and range improvements.

The risk of invasive non-native weed invasion increases with greater quantities of routes and/or larger numbers of users. Weed seeds that become attached to and are carried by people, animals, motor vehicles, and construction equipment are a major factor in the spread of weeds. Seed imbedded in mud carried on vehicles and equipment, and weed seed contained in hay for feeding horses is of particular concern.

Weed treatment alongside county, state, and federal highways is the responsibility of the respective transportation agency. BLM is responsible for the treatment of weeds on public land under the jurisdiction of BLM. Weeds are treated annually with chemicals, hand pulling, and appropriate insects, except where the BLM is crossed by county, state and federal routes. All chemical treatments are accomplished with a competitive bid weed spraying contract, while insects are dispersed on selected sites by the BLM Certified Weed Management Specialist; hand pulling of certain species is accomplished with volunteers and BLM employees. Treatment has been very effective. Continued inventory and monitoring on public lands locates new infestations and on occasion new species. When these sites/species are located appropriate treatment methods are applied.

Environmental Consequences

Current Use (No Action) Alternative A: Increased levels of motorized use on routes and unrestricted overland travel will result in the increased spread of weeds along 1,376.5 miles of existing routes and across the project area that are open to unrestricted cross-country travel. This will greatly increase the invasive species treatment cost in direct proportion to the number of acres that become infested as a result of unrestricted travel. Treatment cost will go up as more acres become infested; the current average of $90.00 per acre to an estimated FY 2007 cost of $130 per acre due to the increased cost of fuel and chemicals related to the recent sharp increase in petroleum cost.

Invasive non-native weed issues will continue to increase if user-created routes are not controlled or if the number of users on the existing routes increases substantially. The potential for the spread of weed seeds by motor vehicles is very high under the Current Use (No Action) Alternative A because of the relatively high mileage of motorized routes and cross-country travel available. Current and future route maintenance activities along the unpaved routes and open areas will continue to spread the seed from infested areas to new areas.

Proposed Action Alternative C: There would be 650.9 miles (47%) of existing routes designated open to the public with limitations, 98.5 miles (7%) would be designated open with some form of limitation, 296.6 miles (22%) would be closed to public use but limited to permittee/private landowner/utility/administrative use, and 417.9 miles (30%) would be closed to all forms of motorized use. The potential for invasive non-native weed spread will be reduced by an estimated 25% under this alternative and the total number of potential acres of infestation will be reduced with the restriction of cross-country travel. The maintenance activities associated with each of the remaining open travel routes will continue to remain the major factor in the spread of invasive non-native weed seeds.

Minimum Access Alternative B: There would be 397.4 miles (29%) would be designated open to the public with no limitations, 70.2 miles (5%) would be designated open with some form of limitation, 376.1 miles (27%) would be closed to public use but limited to permittee/utility company/private landowner/administrative use, and 611.9 miles (44 %) would be closed to all forms of motorized use. This alternative may reduce the potential for an increase in the spread of invasive non-native weed infestations. The total number of acres infested as a result of motorized travel will be reduced, since cross-country travel will not be allowed, except in two small open areas, and motorized public travel will be restricted to the routes designed for that purpose. The maintenance activities associated with each of the remaining open travel routes will continue to remain the major factor in the spread of invasive non-native weed seeds. This alternative contains technical 4WD rock crawling routes in the Limekiln TMA. The spread of weeds within the technical rock crawling area is not expected to significantly increase the spread of weeds as these vehicles are generally cleaned after each outing and vehicles are restricted to specific trails.

Maximum Access Alternative D: There would be 112.2 miles (8%) would be designated open to the public with limitations, 172.5 miles (13%) would be closed to public use but limited to permittee/private landowner/utility company/administrative use, and 305.7 miles (22 %) would be closed to all forms of motorized use. This alternative has the highest level of use among the action alternatives in terms of numbers of potential users, miles of routes. The total number of acres infested as a result of motorized travel will be reduced since motorized travel will be

restricted to open routes. This alternative has the highest potential for spreading invasive noon-native weeds through route maintenance and vehicle related activities when compared to the other action alternatives This alternative contains technical 4WD rock crawling routes in the Limekiln TMA. The spread of weeds within the technical rock crawling area is not expected to significantly increase the spread of weeds as these vehicles are generally cleaned after each outing and vehicles are restricted to specific trails.

Mitigation

Mitigation measures for the spread of weeds will be needed under all alternatives since the amount of recreational use is expected to increase. The risk of invasive non-native weed spread and the degree to which mitigation may be necessary to prevent and control the spread of weeds is relative to the number miles of designated travel routes and the amounts and kinds of use that occur.

The following mitigation measures would apply to all action alternatives:

- Minimize disturbance to riparian habitat resulting from route maintenance.
- Ground-disturbing activities will require re-seeding with approved native vegetation.
- Continue to work with road and trail maintenance crews, to ensure that the proper maintenance methods necessary to prevent the spread of invasive non-native plant species.

NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment

A traditional cultural property (TCP) is defined as: "...one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in the community's history, and (b) are important in maintaining the continuing cultural identity of the community" (National Register Bulletin 38:1.)

Unless specifically identified by Native Americans, many TCPs are extremely difficult or impossible for a field archaeologist to recognize. Such sites, often considered sacred, include mountain tops, clay sources, lithic material sources, places of origin, and specific springs. More readily identifiable TCPs can be sites such as rock art, stone structures, battle sites, and identifiable vision quest locations.

In compliance with regulations interpreting the NHPA of 1966, amended 1992, specifically 36 CFR 800.2(c)(3)(i)-(vi), BLM-SLVPLC consulted Native American tribes that might have an interest in the planning area. The method of consultation was issuance of the Tribal Consultation Bulletin, Rio Grande National Forest & Bureau of Land Management La Jara, Del Norte, and Saguache Field Offices on March 31, 2004. An entry for the Bureau of Land Management San Luis Valley Public Land Center TMP was contained in the bulletin. Tribal representatives of the Southern Ute Indian Tribe, Ute Mountain Ute Tribe, Jicarilla Apache Tribe, The Hopi Tribe, Northern Ute Tribe, Navajo Nation, Pueblo of Pojoaque, San Ildefonso Pueblo, Pueblo of

Nambe, San Juan Pueblo, Picuris Pueblo, Santa Clara Pueblo, Tesuque Pueblo, Pueblo of Jemez, and Taos Pueblo were sent the bulletin on March 31, 2004. One response, from the Jicarilla Apache Tribe, was received requesting the San Luis Valley BLM route inventory. They were sent the requested information on December 15, 2004.

Environmental Consequences

Current Use (No Action) Alternative A: Motorized use will continue to increase on existing routes and the establishment of additional user-created routes would continue due to the area designation of open. Potential impacts to cultural properties of Native American Religious Concern would increase due to the increased establishment of user-created routes, possibly into culturally sensitive areas. Cultural sites not impacted by motorized use could experience impacts due to the open area designation.

Proposed Action Alternative C: A designated travel system would result in a significant reduction of available motorized routes. The potential impacts to sites of Native American Religious Concern would be greatly decreased due to the lower number of routes and the closure of routes into sensitive areas. The closure of a high percentage of "user-created" routes would reduce potential impacts to TCPs. A designated travel system would address the issues of route proliferation “user-created” routes.

Minimum Access Alternative B: The Minimum Access Alternative B would provide for minimal motorized recreation opportunities limited to designated routes. The area designation would be changed from open to limited to designated routes. The primary management emphasis would be the protection and enhancement of natural and cultural resource values through a substantial reduction in the travel routes available for motorized and/or mechanized use. The potential impacts to cultural resources of Native American Religious Concern would be considerably fewer than the Current Use (No Action) Alternative A.

Maximum Access Alternative D: The Maximum Access Alternative D would provide for the highest levels of motorized and mechanized recreation opportunity. The potential impacts to cultural resources of Native American Religious Concern would be higher than the Proposed Action Alternative C due to the greater number of designated routes. Since travel would be limited to designated routes there would still be a significant increase in cultural resource protection as compared with the Current Use (No Action) Alternative A.

Mitigation

The following mitigation measures would apply to all alternatives:

- If a Traditional Cultural Property is experiencing adverse impacts resulting from the use of a route or trail BLM-SLVPLC will immediately take action, such as rerouting traffic or emergency treatment of the site, to protect the property from further damage. A formal site-specific mitigation plan will be prepared after the situation is stabilized.

PRIME AND UNIQUE FARMLANDS

Affected Environment

There are no prime or unique farmlands on public lands in this project area.

Environmental Consequences

None anticipated.

SOIL RESOURCES

Affected Environment

A designated travel management system is essential for public access to public lands and other lands in the San Luis Valley. Motorized travel can have impacts to soils through erosion, compaction, sedimentation, and loss of soil productivity. Landslides (mass movement) are generally not an issue along BLM routes because the land types are relatively dry and not prone to sliding. Wind erosion occurs in isolated areas but water erosion is the primary mechanism of soil movement analyzed in this route analysis.

There are a variety of soil types across the public lands. The soil surveys for Alamosa, Conejos, Rio Grande, and Saguache Counties were used as the basic soils layer. Soils vary in depth, textures, classification, climate, landform, and geology. Because there are more than 100 detailed soil map units across public lands, they were grouped into similar soil types to facilitate planning and analysis. Range sites (an ecological site description that includes soils, vegetation, climate, and landform) were used to help group the various soil types and thereby facilitate their use in land management planning. Table 9, below, shows the collection of soils and range sites into analysis units. Soils information is automated and available for applications in GIS. A map of the ecological types is available at the San Luis Valley Public Lands Center office in Monte Vista.

Travel routes exist across public lands. Current management allows cross-country travel where roads do not exists in Area #1. This can result in the proliferation of more routes and soil impacts like erosion, compaction, sedimentation, and loss of soil productivity.

Existing soil and route conditions vary considerably by specific areas. In some locations, routes are functioning properly and there is ample drainage waterbars to keep erosion minimized. In other cases, routes lack proper waterbars, are too close to stream channels, and are creating resource impacts. In some areas, routes go through wetlands and vehicle-side-tracking is ongoing (a condition where one set of vehicle tracks become entrenched so the vehicle operator creates adjacent impacts by driving on nearby grass until there are two new sets of entrenched tracks). In general, there is a backlog of route maintenance needs on public lands.

Environmental Consequences

Soil Erosion Effects: Soil erosion analysis is based upon a broad planning level perspective (potential soil erosion), as well as upon site-specific information based upon a route-by-route analysis.

Potential Soil Erosion Effects: Erosion Hazard Ratings were developed by using the Water Erosion Prediction Program (WEPP) to show the inherent erodibility of various land types. The WEPP model includes soil, climate, and slope factors to predict runoff, erosion, and sedimentation probabilities. Range sites were used as grouping categories since they represent a collection of similar soils and vegetation types. The potential erosion hazard ratings are high, moderate, and low.

Potential erosion hazards are greatest where soil cover is relatively sparse, but precipitation is high. The WEPP model indicates that where rainfall amounts are low (e.g. 7 to 10 inches precipitation zone), erosion hazard is minimal. Some of the more erosive soils are in the 10 to 15 inches precipitation zone where vegetative cover is 30 to 40 percent. This is a zone commonly referred to as the foothills area where piñon and juniper vegetation predominates.

Table 9: Potential Erosion

Range Sites	Precipitation Inches	Main Plant Associations	Probability of Occurrence of First year Runoff, Erosion, Sedimentation	Erosion Hazard Rating
Sandy bench, Deep Sand, Limy bench, Basalt Hills, Mountain Outwash, Wet Meadow	7-10	Indian ricegrass-needle-and-thread; Winterfat-blue grama,	20, 20, 20	Low
Mountain Loam, Foothill Sand, Foothills, Rocky Foothills, Foothills Loam	10-15	Western Wheatgrass-Needlegrass; Piñon/Juniper	50, 50, 50	High
Shallow Loam, Loamy park, Mountain Loam	15-20	Arizona fescue-Mountain Muhly	43, 33, 40	Moderate
Subalpine Loam	20-30	Thurber's Fescue	73, 57, 60 (<100 acres)	High

An analysis was conducted to show the potential erosion hazards and the miles of routes that are planned for being left open or closed by alternative (Table 10).

Table 10: Miles of Road Left Open or Closed by Potential Erosion Classes by Alternative

	Road Miles in Potential Soil Erosion Classes		
Alternative	**Low**	**Moderate**	**High**
Current Use (No Action) Alternative A			
Miles Open	997.4	190.0	353.7
Miles Closed	12.5	20.3	13.6

Table 10: Miles of Road Left Open or Closed by Potential Erosion Classes by Alternative			
	Road Miles in Potential Soil Erosion Classes		
Alternative	**Low**	**Moderate**	**High**
Minimum Access Alternative B			
Miles Open	656.4	109.7	199.7
Miles Closed	353.5	100.6	167.6
Proposed Action Alternative C			
Miles Open	753.9	128.8	246.7
Miles Closed	256.0	81.5	120.6
Maximum Access Alternative D			
Miles Open	776.9	144.7	276.7
Miles Closed	233.0	65.6	90.6

The potential erosion analysis shows that routes in all erosion classes are scheduled to remain open or closed. The route miles in the "high" erosion class are of particular interest. In the Current Use (No Action) Alternative A, 13.6 miles are closed in high erosion classes, representing about 3.7% of all routes in the high erosion class. In the Minimum Access Alternative B, 45.6% of the routes occurring in high erosion hazard would be closed, reducing present and future potential soil erosion problems. In the Proposed Action Alternative C, 32.8% of routes in high erosion class would be closed. In the Maximum Access Alternative D, 24.7% of routes in high erosion class would be closed. Travel would be reduced in Alternatives B, C, and D. Increased use levels on designated routes would result in erosion increases that may offset some of the erosion reductions from "open area" elimination.

Route by Route Analysis for Erosion Hazards: Actual erosion hazards are those identified during a route-by-route analysis conducted by a team of specialists. The team identified site-specific routes where erosion concerns were evident based on their experience and knowledge of a particular route (Table 11).

Table 11: Site-Specific Route Analysis - Miles of Routes Having Erosion Concerns by Alternative		
Alternative	**Miles of Routes Open or Limited to Authorized Motorized Users Only:**	**Miles of Routes Closed or Limited to Non-Motorized Travel:**
Alternative A (Current Use)	878.1	10.9
Alternative B (Minimum Access)	512.9	376.1
Alternative C (Proposed Alternative)	620.5	268.5
Alternative D (Maximum Access)	709.2	179.8

Table 11 shows that the Current Use (No Action) Alternative A leaves open the most miles of routes having actual identified site-specific erosion problems, followed by Alternatives D, C, and B. The route closures in Alternatives B, C, and D would likely reduce the amount of erosion. Route closure techniques would need to be implemented for recovery to occur.

User-created routes are those routes created by vehicles going across country to some destination point or other routes. Once one vehicle creates tracks, it is likely that others would use these tracks and soon they become established as a route. Route proliferation would be especially prevalent in the Current Use (No Action) Alternative A where open area travel is allowed. The current mileage of motorized routes under the Current Use (No Action) Alternative A is expected to increase based on increased population in the Valley and from those coming to the Valley to

enjoy recreation. Based upon annual population increases, the amount of additional motorized route mileage is projected to increase by an additional 437 to 672 miles. It is expected that fewer routes would be created under the action alternatives where motorized travel will no longer be allowed to occur cross-country and is limited to designated routes only. Erosion and compaction from user-created route proliferation would be greatest in the Current Use (No Action) Alternative A and significantly less in all of the action alternatives. Public cooperation and education would be important aspects of implementing any action alternative that might be selected.

Route Treatments and the Effects on Soil Erosion: The WEPP-Roads model can be used to demonstrate the effects of different route treatments. Treatments include leaving routes open for use, the effects of constructing waterbars (mounds of earth constructed in the roadway perpendicular to the route direction to take runoff into an appropriate buffer filter), as well as the effects of route closure on soil erosion. Table 12 shows the results of the WEPP-Roads model and erosion predictions based on local soil and climatic conditions.

Table 12: Effects of Different Route Treatments on Soil Erosion Based on the WEPP Model

Road Type and Treatment	Road Length (feet)	Use Level	30 Year Cumulative Erosion from Profile (pounds)	Sediment (pounds) Leaving an 80-Foot Buffer
Outsloped, Rutted, Current Condition	500	Low	357	34
Outsloped, Rutted, Construct Waterbars	250	Low	95	3
Outsloped, Rutted, High Use	250	High	355	5
Outsloped, Rutted, Closed Road	250	None	83	2

The results of the WEPP-Roads analysis shows that considerable reduction in erosion can be achieved by constructing waterbars and breaking up the route length so that erosive energy is dissipated into an appropriate buffer. A buffer is an unspecified amount of vegetation or branches, debris, and woody materials that dissipates the energy associated with the water and traps the sediment as it leaves the roadway or water bar. An 80-foot buffer was modeled in this analysis and approximates local conditions. The WEPP model shows that a change in use level from low to high will increase the amount of erosion. Use levels could change if one route is closed and another route gains additional traffic. The last row shows that changing the use level to none (no traffic) through a route closure results in reduced erosion and sedimentation levels. WEPP-Roads model is intended to show relative results and not absolute values.

Effects of Roads on Soil Compaction: Compaction is an expected consequence on designated routes. It is not considered detrimental as routes are considered a dedicated use. Where routes are not designated, then compaction is a concern since soil compaction can limit plant growth, reduce infiltration, and create runoff that can enter water systems. The effect of vehicles on soil compaction is shown in Table 13 (Lull, 1959). Trucks have the greatest amount of compactive force on soils due to their heavy weight, which magnifies the pounds per square inch of pressure each tire has on the ground. ATV effects on soils are minimal. This is because the ATV tires have relatively high surface area which reduces the pounds per square inch of surface force. ATV impacts to soils are slight under all alternatives. Game retrieval would have minimal effects on soils due to low pounds per square inch of compactive force. Soil erosion can become an issue if ATVs continue to use the game retrieval tracks. Wet and moist soils are most subject to compaction.

Table 13: Compactive Forces by Different Source	
Compactive Source	**Pounds Per Square Inch Ground Force**
Truck	50 to 100
Passenger Car	30
Horse	29 to 57
Human	6 to 13
ATV[9]	3 to 5

9 Estimate developed by RGNF.

Wet soils, wetlands, and moist riparian soils are highly susceptible to compaction and a loss of soil productivity. Impacts to wetlands and soil in general can be reduced by designating travel to specific routes. Seasonal route closures from February through March can help reduce route erosion during the runoff season. Seasonal route closures during the winter (January through mid-February) have little effect on soils as they are frozen.

There would be some additional soil compaction and erosion from those frequently used sites if vehicles are allowed to use a 300 foot limit to park and camp off of main designated motorized routes. The sod may often stay in tact and only compaction would be an issue where use is not heavy. There would be little compaction and erosion from dispersed parking and camping if the 300 foot policy is not selected.

Soil Protection Mitigation and Restoration Treatments: Road restoration techniques can be used to reclaim existing roads and trails. Kolka and Smidt (2004) evaluated different systems of forest road amelioration and concluded that subsoiling may represent the most economically-viable road retirement method. A subsoiler is the state-of–the-art implement to reduce soil compaction, restore favorable growing conditions for plants, and restore soils to a productive capacity. Davis (1990) reported that a subsoiler restored soil bulk densities caused by logging to undisturbed levels in Oregon. When a winged subsoiler is compared to rippers on compacted soils, subsoilers provided superior profile shatter of 137% versus 26% (Carr, 1989). A winged subsoiler is available for use at the San Luis Valley Public Lands Center and has been used successfully on nearby National Forest lands.

Subsoiling effectively reduces soil compaction.

Mitigation:

Revegetation of reclaimed or subsoiled routes would be completed with Certified Weed-free native species and Certified straw mulch. Certification assures that the product would not introduce any noxious weed species. There are numerous resource benefits that would result for routes planned for closure. These include restoration of hill slope integrity,

infiltration, and hydrologic, ecologic, and geomorphic function and processes (Switalski et al., 2004).

Cumulative Effects: Cumulative effects for soils include those impacts from past, present, and reasonably foreseeable future effects. Many of the public land soils have experienced some degree of past erosion from livestock grazing, historically and more recently. Off-road vehicle use has eroded and compacted soils to some extent. Past historic logging and burning has impacted soils by causing erosion. Some erosion is occurring due to off-road vehicle uses as described in previous soils sections. Some prescribed fire treatments occur but generate small amounts of erosion since they are low-temperature burns where considerable surface cover remains. There is limited logging occurring on public lands, like at Antelope Creek, and this harvest meets land health standards. Mining has impacted some soils in some locations.

Some erosion from roads and management projects on National Forest, State lands, or private lands may be affecting public lands. For example, a steep road on National Forest may deposit sediment onto public lands. Similarly, some erosion on public lands may affect some adjacent private lands.

A limited amount of prescribed fire is planned which would have minor soils impacts. Some oil and gas development, and associated roads could occur. Livestock grazing may continue to have localized soil impacts. Some limited amount of mining activities could affect minor areas. Some small timber sales could occur as well having small, localized soils impacts.

VEGETATION

Including information related to Public Land Health Standard 3

Affected Environment

The majority of the grazing allotments in the San Luis Valley planning area have been assessed to determine if they are meeting the vegetation standard in the Public Land Health Standards. These standards relate to all uses of the public lands. Public Land Health Standard 3 relates specifically to vegetation conditions and states:

> Healthy productive plants and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population levels are productive, resilient, diverse, vigorous and able to reproduce and sustain natural fluctuations and ecological processes.

The project area includes a variety of vegetation communities ranging in elevation from 7,544 feet to 11,068 feet with average precipitation being approximately 7.1 inches per year depending largely on elevation. There are 30 significant ecological range sites. Range sites are defined as a kind of land which supports vegetation useful for grazing on which routine management of that vegetation is through manipulation of grazing rather than cultural practices (BLM Technical Reference 4400-4, May 1985).

Table 14: Ecological Range Sites		
Range Site Classes on Public Lands	**Vegetative Community**	**Acres**
Limy Bench	Grasslands	123,472.55
Basalt Hills	Grasslands	115,955.52
Shallow Loam	Grasslands	51,602.86
Rocky Foothills	Piñon/Juniper Woodland	41,368.66
Unclassified/Other	Grasslands	27,486.73
Mountain Outwash	Grasslands	26,853.62
Sandy Bench	Grasslands	19,583.55
Mountain Loam	Grasslands	19,492.03
Ponderosa Pine/Douglas Fir	Forest Woodland	19,233.56
Foothill Loam	Grasslands	19,065.54
Piñon/Juniper Woodlands	Piñon/Juniper Woodland	15,372.81
Sand Hummocks	Grasslands	8,726.01
Salt Flats	Grasslands	7,052.75
Foothill Sand	Grasslands	3,879.29
Valley Sand	Grasslands	3,192.73
Valley Bench	Grasslands	2,797.78
Foothills	Grasslands	2,278.57
Mountain Loam 10-14p	Grasslands	1,740.22
Alkali Overflow	Grasslands	1,119.64
Loamy Park	Grasslands	1,017.82
Sandy Hummocks	Grasslands	980.79
Wet Meadow	Grasslands	882.66
Chico Land	Grasslands	692.84
Deep Sand	Grasslands	463.83
Mountain Meadow	Grasslands	261.78
Salt Meadow	Grasslands	196.03
Sub-alpine Loam	Forest Woodland	56.81
Unclassified Dunlan	Grasslands	12.53
Mountain Outwash	Grasslands	2.17
Gravel Pits	Grasslands	1.61
Total Acres		**514,843.29**

The range sites have been lumped into vegetative communities as described below as some range sites have similar vegetation and other comparable characteristics.

Piñon/Juniper Woodland Communities: Sites containing significant amounts of piñon/juniper vegetation are the predominate vegetation found at lower elevations. These sites are generally characterized by shallow soils and substantially less herbaceous ground cover than most of the other communities. Erosion potentials for these vegetative communities tend to be somewhat higher than other vegetative community types due to these two influences, as well as the fact that these two communities often occupy very steep, rocky terrain. Natural re-vegetation of disturbed areas, such as from roads or trails, is much slower in areas dominated by piñon/juniper vegetation than in other communities due to the reduced amount of herbaceous vegetation and shallow soils. Approximately 56,741 acres consist of piñon/juniper vegetation.

Grasslands Communities: Sites containing a substantial grass or forb component tend to have much deeper soils with a greater water-holding capacity than many of the other vegetation communities. Communities containing a significant aspen component share

some of these characteristics. The deep soils and relatively shallow root systems of grass and forb species tend to make these sites somewhat more susceptible to damage from vehicle use than many of the other sites. The shallow root systems are more susceptible to direct physical damage and soil compactions and the deep soils are highly susceptible to rutting from vehicle tires when wet. Vehicle operators often tend to drive to the sides of existing ruts causing additional damage and "braiding" of trails that result in further loss of vegetation when wet conditions exist. Grassland communities tend to re-vegetate relatively rapidly when undisturbed. Approximately 438,811 acres consist of grassland vegetation.

Forest Woodland Communities: Most of these communities are dominated by coniferous woodland species such as ponderosa pine, Douglas fir, Engelmann spruce, and lodgepole pine. Approximately 19,290 acres consist of Forest Woodland vegetation. If undisturbed, they tend to have either:

1) Sufficient herbaceous understory species to provide soil protection and to control erosion. This is the case with ponderosa pine sites that often include an understory of shrubs such as mountain mahogany or grass species such as Arizona fescue or mountain muhly; or

2) Sufficient forest litter (needlecast, etc.) to provide soil protection and to control erosion. This is the case with some of the spruce, fir or spruce/fir mix vegetation classes.

Environmental Consequences

The establishment of a route destroys vegetation causing a direct impact to the vegetation. Reducing route densities will have a direct beneficial impact on the vegetation by allowing closed routes to be restored to healthy native plant communities under all action alternatives. The modification from open to limited combined with the 300 foot policy will greatly reduce the amount of vegetation destroyed by user created routes. Limiting the distance of a user created route is a significant reduction in impacts to vegetation while still allowing recreationists an opportunity to leave the area adjacent to the route.

The environmental consequences of vegetation loss due to motorized routes can have a substantial impact on other resource values (e.g., soil erosion, wildlife forage, habitat, etc.) even if the direct impacts on vegetation are slight. The Interdisciplinary Team attempted to limit motorized uses to the most appropriate areas in order to achieve the DFCs and manage for sustainable landscapes that are meeting the Public Land Health Standards (Appendix 4). This portion of the analysis examines impacts to vegetation characteristics. Table 15 displays approximate acreage figures for those routes proposed for closure. Acreage figures were based on the approximate widths for trails and primitive routes identified below in Table 50. The restoration consists of reseeding or natural rehabilitation. One very important aspect of the action alternatives (i.e., Alternatives B, C, and D) that this table does not reflect is the vegetative acreage that will not be compromised or destroyed due to these alternatives' change in area designation from open to limited (i.e., motorized travel limited to designated routes only and the 300 foot limitation for dispersed recreation). The 437 to 672 miles of additional user routes

projected to be created during the life of the plan under the Current Use (No Action) Alternative A would result in the additional destruction of 6,360 acres of vegetation.

Table 15: Vegetation Impacts

Vegetation	Current Use (No Action) Alternative A	Minimum Access Alternative B	Proposed Action Alternative C	Proposed Action Alternative D	Maximum Access Alternative D
Acres of Vegetation Impacted	2574.87 (100%)	1794.63 (69%)	2046.26 (79%)	2196.38 (85%)	2196.38 (85.3%)
Acres of Vegetation Restored via Reseeding	N/A	40.47	81.19	81.19	18.85
Acres of Vegetation Restored via Natural Rehabilitation	N/A	731.59	519.31	519.31	389.37

All action alternatives provide for a certain degree of route closure allowing for either natural rehabilitation or reclamation.

The two small previously disturbed open areas would be available for off-road use under all action alternatives. The impacts to the vegetation in the two open areas are the same for all alternatives.

Direct and indirect impacts are basically the same through all alternatives. The extent of these impacts is measurable, distinct between each alternative.

The cumulative affects with each alternative are basically the same with the closing of routes. The extent of these impacts is measurable, noticeable between alternatives.

Current Use (No Action) Alternative A: Motorized cross-country travel will continue to increase the number and amount of user-created routes. A total of 1,376.5 miles of motorized routes would be available (under the travel use categories of General, ATV, and Limited User). An additional 437 to 672 miles of routes are projected to be created over the life of the plan. A total of 36.5 miles of restricted non-motorized routes would be available for hiking, horseback riding, and bicycles (under the travel use categories of Bicycle and Foot and Equestrian). Vegetation would continue to be impacted or absent on approximately 2,574.87 acres in addition to that impacted by continued cross-country use and the potential creation of additional user created routes (6,360 acres).

The Current Use (No Action) Alternative A is the only alternative that does not take action in limiting direct impact to the vegetation. User-created routes (from cross-country travel) will likely continue to increase causing continued vegetative resource damage under the Current Use (No Action) Alternative A. The Current Use (No Action) Alternative A does not propose any limitations on the expanding 4WD rock crawling area located in the Limekiln TMA. Rock crawler 4WD users would continue to increase along with more user-created routes resulting in greater impacts to the vegetation. The Current Use (No Action) Alternative A does not protect the existing vegetative health of the valley as do the other alternatives (6,360 acres of potential further disturbance/loss).

Proposed Action Alternative C: The Proposed Action Alternative C reduces the number of motorized routes that are open to the motorized travel by 31%. Approximately 2,046.26 acres or 79% of the vegetation would continue to be impacted.

The emphasis of developing a travel management system is present throughout the planning area with the exception of the two open areas that consist of 81.1 acres and 179 acres located in the San Luis Hills and the San Luis Hills ACEC TMAs, respectively. These two open areas were recommended by the Interdisciplinary Team as being left open to motorized vehicles (including cross-country travel due to a number of reasons:

- the areas are being used as an old barrow pit or quarry;
- there is a lot of demand for areas that would allow for this type of motorized recreation and that the demand will continue to grow as the population grows;
- the route closures found in all of the action alternatives and the resultant loss of motorized OHV recreational opportunity can be somewhat "offset" or mitigated by these open areas and;
- the change in area designation from open to limited will largely eliminate cross-country off-route travel and is somewhat mitigated by these designated open areas.

Direct Impacts: Thirty-one percent of the existing routes would be closed to motorized travel under the Proposed Action Alternative C. This alternative would have a direct impact on a large acreage of the vegetation. Routes being impacted by motorized travel would meet or be moving towards meeting the Standard for Public Land Health for vegetation.

There could be continuing problems with illegal motorized use on closed routes and cross-country travel after implementation of the TMP. Areas that are susceptible to damage, such as large open grassland communities and woodland communities, would need to be protected and travel restrictions enforced. The impacts to vegetation in other areas should be reduced, resulting in a net benefit to vegetation by emphasizing motorized use in the two small previously disturbed open areas.

Minimum Access Alternative B: The number of miles available for motorized use would be reduced by about 43% under the Minimum Access Alternative B when compared to the current Use (No Action) Alternative A. The area that would re-vegetate due to motorized route closures would be 780 acres. The direct beneficial impact this alternative would have on the vegetation is more substantial than the other alternatives and in particular the Current Use (No Action) Alternative A. Many more acres that are devoid of vegetation due to past motorized impacts would have the opportunity to develop natural vegetative cover or be re-vegetated by mechanical reseeding. Acres that are now devoid of vegetation and not meeting the Public Land Health Standards would meet or go toward meeting these standards as they re-vegetated.

Maximum Access Alternative D: The Maximum Access Alternative D is most comparable to the Current Use (No Action) Alternative A by allowing more OHV recreation opportunity. This alternative is significantly more environmentally friendly than the Current Use (No Action)

Alternative A when it comes to protecting the vegetative resources, because like the other action alternatives it disallows motorized cross-country travel. Vegetation on approximately 2,196.38 acres would continue to be absent where motorized routes exist and 378 acres would be available for naturally re-vegetation or reclamation on closed routes under the Maximum Access Alternative D. This is substantial when compared with the Current Use (No Action) Alternative A of 2,574.87 acres of vegetation that would be impacted. This alternative establishes limitations for the 4WD jeep crawling activity located in the Limekiln TMA, thus preventing further expansion. The total number of motorized routes would be reduced by 23% when compared to the Current Use (No Action) Alternative A.

The Maximum Access Alternative D is much more conducive for the re-establishment of vegetative communities than the Current Use (No Action) Alternative A, which allows for increased off-road vehicle use. This alternative would be much more resource oriented than the Current Use (No Action) Alternative A.

Cumulative Effects

Cumulative Effects associated with the No Action alternative would be increasing impacts to the vegetation stemming from excessive cross country use, more user created routes would be established which would result in additional extensive damage to the vegetative resource which could affect the amount of forage available for livestock and wildlife. The No Action Alternative could lead to loss of habitat for wildlife and unsuitable grazing lands for livestock. These impacts are the same for each alternative that does not allow for the reduction and management of established routes. Alternative A and Alternative D would be expected to experience more of these measurable impacts to the vegetative resource.

Mitigation

The following mitigation measures would apply to all action alternatives:

- Routes designated open to motorized uses should be temporarily closed during wet conditions such as spring thaw.

- Measures such as signage, fencing, barriers, and other appropriate measures should be implemented to direct the public from cross-country travel and proper use of open routes. The same measures should direct the public away from closed routes.

- Routes designated as closed to the motorized uses need to be monitored and closures enforced to ensure that continued use of these routes by the motorized public does not continue thereby causing further damage to reestablishing vegetative communities.

WATER QUALITY - HYDROLOGY (includes information related to Public Land Health Standard 5)

Affected Environment

The project area includes 38 5th and 117 6th level watersheds. These watersheds and HUC are listed in Appendix 9. These watersheds are tributary to several main streams including Saguache Creek, San Luis Creek, Alamosa River, Rio Grande, and Conejos River.

The average annual precipitation on public lands within the San Luis Valley is highly dependent on elevation. The valley floor receives approximately 7-10 inches annually; the foothills about 9 to 14 inches; and at elevations above 9,000 feet the range is 14-45 inches yearly (see Figure 1).

Water Quality

Land Use Patterns and History: Land use patterns in the San Luis Valley, including mining, agriculture, and grazing uses have affected water quality. The catalyst for settlement of the fringes of the San Luis Valley was mining activity that occurred during the late 1800s, including the Saguache/Kerber Mining district and Sangre de Cristo Mines. Mining and associated agriculture operations brought significant land use change to the valley although some settlement had previously occurred in conjunction with land grants established by Mexico in the 1840s. Roads were constructed and settlements established. The mining activity was not long-lived due to low-grade ore and remote locations.

Construction of several major irrigation canals began in 1883 (Empire, Del Norte, and Citizens' Ditch), and that led to the San Luis Valley becoming a prominent agriculture area.

Heavy grazing occurred in the early 1900s including areas now managed by BLM. This heavy use resulted in degradation of vegetation along streams and in uplands areas, causing an increase in magnitude and timing of runoff that caused erosion along many stream channels. Many of the

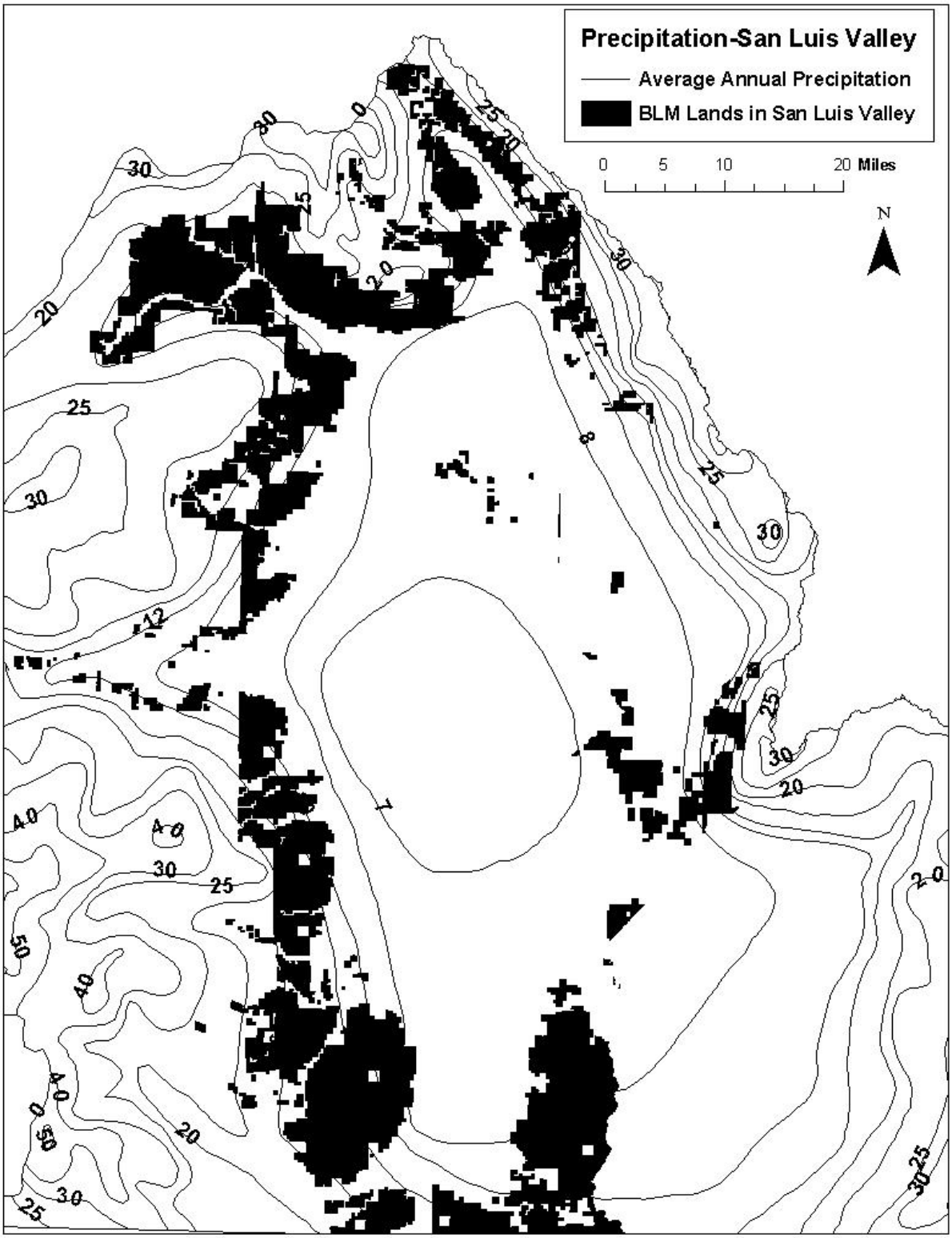


Figure 1. Average Annual Precipitation

channels adjusted to increased flows by down cutting and adding more sediment to the system. Routes were often placed near or through stream channels, further altering runoff hydrology and increasing erosion and sediment yield. These heavy use patterns along upland areas have led to vegetative change to disturbance-dependent and/or early successional stage species.

The current number of travel routes have either already experienced or have the potential for increased use, which will have a definite negative influence on water quality and hydrology. User-created routes, discussed further under the Current Use (No Action) Alternative A, have a negative impact on watershed health. There is the potential for several thousand miles of new routes with population growth and increased ATV use. Soil stabilizing vegetation is removed and soils are compacted, leading to increased runoff, sedimentation, and downstream channel destabilization as the number of routes and amount of use increases.

Improvements in land management practices have led to substantial recovery in watershed conditions. Recovery of upland and riparian vegetation has led to stabilization of many stream channels and gully erosion features. Improved route maintenance and design have been a major factor in this improvement. Improvement in stream channel vegetation and upland vegetation that has been severely impacted in the past occurs at a slow rate, especially in areas where precipitation is low.

Existing Conditions: The Colorado BLM is directed to address the Public Land Health Standards. Standard 5 is directed at water quality and states:

> The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the water quality standards established by the State of Colorado. Water quality standards for surface and ground water include the designated beneficial uses, numeric criteria, and anti-degradation requirements set forth under state law as founding (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

The Public Land Health Standards are provided in Appendix 4.

The Colorado Water Quality Control Act gives authority to the Colorado Water Quality Control Commission to classify and assign numeric standards to state waters. State waters are classified for the present beneficial uses of water or the beneficial uses that may be reasonably expected in the future. The classifications for beneficial uses include aquatic life, recreation, agriculture, and water supplies for various purposes. The numeric standards are assigned to define the allowable concentrations of various parameters under physical, biological, inorganic, and metals categories.

The Colorado Water Quality Control Commission has included a narrative statement in the Basic Standards for all surface water that states, in part:

> All waters (except in wetlands and/or except where authorized by approved permits, certifications or plans of operation) shall be free from substances attributable to human caused point or non-point source discharges in amounts, in concentrations that:
>
> 1. Can settle to form bottom deposits detrimental to the beneficial uses.

2. Are harmful to the beneficial uses or toxic to humans, animals, plants or aquatic life.

3. Produce a predominance of undesirable aquatic life (CO Dept of Health and the Environment[10])

Sediment and nutrient loading in surface waters could result in violations of the above standards. All waters are meeting the water quality Standard for Public Land Health other than those discussed below.

Waters not meeting water quality standards are placed on the 303(d) list until the water quality is improved. Waters that are thought to be impaired but not enough data exists to make a determination are placed on the Monitoring and Evaluation List (M&E Listing). Waters within the planning area that are on the 303(d) list (Colorado Department of Public Health and Environment, 2004) are Kerber Creek, Alamosa River, Ranger Creek to Terrace Reservoir, Terrace Reservoir, San Luis Lake, Rio Grande from Willow Creek to Alamosa County Line, and Sanchez Reservoir. Most of these water quality problems are associated with drainage from previous mining operations. Although portions of Kerber Creek and the Alamosa River segments flow through public lands, none of the state-listed impairments are caused or exacerbated by drainage from public lands.

Waters on the M&E Listing that are associated with public lands include the Rio Grande (Conejos County Road G to Colorado/New Mexico border). The listed impairment is sediment. Any contribution from public lands to this impairment is likely very minor.

Many water sources and their associated structures (springs, seeps, water developments, and wells) have adjudicated water rights for beneficial uses, including livestock, wildlife, and human consumption, recreation, and fire suppression. Sediment entering these sources shortens their life span and increases the amount of maintenance required. Many of these water source structures were designed to accommodate a specific amount of runoff. Increased runoff could threaten their structural integrity.

Environmental Consequences

Effects Common to All Alternatives: There are few, if any, environmental benefits to the watershed and water quality from roads and trails. All alternatives would have negative impacts to water quality and hydrologic functions in varying degrees depending upon the miles of routes that are designated for use.

The largest impact is sediment. Sediment loads carried by drainages are a natural part of watersheds and maintains relative stability among bed and banks, including erosion and deposition. Erosion in a watershed resulting from routes and other disturbances can overload a

[10] Colorado Department of Public Health and Environment-Regulation Number 31-The Basic Standards and Methodologies for Surface Water (5CCR 1002-31).

channel, aggrading the bed changing channel pattern, and causing sedimentation of lakes, reservoirs, and ditches, along with changing stream response to flood waters. The sedimentation of lakes, reservoirs, and ditches could have an effect on the beneficial uses of the waters as water users could be required to maintain water developments more frequently.

The amount of additional sediment and runoff from routes varies by type and levels of use. Given the same soil types and slopes, foot trails with minimum access will have much less impact to the watershed than a motorized route. Impacts increase as route width and the weight of transportation means increase.

Along with increased runoff, time-to-peak, erosion, and sediment, routes located in the channel bottoms have the greatest impact. They remove stabilizing vegetation and make substrate available for mobilization and increase sediment loads over longer distances than do routes in upland areas.

Route location is the greatest factor in the actual amount of impact to a waterway. A route that is closer to a waterway will have a greater impact than one with a ridge top location. Runoff from disturbed lands adjacent to routes, the route surface, and route drainage can supply sediment that can make its way into stream courses.

Route density will give an idea of the overall impact that routes have on a watershed. Higher route densities equal greater impacts to a watershed. Route densities of 15 miles per square mile are typical densities of urban areas. Motorized route densities were calculated on a 6th level watershed basis for those watersheds that will have changes under the action alternatives. This data is provided in Appendix 13 (Route Density in 6th Level Watersheds). A map illustrating the current route density and reduction in route density for the three action alternatives is provided in Appendix 14. Motorized route density would be reduced in a majority of the 6th level watersheds under all action alternatives (Table 16: Reduction in Overall Motorized Route Density by 6th Level Watersheds (Summary of Appendix 13)).

Table 16: Reduction in Overall Motorized Route Density by 6th Level Watersheds (Summary of Appendix 13)

Number of Watersheds	Proposed Action Alternative C	Minimum Access Alternative B	Maximum Access Alternative D
With >0 but <10% Reduction	51	47	66
With >=10% Reduction	35	42	17
Total Watersheds with Route Density Reduction	86	89	83

As shown by the table, a large percentage of watersheds with public lands will have at least some reduction in density under all action alternatives. In addition to the benefit from reduction in density, the change in area designations from “open” to “limited” under all action alternatives will have a significant impact in reducing new user-created routes and the impacts they have to water quality and watershed health.

The amount and time of use has a significant bearing on the level of impact that routes have on a watershed. Use during wet periods results in increased soil movement and delivery. The ruts

caused by use during wet periods cause routes to widen because, during dry periods, users will try to stay on the smoother surfaces on either side of the ruts.

Route impacts can be mitigated in one of two ways. The first is proper construction and maintenance of routes following best management practices. Proper construction includes locating the route away from drainages. Routes that are located in drainage bottoms are, at best, very difficult to mitigate. The second is closure of routes during wet periods. Many BLM motorized routes already have seasonal closures from January 1 to April 15.

The planning area has a very diverse land ownership pattern that is rapidly changing. There are many factors affecting the water quality and hydrology. Increasing acreages of private land are being subdivided and becoming developed with additional routes and home sites, adding to the impacts in the watersheds. Thirty-five and forty-acre parcels that were formerly parts of large ranches and used primarily for livestock grazing are now being occupied for home sites with individual water wells, septic systems, and routes.

There are impacts associated with grazing and historical mining that continue to influence the water quality. User-created motorized routes have increased dramatically. The SLRA TMP is an important piece of the watershed management equation. It will determine the kinds and amounts of travel uses that will be allowed on public lands within the watersheds. The decisions made in the SLRA TMP will play an important role in determining the overall health of these watersheds.

Data regarding motorized route systems were evaluated on a 6th level watershed basis and on a TMA basis. Sixth-level watershed analysis gives a good overall perspective of what impact the different alternatives will have on overall watershed health. There should be a benefit as routes are reclaimed naturally or through specific projects as route density within a watershed decrease. Density reduction was calculated for each 6th level watershed (see Appendix 13). An overall summary table regarding changes in motorized route density by alternative is shown in Table 19, above.

Three primary categories of motorized route data were analyzed on a TMA/public lands basis including: 1) motorized route segments within 30 meters of stream channels; 2) motorized route segments within 30 meters of stream channels on erosive soils; and 3) number of stream channel route crossings. This data was broken down further using perennial and ephemeral/intermittent stream designations. Those route segments close to stream channels and crossings have the highest potential of impacting stream health. This analysis provides summary of what specific areas will benefit from route closures. Appendix 15 includes the following data: Number of Stream Channel Crossings Motorized Routes by TMAs (Appendix 15A), Miles of Motorized Routes within 30 Meters of Stream Channels by TMA (Appendix 15B), and Miles of Motorized Routes Located on Erosive Soils within 30m of Stream Channels for Each Alternative by TMA (Appendix 15C), which displays by alternative, on a TMA basis, the statistics for each category. Percent reduction of route length within 30 meters, number of crossings on a TMA, and public lands basis are provided. Included are total miles of motorized routes by TMA to compare to the amount of route within 30 meters of stream channels. These figures include all routes, including state and county roads.

A summary of information regarding reduction in route crossings and route miles within 30 meters of stream channels by alternatives is as follows:

Table 17: Overall Reduction (%) in Number of All Route Crossings on Stream Channels within All TMAs (Summary of Appendix 15A)

	Proposed Action Alternative C		Minimum Access Alternative B		Maximum Access Alternative D	
Intermittent (I) or Perennial (P)	I	P	I	P	I	P
Reduction	34%	33%	48%	40%	22%	27%

Table 18: Overall Reduction (%) in Miles of All Motorized Routes within 30 Meters of Stream Channels within All TMAs (Summary of Appendix 15B)

	Proposed Action Alternative C		Minimum Access Alternative B		Maximum Access Alternative D	
Intermittent (I) or Perennial (P)	I	P	I	P	I	P
Reduction	33%	24%	46%	31%	23%	17%

Table 19: Overall Reduction (%) in Miles of All Motorized Routes *on Erosive Soils* within 30 Meters of Stream Channels within All TMAs (Summary of Appendix 15C)

	Proposed Action Alternative C		Minimum Access Alternative B		Maximum Access Alternative D	
Intermittent (I) or Perennial (P)	I	P	I	P	I	P
Reduction	31%	21%	45%	30%	23%	17%

Significant reduction in route miles within 30 meters (both categories) and route crossings will occur under all action alternatives. These reductions will lead to improved stream channel and overall watershed conditions.

The following table summarizes type and miles of travel routes that will be designated under each alternative. These statistics are discussed in more detail under each alternative.

Table 20: Types and Miles of Designated Travel Routes under All Alternatives

Alternative	Total Miles Designated Travel Routes	General, ATV and Limited User	Non-Motorized and Mechanical
Current Use (No Action) Alternative A	1,413	1,376.5	36.5
Proposed Action Alternative C	1,037.9	947.5	109.7
Minimum Access Alternative B	843.7	776.4	91.4
Maximum Access Alternative D	1,150	1,066.3	97.7

Statistics regarding road crossing density, length of routes within erodable soils, length of routes close to stream channels, and general road density all show how the action alternatives will benefit watershed health. In addition to these changes, the designation of public lands with regard to travel from “open” to “limited” under all action alternatives, will greatly reduce the potential for impacts to water quality from user-created routes. Although the benefit from this designation change to individual watersheds will vary, overall it will be a major factor in maintaining water quality and stream health over time.

Another factor that will affect motorized travel under all action alternatives is the "300 foot policy" that will allow some motorized overland travel away from designated roads and trails for that distance (perpendicular). This allowance is for dispersed camping, parking, and other activities away from roadways, as long as resource damage does not result. Actual impact of travel 300 feet away from designated roads under the action alternatives will be minor, although some localized negative impact could be expected if travel occurs during wet or other adverse conditions. These situations should be minimized by the "no adverse impact to resources" clause of the policy and its enforcement.

The change from "open" to "limited" and implementation of the 300 foot rule by action alternatives, in all cases watershed health benefits greatly. This was analyzed by determining calculating the acres of water influence zone, that area within about 100 feet of perennial streams, would be accessible by traveling 300 feet from a motorized travel route. There are approximately 1,100 acres within 100 feet of perennial streams on public land in Area #1. These are the most sensitive areas that could be disturbed by motorized travel away from travel routes. Alternative A, a 61% reduction in acres could be directly impacted by a reduction of motorized vehicles in Area #1 going from "open" to "limited" and limiting access to 300 feet from the routes. Alternatives B, C, and D will have reductions of 69%, 65%, and 65% respectively. Monitoring of areas accessed under the 300 foot policy will be key to preventing user abuse. It may be necessary to have specific closures if particular stream reaches and adjacent areas are negatively impacted. This will be more likely to occur on intermittent or perennial streams that are limited in extent on public lands and more desirable for camping and other activities. The 300 foot allowance will have only a small and localized impact to watershed resources. The most benefit results from going from an "open" to "limited" status. Travel along or across all stream channels, from ephemeral to perennial, will be greatly reduced.

Current Use (No Action) Alternative A: A total of 1,413 miles of routes would be designated for public travel uses (all travel use categories, not including non-BLM routes (county and state highways)), of which 1,376.5 miles would be designated for motorized uses (travel use categories of General, ATV, and Limited User) and 36.5 miles for non-motorized and mechanical uses only (travel use categories of Bicycle, including Limited User routes available for Bicycle use, Foot, and Equestrian).

Motorized route densities in 6th level watersheds would range from 0.38 to 4.3 miles of routes/square mile, the same as the other alternatives, but the average route density would be much higher and would likely be subject to significant increases due to the retention of the area designation of open designation on Area #1. Many areas would continue to have high route densities and would retain many short spurs and duplicate routes, adding to the impacts to the watersheds. It has been estimated that miles of routes, mainly user-created, could multiple several times over the next 15 years. One good example of this is the 7.65 miles of "rock-crawling" trails that have been user-created near the Limekiln area. Although impact to watershed values are minimal since no intermittent or perennial stream channels are affected by this particular activity, it is likely these type of trails will increase in other areas where watershed values and water quality could be impacted.

Areas classified in the SLRA RMP as open (389,279 acres, not including ACECs) would remain open to motorized *cross-country* travel and travel would be allowed on all existing routes not

designated otherwise. The amount of motorized routes within 30 meters of stream channels and the number of crossings would likely increase in many areas due to travel off of existing routes. The amount of additional impact due to cross country travel would vary from TMA to TMA, but as noted above could increase over 100% in the next 15 years. Establishment of additional user-created routes within 30 meters of stream channels and across stream channels would continue to increase and could significantly impact stream health where terrain is not overly steep and is easily accessible to motorized travel. Such impacts would be less in areas of TMAs where terrain is prohibitively steep or inaccessible. Sediment input would continue at current levels and likely increase in the near future. Sedimentation and other negative impacts could be reduced through specific mitigation through future projects.

Travel is classified as limited to existing routes in ACECs. Additional user-created routes and stream crossings should be minimal, although some will probably still occur.

The amount of sediment and pollutants entering the stream system from the current available routes and from user-created routes in the future would be highest and require the most mitigation under this alternative. There would be the greatest possibility that the water quality Standard for Public Land Health would not be met in localized areas.

Proposed Action Alternative C: Under this alternative, of the 1,413 miles currently available to the public for generally unrestricted motorized use, 1,037.9 miles (73%) would be designated open to the public for all travel use categories. General, ATV, and Limited User mileage would be reduced about 31%, and non-motorized miles would increase about 300% (see Table 22).

This would be a significant reduction from Current Use (No Action) Alternative A levels. Motorized route densities in 6th level watersheds under this alternative would range from 0.38 to 4.3 miles per square mile. Some areas would have lower route densities than under the Maximum Access Alternative D, while some areas would have higher route densities than under the Minimum Access Alternative B. Compared to the Current Use (No Action) Alternative A, out of the total of 121 6th level watersheds, 51 watersheds would have a reduction in motorized route density of up to 10%, and 35 watersheds would have 10% or greater reduction. Six of the 35 watersheds with greater than 10% reduction would have 20% or more reduction.

As compared to the Current Use (No Action) Alternative A, reduction of all motorized route miles within 30 meters of stream channels is significant under this alternative. Overall, a 33% reduction would occur along intermittent/ephemeral streams and 24% along perennial streams. The reduction on a TMA basis would range between 18-98% and 5-100% respectively within the two different categories (intermittent/ephemeral and perennial: TMAs where reductions occur). TMAs that currently have the most routes within 30 meters of perennial streams include San Luis Creek (4.67 mi) and Trickle OHV (8.85 mi). Reductions in routes along these stream reaches are 20% and 24%, respectively. These reductions are lower than the Minimum Access Alternative B but higher than the Maximum Access Alternative D as shown in Appendix 15B (Miles of Motorized Routes within 30 Meters of Stream Channels by TMA). All TMAs have significant reductions of routes along intermittent/ephemeral stream channels as well as perennial streams with only minor exceptions.

Routes along stream channels are reduced significantly under the Proposed Action Alternative C. These overall reductions may occur along routes with a large variation in soil types, rocky non-erosive substrate to erosive soils.

Routes along sensitive or erosive soils are most likely to create problems and add sediment to stream systems. Analysis of these motorized route segments designated as open or limited was completed and shows a large reduction of length along intermittent and perennial streams (summarized in Table 20 and detailed in Appendix 15C (Miles of Motorized Routes Located on Erosive Soils within 30m of Stream Channels for Each Alternative by TMA)). Compared to Alternative A, a 31% reduction would occur along intermittent/ephemeral streams and 21% along perennial streams. This would have a beneficial effect to overall stream health along these reaches.

Route/stream intersections are often areas where sediment can enter streams by direct erosion impact at the crossing or sediment carried by runoff down improperly designed ditches. Reducing these intersections on intermittent/ephemeral and perennial streams can greatly improve overall stream health and downstream sediment transport. There is a 34% reduction of number of crossings on intermittent/ephemeral streams and a 33% reduction on perennial streams (all TMAs) under this alternative as compared to Alternative A. This reduction is somewhat less than the Minimum Access Alternative B but greater than the Maximum Access Alternative D (Table 17).

There would be a low possibility that the water quality Standard for Public Health would not be met in some localized areas under this alternative. Monitoring and maintenance plans would reduce impact of routes remaining open to motorized vehicles and other transportation.

Minimum Access Alternative B: Under this alternative, of the 1,413 miles currently available to the public for generally unrestricted motorized use, 843.7 miles (60%) would be designated open to the public for all travel use categories. General, ATV, and limited user mileage would be reduced about 56% and non-motorized miles would increase about 250% as compared to Alternative A (Table 20).

This alternative would generate the least amount of sediment and pollutants from the designated transportation system and require the lowest amount of mitigation.

This would be the most significant reduction from Current Use (No Action) Alternative A levels as the following discussion indicates. Motorized route densities within 6th level watersheds under the Minimum Access Alternative B would be reduced in 89 watersheds. Densities would range from 0.38 to 4.3 mile per square mile as with the other alternatives, but percent reduction in density in 66 watersheds would be greater as compared to the Proposed Action Alternative C or Maximum Access Alternative D (see Appendix 13). 42 watersheds would have density reduced 10% or more as shown in Table 17. This would leave many areas with much lower route densities and impacts than under any of the other alternatives.

Reduction of motorized route miles within 30 meters of stream channels on public lands is highest under this alternative. Overall, a 46% reduction would occur along intermittent/ephemeral streams and 31% along perennial streams. The reduction on a TMA basis

would be 24-98% and 5-100% respectively within the two different categories (ephemeral/intermittent and perennial: TMAs where reductions occur). The reduction of route length would be 45% along intermittent/ephemeral streams and 30% along perennial reaches when considering motorized routes on erosive soils within 30 meters of channels.

Implementation of this alternative, more than any other alternative would probably best assure meeting or exceeding the water quality Standard for Public Land Health for most areas within the project area.

Maximum Access Alternative D: Under this alternative, of the 1,413 miles currently available to the public for generally unrestricted motorized use, 1,150 miles (81%) would be designated open to the public for all travel use categories. General, ATV, and limited user mileage would be reduced about 23%, and non-motorized miles would increase about 268% (Table 20). Motorized route densities within 6th level watersheds would range from 0.32 to 4.3 miles of routes per square mile. As compared to Alternative A, route densities would be reduced in 83 6th level watersheds, but with fewer being reduced by 10% or more as compared to the Proposed Action Alternative C and Minimum Access Alternative B (Table 16). Density reduction in 55 watersheds would be less than the Proposed Action Alternative C or Minimum Access Alternative B (see Appendix 13).

Reduction of motorized route miles within 30 meters of stream channels is moderate as compared to Alternative A. A 23% reduction would occur along intermittent/ephemeral streams and 17% along perennial streams. The reduction on a TMA basis would be 8-55% and 5-100% respectively within the two different categories (ephemeral/intermittent and perennial: TMAs where reductions occur). Compared to Alternative A, a 23% reduction along intermittent streams and 17% reduction along perennial streams would result when considering routes along erosive soils (Table 20).

There would be a lower possibility under this alternative than under the Current Use (No Action) Alternative A that the water quality Standard for Public Land Health would not be met in localized areas. That possibility would be slightly higher than for the Minimum Access Alternative B or Proposed Action Alternative C. Watershed health would improve under this alternative as with the other action alternatives.

Mitigation

The following mitigation measures would apply to all alternatives:

- Route maintenance, proper construction, and/or wet weather closures are to be used to mitigate the effects of routes on water quality and hydrologic function. It is assumed under all alternatives that routes will be adequately maintained and constructed as problems are found. Sediment detention structures would be constructed and cleaned on a regular basis if a severe problem occurs that cannot be mitigated by other means.

- Monitoring of watershed conditions will continue during implementation of general resource management activities as well as route-specific evaluation. A route will be closed or re-routed as soon as possible if it cannot be mitigated in any other way should it be discovered

by monitoring that it is causing unacceptable impacts. Best management practices will continue to be implemented to reduce non-point source pollution from routes.

Finding on the Public Land Health Standard for Water Quality: Watershed conditions on public lands are evaluated through assessments conducted for grazing term permit renewals. Watershed condition benefits as range conditions improve by implementation of best management practices.

Overall water quality and riparian conditions are meeting or moving towards meeting standards throughout the project area. Public lands are located in lower parts of most watersheds, and actions on lands under RGNF jurisdiction and private ownership often have significant influence. For example, a small section of Kerber Creek, a stream on the 303(d) list, is present on public land. Copper, zinc, and cadmium are constituents of concern. Water quality on this stream is impaired by the presence of mine tailings, but has improved since reclamation projects have been completed. Minor reaches of Kerber Creek and the Alamosa River segments on the Colorado 303(d) listing flow through public lands, none of the state-listed impairments are exacerbated by drainage from these lands.

Sediment influx into streams should decrease significantly as routes naturally reclaim and mitigation measures are carried out through specific projects under the Proposed Action Alternative C.

WATER RIGHTS

Affected Environment

Water rights are held by BLM within the project area TMAs, mainly springs. Many of the streams that flow through public lands have private irrigation water rights associated with them upstream and downstream of public lands. These diversions change natural flow systems to a great extent and are factors that are outside of BLM control and management.

Access to developed water facilities on public lands was a major factor considered during analysis of individual route segments and designation of use or closure. Access through public lands to private lands and facilities was considered and provided where necessary.

Sediment delivery to surface waters will decrease with closure or more limited use of routes that cross or run parallel to drainages. This should result in improvement of water quality, including waters diverted by private water right holders.

Environmental Consequences

Administrative access needs were assessed, including access to adjudicated water rights. If any private water right is impacted by the selected alternative, administrative access would be provided.

WASTES, HAZARDOUS OR SOLID

Affected Environment

Easy access to public lands from various communities within the San Luis Valley, disposal fees charged at legal disposal sites and no legal landfill in the southern portion of the San Luis Valley have resulted in significant illegal dumping of materials on public lands. Conejos County has a significant illegal dumping problem in the State of Colorado (Juile Cottter, Colorado Dept. Public Health and Environment, 2005). These dump sites typically consist of household solid waste such as building materials, furniture, appliances, and yard waste. Dumping of hazardous materials such as motor fuels and oils is not uncommon. Both types of wastes are properly disposed of by BLM as an ongoing part of public land management. Annually the BLM spends approximately $10,000 on illegal dump clean-up. Several times this amount could be spent to clean these sites up if funding were available.

Environmental Consequences

Impacts Common to All Alternatives: None of the alternatives will directly result in the generation, use, storage, or disposal of hazardous or solid waste as a direct result of this action. In all action alternatives, the number of new illegal dump sites would decrease as a result of route designations with users having access to fewer routes, routes being limited, the development of environmental education programs, and an anticipated increased presence of field office and law enforcement officers during project implementation. The Current Use (No Action) Alternative A, which would not provide for a managed route system, would exacerbate the existing illegal dumping situation and would make law enforcement difficult. Specific mitigation for hazardous or solid waste is unnecessary. It will remain the policy of the BLM that dumped wastes will be legally disposed of as soon as possible and as funding allows. This will provide a means of protecting the safety of the public land users and land management employees. Legal action will be taken to compensate the government for disposal costs and to deter additional dumping by the public in cases where the person responsible for the dumping can be determined.

WILDERNESS, AREAS OF CRITICAL ENVIRONMENTAL CONCERN, WILD AND SCENIC RIVERS

Affected Environment

Wild and Scenic Rivers

Wild and Scenic Rivers are not present within the planning area.

Wilderness Areas

The Sangre de Christo Wilderness which is USFS and is located on the east side of the San Luis Valley and borders public lands in several locations may be affected by this action. These locations are remote, roadless, and in very steep terrain. This wilderness would not be affected by the BLM travel management plan for these reasons.

Wilderness Study Areas

The San Luis Hills WSA (CO-050-141) is located approximately nine miles southeast of La Jara. The WSA includes approximately 10,240 acres of public lands. The landscape includes an isolated solitary flat topped mesa with associated side slopes that is surrounded by flat open prairie land. Elevations range from 7,700 feet along the lower flat prairie area to 9,475 feet at its highest point. The vegetation is very diverse and includes semi-arid species in the lower elevations and piñon pine stands on the slopes and mesa top.

The initial inventory report identified only minor imprints of man within the San Luis Hills. The travel related imprints of man include old trails or ways traversing John James Canyon on the south side, an old road on the west side that ends at the highest point within the WSA which is a National Oceanic and Atmospheric Administration (NOAA) established permanent marker, and a dead-end trail on the northeast corner of the area. There is a section of state-owned land within the boundary of the WSA located along the north side. There are BLM or county routes that are located along the WSA boundary on the north, east, and west sides.

The San Luis Hills WSA was established in November 1980. The WSA has been managed in accordance to the Interim Management Policy and Guidelines for Lands under Wilderness Review (IMP). These guidelines restrict the use of any motorized and mechanized (mountain bikes) equipment and vehicles in the WSA. The SLRA RMP designated all WSAs within the San Luis Valley as closed to motorized and mechanized vehicles. This designation refers to public use. Other permitted vehicular use is allowed with authorization from the BLM in accordance with the Interim Management Policy.

There are three primary public accesses into the WSA: the John James Canyon (south side), the West Side Trail (west central side), and at Northeast Trail (northeast side along the Rio Grande Breaks road). Public use into the WSA primarily occurs from these three locations. The majority of the use has been occurring at the West Side Trail. The mileage for these trail segments is: John James Canyon (2.4 miles), West Side Trail (4.2 miles), and the Northeast Trail (2.0 miles). The primary activities occurring are hiking, hunting, backpacking, photography, camping, and wildlife watching. The use has increased over the last 20 years but the types of recreational activities occurring have stayed relatively the same.

Areas of Critical Environmental Concern

Background: The SLRA RMP designated nine ACECs in 1989. These areas are to be managed to protect and enhance the special values that were identified in the SLRA RMP. There are eight remaining ACECs.[11] Each ACEC is its own TMA.

[11] The ninth ACEC was Sand Castle WSA, which was adjacent to the Great Sand Dunes National Monument. When the Great Sand Dunes National Monument became a National Park and Preserve in 2000, the Sand Castle WSA was transferred to the National Park Service and became part of the Great Sand Dunes National Park and Preserve.

Cumbres and Toltec ACEC: This ACEC is the corridor and viewshed for the Cumbres & Toltec Scenic Railroad that runs from Antonito, Colorado to Chama, New Mexico that is jointly owned by the States of Colorado and New Mexico. It runs from May to October each year and carries 30-40 thousand passengers each season. It is a significant economic base for each of the nearby towns and those where it begins and ends. Strict conformance to visual standards is imperative with this ACEC as well as the protection of the visual, scenic and historical values associated with this train operation, which dates to the 1880s. Motorized travel is limited to existing routes and locatable mineral activity is not allowed. The activities occurring are driving for pleasure, dispersed camping, target shooting, wildlife observation, photography, visiting historic sites, picnicking, and day hiking. The primary impacts include litter, dumping, noise, user conflicts, and route proliferation.

Rio Grande Corridor ACEC: More than 20 miles of Rio Grande frontage is included within this ACEC. It contains significant natural, scenic and recreational values. Wildlife species use the area as a travel corridor. This area is designated as a SRMA as well, which provides for intensive recreation management. The area has been designated as a Natural Area by Congress. Mineral activity is not allowed in this ACEC. Motorized travel is limited to existing routes. The recreational activities include driving for pleasure, dispersed camping, target shooting, wildlife observation, photography, picnicking, and day hiking. The primary human impacts include litter, vandalism, dumping, noise, user conflicts, and route proliferation.

Elephant Rocks ACEC: The rock formation in this ACEC is unique because of how the giant boulders are distributed on the landscape. In addition to the unique geologic formations, this area has special status plants, as well as unique and/or special scenic, visual, recreational, and other significant resource values. Motorized travel is limited to existing routes. The recreational activities include driving for pleasure, dispersed camping, target shooting, wildlife observation, photography, picnicking, and day hiking. The primary human impacts include litter, dumping, noise, user conflicts, vehicle damage to fossils and plants, and route proliferation.

Trickle Mountain ACEC: This ACEC is managed to provide big game winter habitat for four species: antelope, deer, elk, and bighorn sheep (lambing areas throughout the ACEC). It also has special status plant values. This crucial wildlife habitat is protected by no surface occupancy for minerals, no disposal of land, and seasonal limitation stipulations. The seasonal limitation closes the area from December 15 to March 31 for big game winter range. Motorized travel is limited to existing routes. The recreational activities include driving for pleasure, dispersed camping, target shooting, wildlife observation, photography, picnicking, and day hiking. The primary human impacts include litter, noise, user conflicts, and route proliferation.

Blanca Wetlands Area ACEC: This ACEC involves one of the most important waterfowl production areas in Colorado. This area is a SRMA with emphasis on fishing, watchable wildlife values (viewing wildlife), waterfowl hunting, upland game bird hunting, and other day use recreation. Mineral entry is not allowed. Waterfowl nesting and water bird nesting habitat has a seasonal closure from February 15 to July 15. Motorized travel is limited to designated routes during the season outside the closure period. The public use activities occurring are driving for pleasure dispersed camping, fishing, bird hunting, wildlife observation, photography, picnicking, and day hiking. The primary indirect human impacts include litter, vandalism, noise, and user conflicts.

Los Mogotes ACEC: This ACEC is crucial big game winter habitat, as well as big game birthing habitat and has special status plants values. Mineral extraction is prohibited in the winter months. Motorized travel is limited to existing routes. Recreational activities include driving for pleasure, dispersed camping, target shooting, wildlife observation, photography, picnicking, and day hiking. The primary human impacts include litter, dumping, noise, user conflicts, and route proliferation.

San Luis Hills ACEC: This ACEC contains two isolated solitary mountains within a flat open prairie environment. This landscape provides big game habitat and contains special status plant values. The sensitive plant species is *Neoparrya lithophila*. One of the two mountains is called Flat Top and is adjacent to a wetlands area that is in need of improvement. A 2,000 acre portion of the Flat Top area that has a no surface occupancy stipulation for fluid minerals management, is closed to mineral materials disposal, and is closed to all motorized uses. Motorized travel is limited to existing routes except as otherwise noted. Recreational activities included are driving for pleasure, dispersed camping, target shooting, wildlife observation, photography, picnicking, and day hiking. The primary human impacts include litter, vandalism, dumping, noise, user conflicts, and route proliferation.

Ra Jadero ACEC: This ACEC contains a special status plant (*Astragalus ripleyi*) that is unique to this area. Motorized travel is limited to existing routes. The public activities include driving for pleasure, dispersed camping, target shooting, wildlife observation, photography, and day hiking. The primary indirect human impacts include litter, dumping, noise, user conflicts, and route proliferation.

Environmental Consequences

WSA: The WSA will not be impacted by any of the alternatives.

ACECs: A summary of the route mileages for each of the ACECs are shown in Table 21 below:

Table 21: ACEC Route Mileages

ACEC / Designations	Proposed Action Alternative C		Current Use (No Action) Alternative A	Minimum Access Alternative B		Maximum Access Alternative D	
	Miles	% of Total	Miles	Miles	% of Total	Miles	% of Total
Cumbres and Toltec ACEC							
Open	1.6	17%	9.6	0	0%	6.9	72%
	83% reduction from Current Use			100% reduction from Current Use		28% reduction from Current Use	
Limited	3.6	38%		5.2	54%	1.7	18%
Close	4.4	46%		4.4	46%	1	10%
Rio Grande Corridor ACEC							
Open	12.1	51%	23.9	9.9	41%	13.1	55%
	49% reduction from Current Use			59% reduction from Current Use		45% reduction from Current Use	
Limited	4.6	19%		5.6	23%	3.9	16%
Close	7.2	30%		8.4	35%	6.9	29%
Elephant Rocks ACEC							

Table 21: ACEC Route Mileages								
ACEC / Designations	**Proposed Action Alternative C**		**Current Use (No Action) Alternative A**		**Minimum Access Alternative B**		**Maximum Access Alternative D**	
Open	4.4	26%	16.7		3.7	22%	10.6	63%
	74% reduction from Current Use				78% reduction from Current Use		37% reduction from Current Use	
Limited	0	0%			3.4	20%	0	0%
Close	12.3	74%			9.6	57%	6.1	37%
Trickle Mountain ACEC								
Open	111.4		164.4		88.4		116.7	
Limited	36.4		4.3		46.7		40.6	
Close	46.6		25.7		59.3		37.1	
Blanca Wetlands Habitat Management Area ACEC								
Open	4.6		18.9		4.1		14.3	
Limited	53.5		43.8		50.6		44.8	
Close	4.6				8.0		3.6	
Los Mogotes ACEC								
Open	39.2	49%	80.8		28.4	35%	58.3	72%
	52% reduction from Current Use				65% reduction from Current Use		28% reduction from Current Use	
Limited	24.9	31%			28.4	35%	6.2	8%
Close	16.7	21%			24	30%	16.3	20%
San Luis Hills ACEC								
Open	38.2		59.9		30.7		40.9	
Limited	9.0				15.7		8.0	
Close	13.0		0.3		13.8		11.3	
Ra Jadero ACEC								
Open	7.5	41%	18.1		7.5	41%	9.3	51%
	59% reduction from Current Use				59% reduction from Current Use		49% reduction from Current Use	
Limited	4.7	26%			3.6	20%	2.8	15%
Close	5.9	33%			7	39%	6	33%

Current Use (No Action) Alternative A: The existing network of routes would remain virtually unchanged. Impacts to resources and existing routes would gradually increase as use increases. Impacts to the transportation system would increase with this increased public use requiring more scheduled maintenance and rehabilitation/reconstruction. Immediate need for additional route construction or maintenance would not result. Maintenance would continue at minimal levels by permittees, BLM, and volunteer groups through grants and other outside sources of funding. Routes that have serious resource damage or conflicts could be closed through emergency measures as allowed by 43 CFR 8340.

Cumbres and Toltec ACEC: The Current Use (No Action) Alternative A would continue to allow motorized and non-motorized activities. Existing routes are not causing negative impacts

on the special scenic and recreational values for which the area was designated. Short term, long term, or cumulative impacts to ACEC values are not anticipated as a result of this alternative.

Rio Grande Corridor ACEC: The Current Use (No Action) Alternative A would continue to allow motorized and non-motorized access. The routes within the Rio Grande Corridor ACEC are not currently causing negative impacts on the special natural/scenic/recreational values. The majority of the users are driving the routes and viewing the scenery and wildlife. The dispersed camping along the river is causing some impacts to soils, riparian, and water quality (from sanitation concerns). The camping is not impacting the ACEC's special values. This area is a designated SRMA. The Rio Grande Corridor Plan (January 2000) required closure of some routes with other designated routes to be closed as funding allows. These recommendations have been incorporated in the proposed action. Additional short term, long term, or cumulative impacts to the ACEC values directly resulting from travel routes are not anticipated.

Elephant Rocks ACEC: The Current Use (No Action) Alternative A would continue to allow motorized and non-motorized routes. The human impacts to the Elephant Rocks ACEC include some vehicle impacts to sensitive fossil and plant areas, theft and damage to fossil resources, litter, vandalism, dumping, noise, user conflicts, and new route proliferation. Many of these impacts are directly associated with motorized vehicular routes. This alternative would continue to allow these impacts to occur. This alternative would not meet the goals and management direction set forth by the SLRA RMP. Short term, long term, and cumulative impacts resulting from motorized travel routes would occur and continue to impact the ACEC values.

Trickle Mountain ACEC: The Current Use (No Action) Alternative A would continue to allow motorized and non-motorized access. The authorized routes within the Trickle Mountain ACEC are not causing negative impacts on the special values. There is an existing OHV plan (open-164.4 miles, limited-4.3 miles, closed-25.7 miles), but user-created routes continue to be a problem. The majority of the users are driving the routes and viewing the scenery and wildlife with significant use during the hunting seasons. The dispersed camping is causing some impacts to soils, riparian, and water quality (from sanitation concerns). Short term, long term, or cumulative impacts to the ACEC values directly resulting from the use of travel routes are not anticipated as a result of this alternative.

Blanca Wetlands Habitat Management Area ACEC – This area is a designated SRMA. The Current Use (No Action) Alternative A would continue to allow motorized and non-motorized access. The routes are not causing negative impacts on the special values. There is an existing OHV plan (open-18.9 miles, limited- 43.8 miles) which limits motorized vehicles to the primary designated route system which includes the open mileage. The limited road mileage is an extensive service road system for maintenance purposes and is used for BLM administrative purposes. The service road system is open to public for non-motorized travel. There is a public access closure from February 15 to July 15 for waterfowl/shorebird nesting. The majority of the users are driving the routes viewing the scenery and wildlife. The area is a major waterfowl hunting area during the fall season. Short term, long term or cumulative impacts to the ACEC values directly resulting from the use of travel routes are not anticipated as a result of this alternative.

Los Mogotes ACEC - The Current Use (No Action) Alternative A would continue to allow motorized and non-motorized access. The existing routes within the Los Mogotes ACEC are not causing negative impacts on the special big game winter range values. The majority of the users are driving the routes and viewing the scenery and wildlife. The dispersed camping is causing some impacts to soils and water quality (from sanitation concerns) but the camping is not impacting the ACEC's special wildlife or plant values. Short term, long term, or cumulative impacts to the ACEC values directly resulting from the use of travel routes are not anticipated as a result of this alternative.

San Luis Hills ACEC and Ra Jadero ACEC - The Current Use (No Action) Alternative A would continue to allow motorized and non-motorized access. The routes within these ACECs are not causing negative impacts on the special big game and plant values. The majority of the users are driving the routes viewing the scenery and wildlife. Short term, long term, or cumulative impacts to the ACEC values resulting from the use of travel routes are not anticipated as a result of this alternative.

Proposed Action Alternative C: This alternative would enhance and maintain the resource values for each ACEC. This alternative would meet the goals and management objectives set forth in the SLRA RMP. See above table comparing Alterative A to Alternative C. Alternative C reduces the resource impact from 392.3 miles of open routes to 219 miles of open routes. Short term, long term, or cumulative impacts would have a reduced effect on those ACEC values resulting from the use of travel routes in this alternative.

Minimum Access Alternative B: The Minimum Access Alternative B would reduce motorized access and reduce impacts to resources. This alternative would meet the goals and management direction set forth by the SLRA RMP. See the table above comparing the route mileages between Alternative A and Alternative B. Alternative B reduces the resource impact from 392.3 miles of open road to 172.7 miles of open road. Short term, long term, or cumulative impacts would have the largest reduced effect on those ACEC values resulting from the use of travel routes in this alternative.

Maximum Access Alternative D: The Maximum Access Alternative D would provide the most motorized access of the action alternatives. See the table above for a more detailed comparison between Alternative A and Alternative D. This alternative would not meet the goals and management objectives set forth in the SLRA RMP. Short term, long term, and cumulative impacts related to the use of travel routes would occur and impact the ACEC values.

WILDLIFE - TERRESTRIAL (includes information related to Public Land Health Standard 3)

Travel management plan in the San Luis Valley planning area has the potential to affect a variety of wildlife species. The focus in this analysis is provided on native ungulates (big game species), large carnivores such as black bear and mountain lions, waterfowl/shorebirds, and small mammals such as Gunnison's prairie dog. A more general analysis is provided for avian species such as raptors and songbirds, and specialized groups such as amphibians and reptiles.

The focal species analyzed are selected due to their local importance and sensitivity to travel management issues, and because specific habitat mapping is available to compare differences between the alternatives. Information for big game species and large carnivores is extracted from the Natural Diversity Information System (NDIS) mapping system (i.e., DOW), from various DOW reports, and from personal communication with local DOW officials regarding population trends. Information for Gunnison's prairie dog was developed by the DOW with input from local agency biologists regarding colony status and size. These species groups will be analyzed with a focus on the amount of core habitat that is available in each alternative because of their need for habitat security in foraging, reproductive areas, and during critical winter periods when environmental stress levels are high. The amount of core habitat available in each alternative has been determined by applying a disturbance distance around the level of human use associated with each route type (see section Wildlife - Threatened and Endangered Species, below). Core habitat may provide characteristics similar to roadless areas because they do not provide routes to motorized vehicles and are expected to offer greater habitat security for foraging, reproduction, and other life history requirements.

Information on other small mammals, reptiles/amphibians, raptors, and songbirds are primarily compiled from local databases and observation records from the BLM, RGNF, DOW, and Colorado Natural Heritage Program (CNHP). A detailed analysis of these species is not necessary due to the widespread nature of these animals and their habitats and the fact that most habitat concerns are covered by other focal species. There is an abundance of scientific literature available concerning the potential influences of travel management activities on these species and general comparisons between alternatives are provided. Generalities concerning potential effects on these species can be assessed by evaluating the amount of core habitat that is available in each alternative by habitat type. Sixteen habitat types have been established based on the criteria developed for the Colorado Land Bird Conservation Plan (Beidleman, 2000).

Table 22 explains the acres of habitat type. This table compares the amount of public lands to private, state, and other federal lands. BLM manages a large land base which has important habitat for numerous species.

Table 22: Estimated Acres of Habitat Types in the Planning Area

Type	Acres in Planning Area	% of Planning Area	Acres on Public Lands in Planning Area	% of Public Lands in Planning Area	% on Public Lands*
Agriculture	345,001	14.397	185	0.036	0.008
Alpine/ Subalpine	29,425	1.228	11,791	2.278	0.492
Aspen	11,266	0.470	2,393	0.462	0.100
Cliff/ Rock/ Talus	22,662	0.946	6,491	1.254	0.271
Grassland	351,289	14.659	60,131	11.620	2.509
High Elevation Riparian	86	0.004	9	0.002	0.000
Low Elevation Riparian	163,202	6.810	2,789	0.539	0.116
Mixed Conifer	650	0.027	220	0.043	0.009
Mountain Shrub	113,520	4.737	59,018	11.405	2.463
Piñon/Juniper Woodland	102,466	4.276	66,328	12.817	2.768
Ponderosa Pine	47,502	1.982	27,095	5.236	1.131
Residential	4,484	0.187	0	0.000	0.000
Sagebrush Shrubland	45,605	1.903	7,137	1.379	0.298

Semi-Desert Shrubland	1,095,404	45.711	258,571	49.966	10.790
Spruce-Fir	51,017	2.129	13,425	2.594	0.560
Unclassified	2,825	0.118	1,384	0.267	0.058
Wetlands**	218,446	9.12	3,809	0.74	0.16
**Percent of Acres of Planning Area habitat type (column 2) that occurs on public lands* ***Using the USFWS Wetlands and Deepwater Habitats Classification/National Wetlands Inventory Mapping.*					

These 16 habitat types are described below in order of the percentage of area occupied on public lands as identified in column 5 of Table 22 above:

- *Semi-Desert Shrubland:* Semi-desert shrubland is the most extensive habitat type and occurs on approximately 258,571 acres (50%) of the public lands. This habitat type is typical of cold, arid, interior lowlands and is characterized by shrub species such as fourwing saltbush, greasewood, hopsage, and shadscale. Understories and interspatial areas often contain grasses such as blue gramma and squirreltail as well as numerous seasonal forb species. Several small mammal species may occupy semi-desert shrublands including kangaroo rats, deer mouse, Wyoming ground squirrel, and Gunnison's prairie dog. Large carnivores such as bear and cougar do not typically frequent semi-desert shrublands. They may utilize them on a seasonal basis, especially where habitat security and prey species are available. Some native ungulates occupy semi-desert shrubland at least on a seasonal basis, with antelope and mule deer likely being the most prevalent. Elk will frequent this habitat type when food resources, water, and habitat security are available. The diversity and density of bird species is typically low in semi-desert shrublands with typical species assemblages characterized by horned lark, western meadowlark, and mourning dove. Semi-desert shrublands often support specialized species such as loggerhead shrikes and mountain plover. It may provide important habitat for several raptors of local concern, such as burrowing owl, ferruginous hawk, prairie falcon, and golden eagle. Areas that contain water are particularly important to wildlife species in the semi-desert shrublands, including several local bat species that make extensive use of this habitat type where wetlands and riparian habitats offer high insect densities for foraging. Semi-desert shrublands support the third-highest diversity of reptile species of habitat types found in Colorado, including unique species such as the short-horned lizard and the western rattlesnake. Amphibian species of concern, such as the northern leopard frog occur in semi-desert shrublands where water is available. Other unique amphibian species such as the plains spadefoot toad utilize upland areas within this habitat type, and may be particularly vulnerable to off-road vehicle traffic.

- *Piñon/Juniper*: The piñon/juniper habitat type occurs on approximately 66,328 acres (13%) of the public lands. Piñon/juniper is often the first woodland habitat encountered as routes travel upwards in elevation from the semi-desert shrubland. This habitat type generally occurs on gentle to very steep slopes from about 7,600 to 9,500 feet in elevation and is often associated with cliffs and rock outcroppings. Piñon/juniper habitat is very important to avian species and supports the largest assemblage of nesting bird species of any upland vegetation type in the western United States. Typical bird species that utilize local piñon/juniper habitats include the bushtit, Clark's nutcracker, and mountain chickadee. Piñon/juniper provides important habitat for several local species of

concern such as piñon jay, Swainson's hawk, golden eagle, and prairie falcon. Piñon/ juniper habitat is utilized by all big game species at least on a seasonal basis and may provide permanent habitat for mule deer and elk when food and water resources are available. Piñon/juniper habitat is frequently associated with bighorn sheep when in proximity to the cliff/rock/talus habitat type. Numerous small mammal species may occupy piñon/juniper including the deer mouse, bushy-tailed woodrat, white-footed mouse, and white-tailed jackrabbit. Large carnivores may occupy this habitat type on a seasonal basis. This habitat type may be particularly important to mountain lions especially when prey species are available. The diversity of reptile species in piñon/ juniper habitats in Colorado is nearly as high as that encountered in semi-desert shrublands, and species such as the western rattlesnake may be the most common. Piñon/ juniper habitat supports the highest diversity of bat species in Colorado and is particularly valuable where wetlands and riparian habitats occur. Bat species such as the fringed myotis and Yuma myotis are known to utilize piñon/juniper trees as roost sites, with associated cliff and rock habitat also valuable as roosting areas. Amphibian species are scarce in piñon/juniper habitats except where water is available.

- *Grasslands*: The grassland habitat type occurs on approximately 60,131 acres (12%) of the public lands. Western wheatgrass is a primary component of this habitat type near the valley floor, with Arizona and Thurber fescue dominating at higher elevations. Numerous small mammal species such as voles and shrews utilize this habitat type, as do several fossorial mammals such as marmots, badgers, and pocket gophers, which are frequently found along grassland/rock edges. Grasslands are not a preferred habitat type for large carnivores such as bear and mountain lion. These species will utilize grasslands at least seasonally if habitat security is provided. Grasslands are particularly important to native ungulates (e.g., elk, deer, pronghorn) for foraging. All of the big game species utilize different elevational grasslands on a seasonal basis. Bighorn sheep may only frequent grasslands when they are in close proximity to cliff/rock habitat. All big game species may be displaced from some grassland habitats when repeated human disturbances occur. Grasslands are seasonally important to native ungulates as calving/fawning areas, and representative species such as elk may establish traditional calving areas where the vegetation is tall and in close proximity to water. The diversity and density of bird species in grasslands may vary depending upon elevation. In lower elevation grasslands, species such as mountain plovers and burrowing owls may utilize grasslands or grassland/semi-desert fringes. In mid to upper elevations, species such as vesper and savannah sparrows are encountered. Most broad-winged raptor species frequently hunt in grasslands due to the high density of small mammal species. Montane grasslands do not support many species of reptiles or amphibians except where water, cliff/rock, or other unique features are present. Several local bat species may forage over grasslands but do not reproduce or roost unless trees, cliffs, or other structures are present. Wildlife species that do reproduce in grasslands may be particularly vulnerable to off-road vehicle traffic because they frequently nest or den on the ground.

- *Mountain Shrubland*: The mountain shrubland habitat type occurs on approximately 59,018 acres (11.4%) of the public lands. Gambel oak is a primary component of this habitat type, although sagebrush, currants, mountain mahogany, and other shrub species may be inter-mixed. Mountain shrubland habitat provides valuable food and cover for

many wildlife species, and some shrub species produce edible fruits and mast crops. Fewer small mammal species utilize mountain shrubland habitats. Some species such as Nuttall's cottontail may reach high densities. Mountain shrublands are not heavily utilized by most big game species. Mule deer may frequent mountain shrublands at least seasonally and depend upon some of the shrub species for browsing. Mountain shrublands may be frequently used by some large carnivores, and may be particularly valuable to black bear on a seasonal basis due to the berries and mast produced. At least 24 bird species in Colorado utilize mountain shrublands. Local bird species that are closely associated with this habitat type include the green-tailed and spotted towhee, Virginia's warbler, black-headed grosbeak, and dusky flycatcher. Many broad-winged raptor species may hunt where mountain shrubland and grassland edges occur, and forest raptors (accipiter hawks) such as northern goshawks and Cooper's hawk may utilize mountain shrublands at least seasonally. Mountain shrublands support a fairly high diversity of reptile species, and may provide habitat for rare species such as the milk snake and smooth green snake. The reverse is true (i.e., low diversity) for amphibians except where water sources are present. It is probable that some local bat species forage over mountain shrublands. Reproductive habitat is generally not present in this habitat type and the diversity of bat species is not as high as in other low-elevation habitats.

- *Ponderosa Pine:* The ponderosa pine habitat type occurs on approximately 27,095 acres (5.2%) of the public lands. This habitat type occurs at elevations of about 7,600 to 10,500 feet and may be intermixed with other species such as piñon/juniper and Douglas fir. Ponderosa pine habitat generally contains fewer small mammal species than lower elevation habitat types, but does frequently support species such as long-tailed and meadow vole, Colorado chipmunk, Abert's squirrel, and porcupine. Ponderosa pine is used extensively by big game species such as mule deer and elk and may be particularly important as transitional habitat between winter and summer range areas. Ponderosa pine habitats are important to both black bear and mountain lion at least on a seasonal basis. Numerous local bird species utilize ponderosa pine habitats including several woodpeckers and bird species of special concern. Examples of avian species that are obligates to or closely associated with ponderosa pine include flammulated owl, pygmy nuthatch, and Williamson's sapsucker. Some broad-winged raptors such as red-tailed hawks frequently nest in ponderosa pine; forest accipiter hawks (sharp-shinned, Cooper's, and goshawk) begin to appear more frequently in conifer forest types at least on a seasonal basis. Ponderosa pine can support a fairly high diversity of reptile species that rivals that of mountain shrublands, particularly when inter-mixed or in close proximity to features such as cliff/rock habitat, piñon/juniper, or mountain shrublands. Conversely, the diversity of amphibians is usually low even where water sources are present. The diversity of local bat species that utilize ponderosa pine habitat is high and exceeded only in the piñon/juniper habitat type. The presence of large snags is particularly important to some bat species as roosting and reproductive habitat. These habitat features may be indirectly influenced by travel routes due to firewood gathering, which is often facilitated in the ponderosa pine type by the gentle and rolling terrain.

- *Spruce-Fir:* The spruce-fir habitat type occurs on approximately 13,425 acres (2.6%) of the public lands and generally occurs at elevations of about 8,600 to 12,000 feet. The spruce-fir habitat type supports fewer small rodent species than lower elevation montane

forests except where montane grasslands and meadows occur. Spruce-fir supports the highest densities of several other important small mammal species such as red-backed voles, red squirrels, and snowshoe hare. Some large carnivores, such as mountain lion, may not be as numerous in spruce-fir as in lower montane forest habitat. Other large carnivores such as black bear and Canada lynx utilize spruce-fir as their preferred habitat type for foraging and breeding. Spruce-fir forests serve as primary summer range for big game species such as elk and mule deer, and may support elk calving areas when meadow habitats are intermixed. Spruce-fir forests in the Southern Rocky Mountains support fewer insectivorous birds and neotropical migrants. The avian community has a comparatively large number of seed-eating birds, which is a reflection of the abundant cone-seed crops. Bird species that commonly occupy spruce-fir forests include gray jay, mountain chickadee, red-breasted nuthatch, hermit thrush, pine siskin, olive-sided flycatcher, golden-crowned and ruby-crowned kinglet. Unique avian species of concern include Hammond's flycatcher, three-toed woodpecker, and brown creeper. Broad-winged raptor species are not common in spruce-fir forests although Swainson's and red-tailed hawks may occur along grassland/meadow edges on a seasonal basis. Spruce-fir forests are important reproductive habitats for all of the forest-dwelling accipiters and are the primary habitat for one unique species, the boreal owl. Spruce-fir forests support very few reptile or amphibian species; one amphibian species of concern, the boreal toad, occurs primarily in wetlands and riparian zones within this habitat type and utilizes upland areas within the spruce-fir zone. Spruce-fir forests are utilized by only a few local bat species although one species, the hoary bat, may occur most frequently in this habitat type.

Alpine/Subalpine: The alpine/subalpine habitat type occurs on approximately 11,791 acres (2.3%) of the public lands area at elevations beginning at about 11,000 feet. Alpine/subalpine habitats support the lowest diversity of small mammal species in Colorado, although montane voles, yellow-bellied marmots, and a few other species may be present. Unique species such as the pika may occur where rock/talus habitat is available. Elk and mule deer may utilize alpine/subalpine habitat during the summer months. Elk most likely utilize these habitats more than mule deer and do so infrequently. Large carnivores such as black bear and mountain lion occur infrequently in alpine/subalpine habitats, although they may use them occasionally on a seasonal basis. Alpine/subalpine habitats support very few bird species because of the severe climate. Locally, the American pipit, white-tailed ptarmigan, and brown-capped rosy finch may utilize this habitat on a seasonal basis. Alpine/subalpine habitats support very few reptile or amphibian species, although boreal toads may find suitable habitat where high-elevation lakes or streams occur. According to Fitzgerald et al. (1994), bat species are not known that utilize alpine/subalpine habitats. Alpine/subalpine habitat is particularly sensitive to human impacts. Alpine/subalpine soils and vegetation can be easily damaged by the passage of motor vehicles, mechanized, and equestrian traffic as well as pedestrian traffic.

- *Sagebrush Shrublands:* The sagebrush shrubland habitat type occurs on approximately 7,137 acres (1.4%) of the public lands. Local sage shrublands are characterized by extensive stands of mountain big sagebrush and black sagebrush, although other shrub species such as rabbit brush and currants may be present. Although sagebrush shrublands

comprise a relatively small percentage they are an extremely important habitat type for wildlife species, especially birds. This is because many of the birds that occur in this habitat type are sagebrush obligate species that exhibit sensitivity to habitat edges and fragmentation. Many of these species nest on or near the ground beneath the shrubs, and are vulnerable to vehicle traffic. Examples of local sagebrush obligates include sage sparrow, Brewer's sparrow, and Gunnison's sage-grouse, the latter of which is a Candidate species for listing under the ESA. Sagebrush shrubland habitats support many of the same small mammal species as mountain shrublands and piñon/juniper habitats. Some jackrabbit and cottontail species may reach high population densities. Sagebrush shrubland habitats in Colorado are not particularly important to big game species except antelope, which may depend on sagebrush browse for winter survival. Mule deer may occasionally utilize sagebrush as a browse species during winter, although too much sage browse may be detrimental to the species. Sagebrush shrublands are not frequented by most large carnivores, although species such as coyotes and perhaps mountain lion may utilize them when food resources are present. Sagebrush habitats, as with mountain shrublands, can support a high diversity of reptile species, particularly when inter-mixed with semi-desert shrublands, rock/cliff habitat, and other dry habitat types. Amphibians are generally absent except where water sources are present. It is probable that some local bat species forage over sagebrush shrublands although reproductive habitat is generally not present and the diversity of bat species is not as high as in other low-elevation habitats.

- *Cliff/Rock/Talus:* The cliff/rock/talus habitat type occurs on approximately 6,491 acres (1.3%) of the public lands. This habitat type is usually not vulnerable to direct impacts from motor vehicle travel; it may support several unique wildlife species that may be particularly sensitive to indirect human disturbances. For example, although the number of bird species that utilize cliff/rock habitat may be small in comparison to other habitats, these species are highly specialized. The number of suitable nest sites is finite and may be fully occupied on a seasonal basis. Any loss of nesting habitat due to human disturbances may result in a direct reduction in the population. Local bird species that utilize this habitat type include prairie and peregrine falcon, golden eagle, raven, white-throated swift, and black swift. Mexican spotted owls nest in cliff habitat where the species is present in Colorado. All of these birds are species of conservation concern for Bird Conservation Region (BCR) 16 (see Migratory Bird Section, Table 46) or federally listed species except for the raven and white-throated swift. Many small mammal species utilize cliff/rock/talus habitat in association with neighboring vegetation types. Few species are obligates to this habitat type. Pika is an obligate species to talus habitat at high elevations and the bushy-tailed wood rat and porcupine commonly use cliff habitats in lower elevations. Cliff/rock/talus habitats are not particularly important to big game species except bighorn sheep, which depend upon cliff habitat for lambing areas and escape cover. Most large carnivores are not closely associated with cliff/rock/talus habitats. Mountain lion, an exception, primarily utilizes rocky foothills and cliff areas at mid-elevations. Cliff/rock/talus habitats can support a fairly high diversity of reptile species, particularly when inter-mixed with dry vegetation types. Examples include several local lizard species and the western rattlesnake, the latter of which commonly dens in broken rock habitat. Amphibians are generally absent from rocky habitat except where water pools are present. Cliff/rock habitat is very important to several local bat

species and is often utilized for day and night roosts by species such as the Yuma and fringed myotis. Cliff habitat may support caves or abandoned mines that provide habitat for maternity roosts or hibernacula for species such as Brazilian free-tailed bats or the Townsend's big-eared bat.

- *Wetlands, Low-Elevation Riparian, and High-Elevation Riparian:* Wetlands, low-elevation riparian, and high-elevation riparian habitats represent three different riparian habitat types that occupy about 3,809 (0.74%), 2,789 (0.54%) and 9 acres (0.002%) respectively of the public lands. Although they represent a small portion of the landscape (1.3% combined), they are an extremely important habitat type for all species of wildlife. The Blanca Wetlands ACEC and the McIntire/Simpson property comprise the majority of the wetlands and support at least 15 bird species of concern. Low-elevation riparian habitat generally surrounds rivers and streams below about 8,000 feet and is dominated by cottonwood galleries, under stories of willows, and other riparian shrubs. This habitat type supports more species of birds during the calendar year than any other habitat type, and includes species of special concern such as Lewis' woodpecker and southwestern willow flycatcher. High-elevation riparian habitats occur above 8,000 feet and are locally represented by a mid-elevation riparian zone referred to as foothills riparian habitat. This habitat type comprises a very minor portion of the project area but supports a high diversity of bird species. All riparian habitat types provide important habitat for numerous species of small mammals, native ungulates, and large carnivores, all of which may utilize riparian zones disproportionately more than upland habitat types. All wetlands and riparian habitats support a high number of amphibian and reptiles. One species, the boreal toad, has potential habitat present in high-elevation riparian above 8,500 feet. All local bat species concentrate around riparian habitats for foraging and drinking purposes, with slow-water pools and open wetlands being especially important. All wetlands and riparian habitat types are vulnerable to soil and vegetation damage from motor vehicles and high levels of human disturbance can occur from foot travel and recreational activities.

- *Aspen:* The aspen habitat type occurs on approximately 2,393 acres (0.5%) of the public lands. This habitat type will not be discussed in detail because it comprises such a small portion of the project area. Where aspen habitats do occur, they are extremely important to numerous wildlife species, especially birds and small mammal species. For example, many primary and secondary cavity-nesting bird species are commonly found in aspen stands. A few species, such as the red-naped sapsucker, occur primarily in this habitat type. All local accipiter hawks utilize aspen stands. One species, the northern goshawk, nests primarily in aspen on a local basis. Aspen habitats are heavily utilized by all native ungulates, particularly elk and mule deer, which use aspen habitats for food and reproductive habitat. Some large carnivores, such as black bear, are attracted to aspen habitats for the rich food resources they provide. Aspen habitats provide important foraging habitat for the Canada lynx, which is attracted to early-successional aspen in pursuit of snowshoe hares. Aspen habitats do not support a high diversity of reptile and amphibian species and most bat species do not utilize aspen as readily as other habitat types. Aspen stands are often vulnerable to motor vehicle travel due to the moist soils and lush vegetation that occurs there, and regeneration capabilities can be heavily influenced by recurring human uses.

- *Mixed-Conifer:* The mixed-conifer habitat type will not be discussed in detail because it occurs on such a small portion of the public lands (220 acres or 0.04%). Mixed-conifer forest is a transitional habitat type between the drier coniferous forest types (i.e., ponderosa pine) and the moister spruce-fir forest. Mixed-conifer supports many of the same species that occur in the other coniferous forest types although some specialized species, such as brown creeper, may reach its highest densities in this habitat type. Mixed-conifer habitats commonly support aspen and grassland associated species since these habitat types are often intermixed on the landscape.

- *Agriculture, Residential, and Unclassified Habitat Types:* The agriculture and residential habitat types represent a very small portion of the public lands (185 acres and 0 acres, respectively). An additional 1,384 acres (0.3%) are unclassified. These habitat types will not be discussed in detail since they occupy such a small portion of the project area and are of minimal importance to local wildlife species.

Elevation and exposure, and their effects on soil moisture, strongly influence the plant communities and available habitat types. The habitats that surround the valley floor primarily border private lands and are generally more fragmented due to the increased presence of human occupation. Roads, subdivisions, agriculture, towns, and other human development and infrastructure are prevalent features on the landscape thereby making core or refugia habitat rare. The 16 habitat types used in this analysis represent the affected habitat environment that is used by the focal species groups and other wildlife that occur.

Focal Species Groups

Native Ungulates/Big Game Species: Bighorn sheep, elk, mule deer, and pronghorn antelope occur frequently throughout the project area and are considered big game focal species. A general description of the affected environment for these species follows:

Bighorn Sheep: Rocky Mountain bighorn sheep are associated with high mountains and steep canyons. They typically occur only on steep, precipitous terrain in part because of human impacts. Bighorn sheep prefer high-visibility (i.e., open) habitat dominated by grass, low shrubs, and rock cover. The bulk of their diet is grasses and grass-like plants, browse, and some forbs. Bighorn sheep are gregarious, social mammals that have a high degree of site fidelity. This keeps a herd close to areas that are familiar and leads to slow rates of expansion. It renders them vulnerable to increased stress levels when a disturbance occurs. Bighorn sheep may make relatively short seasonal migrations from summer to winter range. Many populations make this migration through a series of deliberate, short-distance moves, using favored habitat along the way. Barriers to movement include large expanses of timber or dense brush, fences, and occasionally roads, as well as large rivers and wide valley floors. Vegetative succession and diseases have led to declines in sheep populations in some areas.

Bighorn sheep are common near Trickle Mountain, Elephant Rocks, La Garita Canyon, Alamosa Canyon, Hot Creek Canyon, La Jara Canyon, and the Sangre De Cristo Mountain Range Appendix 16A identifies the winter concentration areas for Bighorn Sheep.

Mule Deer: Mule deer occupy all habitat types from grasslands to alpine tundra (Appendix 16B). They reach their greatest densities in shrublands on rough, broken terrain that provide abundant browse and cover. Fall and winter diets consist of browse from a variety of trees and shrubs. Mule deer frequently use private wet hay meadows, especially in the spring. Mule deer are migratory, where they summer at higher elevations and move down slope as fall approaches. Deer move to lower elevations and forage on more protected south-facing exposures during midwinter. This latter movement is directly related to the severity of the weather. Deer densities are slowly increasing after several years of below average populations.

Pronghorn Antelope: Pronghorn antelope occupy shrubland habitats and grasslands. Pronghorn have been observed in the foothills within moderately dense piñon/juniper woodland, ponderosa pine woodland, and in areas not noted previously in historical records. Browse species such as winter-fat, four-wing saltbush, and skunk bush sumac are considered important year-round and critical winter forage for pronghorn. Vehicle collisions and habitat fragmentation from wire fencing along roadways and through migration routes are a management concern for pronghorn.

Rocky Mountain Elk: Elk can be found in most habitat types and elevations at least on a seasonal basis (Appendix 16C). Recent expansions have occurred into shrublands on rough, broken terrain that provide abundant browse and cover. Elk are considered generalist feeders that utilize shrubs, grasses, and forbs. Calving grounds are carefully selected by the cows and are generally in locations where cover, forage, and water are found together. Elk tend to inhabit higher elevations during spring and summer and migrate to lower elevations for winter range. Elk form large mixed herds on favored winter range. Mortality is due mostly to hunting, winter starvation, and predation on calves. Routes that provide increased human access can lead to a higher rate of vulnerability during the hunting season(s) and disturbances on preferred foraging grounds.

Native Ungulates/Big Game Species - Critical Winter Wildlife Range: Crucial big game winter range will be managed to sustain available winter forage for 17,600 big game animals according to the SLRA RMP (1991). Motorized vehicles and other human disturbances would be controlled while the animals are on their winter range. The areas and route closures needed to meet winter range objectives were not specified or designated and the closures were not uniformly implemented under the RMP. The winter range closures in the RMP addressed severe winter range and general winter range which resulted in restricted access to approximately 90% of the public lands each year from winter to early spring. The variability of each season led to ineffective closures that, at times, did not benefit big game species and could not be enforced. The BLM will coordinate the winter range closures with the local DOW office on an annual basis to determine what closures, if any, need to be implemented each year to meet the needs of big game species.

Seasonal closures for critical winter wildlife habitat, if needed, would occur on individual areas from January 1st to April 30th. If the DOW determines that the December hunting season is unnecessary and is eliminated, or if population objectives have been met, the start date for any annual critical wildlife winter range closures would be adjusted to December 1st.

January through April is the most stressful time for big game species and disturbances from motorized vehicles and winter recreation on critical winter wildlife habitat can be detrimental to the health and reproduction of native ungulates. The BLM will base “critical winter wildlife

habitat" on the activity mapping information from the DOW NRIS (DOW 8-05-2004). The NRIS database, winter concentrations, and concentration areas for resident populations of pronghorn antelope, mule deer, elk, and bighorn sheep are used to determine which winter closure areas might provide the greatest benefit to wildlife. A resident population area is generally defined as: "*An area used year-round by a population. Individuals could be found in any part of the area at any time of the year; the area cannot be subdivided into seasonal ranges. It is more likely included within the overall range of the larger population.*" (CDOW NDIS database)

A winter concentration area is defined as: "*That part of the winter range of a species where densities are at least 200% greater that the surrounding winter range density during the same period used to define winter range in the average five winters out of ten*".

A concentration area is defined as: "*That part of the overall range where higher quality habitat supports significantly higher densities than surrounding areas. These areas are typically occupied throughout the year and are not necessarily associated with a specific season*".

The "critical" winter range polygons used from the DOW WRIS layers for this analysis consists of:

1) Rocky Mountain bighorn sheep: Winter concentration areas.
2) Pronghorn antelope: Winter concentration areas and resident population area.
3) Rocky Mountain Elk: Winter concentration area and resident population area.
4) Mule deer: Winter concentration areas, resident population, and concentration area.

Raptors: At least 20 raptor species have been documented as occurring regularly in the planning area. Examples of species of special concern include golden eagle, peregrine falcon, prairie falcon, Swainson's hawk, northern goshawk, northern harrier, ferruginous hawk, short-eared owl, long-eared owl, burrowing owl, barn owl, and flammulated owl.

Several known active and inactive raptor nests and eyries occur. The locations of these sites are on file at the San Luis Valley Public Lands Center but will not be disclosed due to the sensitivity of most raptors to human disturbances during the nesting season. The cliff/rock/talus habitat type occurs extensively and is particularly important to golden eagles, prairie falcons, and peregrine falcons. Wetland areas such as Blanca wetlands, McIntire/Simpson, and the La Garita Creek often provide important peregrine falcon foraging habitat. They will also forage over adjacent coniferous and riparian forests. Prairie falcons commonly utilize smaller cliff and rock habitats. Red-tailed hawks are the most common broad-winged hawk and are found at all elevations and within most habitat types.

Forest hawks (accipiters) such as Cooper's hawks, northern goshawks, and sharp-shinned hawks occur in moderate numbers but have not been the focus of extensive surveys. Other species such as the ferruginous, rough-legged, and Swainson's hawks, burrowing owls, and short-eared owl are primarily plains species that would be expected to only occasionally occur. These species if present would most commonly occur on public lands at low elevations and on adjacent agricultural lands where small rodents are often abundant. Prairie dog towns on public or private

lands would attract most low-elevation raptors due to the abundant food supply. Many raptor species such as northern harriers and bald eagles are often found near wetland areas and water sources (reservoirs, ponds, lakes, streams, and rivers) where there is adequate perching and foraging habitat. Other raptors such as boreal, saw-whet, and ferruginous owls are primarily found in montane to sub-alpine habitats where aspen, mixed conifer, and spruce-fir stands are available. Great horned owls are a relatively common species found in most habitats. Northern harriers and osprey have been observed in the valley bottom and at Blanca Wetlands. Ospreys are rare and uncommon.

Reptiles/Amphibians: Amphibians are most commonly found near water sources. Reptiles may frequent habitats near water but are most commonly found in arid grasslands and shrublands. Some local species tend to have a very broad distribution and occur in a wide variety of habitats at low to moderate elevations; examples include tiger salamander, horned lizard, bull snake, western rattlesnake, and western terrestrial garter snake. Other species, such as the boreal toad, are more narrowly restricted to specific locations and habitat types. Climate and habitat diversity tend to determine the distribution and number of reptile and amphibian species that occur in specific areas, with dry upland habitats and rocky canyons supporting the highest species richness were water is present (Hammerson, 1999). Amphibians are often tied to seasonal precipitation, playas, temporary pools and wetlands, and creeks, rivers, or puddles for breeding and foraging. Some species can inhabit extremely dry habitat types at least on a seasonal basis. Amphibians and reptiles generally forage for insects and small mammals but may take other herptofauna.

Small Mammals and Carnivores, including Gunnison Prairie Dog: Small mammals and carnivores are found in every habitat type. The small mammals are a main prey base for the smaller carnivores and both species groups may serve as prey for raptors and larger carnivore species. Small mammals often reproduce in underground burrows or in tree cavities or roots and generally forage on insects, lichens, and plant matter. Examples of local small mammals include several species of voles, shrews, mice, squirrels, rabbits, hares, and cottontails. Unique local species include the pika and the Gunnison's prairie dog. Examples of small carnivores include skunks, foxes, bobcats, coyotes, and badgers.

Gunnison's prairie dog is a diurnal rodent that inhabits grasslands, agricultural areas, semi-desert, and montane shrublands. They forage on grasses and sedges as well as flowers and succulent parts of forbs and shrubs. Their predators include badgers, golden eagles, coyotes, bobcats, red-tailed hawks, and domestic dogs. Plague and poisoning have had major impacts on the distribution. Prairie dogs are considered a small game species by the DOW and harvest numbers are variable (Fitzgerald et al., 1994). Gunnison's are the only species of prairie dogs found within the planning area. A mapping effort for prairie dogs was recently completed by the DOW and local biologists in 2003, and revised for this analysis to incorporate new information (Appendix 16D). Mapped colonies may be active, suitable, or inactive depending on information pertaining to location, disease, hunting pressure, and/or eradication. Suitable habitat may be colonized if foraging habitat is available.

There are existing prairie dog colonies on public lands in Alamosa, Rio Grande, Conejos, Saguache, and Costilla counties. Gunnison's prairie dogs would most likely be affected by any decisions made in the TMP. The existing prairie dog colonies are not affected by the routes but

by the "recreational shooting" for which the routes provide access. There are potential impacts to prairie dog colonies from off-road vehicle travel across occupied habitat, and general disturbances from heavy traffic near the colonies.

Large Carnivores/Black Bear and Mountain Lion: In Colorado, the black bear is most common in montane forests and shrublands, and in subalpine forests at moderate elevations. Areas that contain well-developed stands of oak brush or berry-producing shrubs, such as serviceberry and chokecherry, are particularly important to black bear. Black bears are omnivorous and their diet and the type of habitats they utilize depend largely on the kinds of food that are seasonally available. Black bears are secretive animals that typically remain close to rough topography or dense vegetation that provides escape cover. Numbers are usually low in any particular locale, making them difficult to census and study. Black bears are locally common in suitable habitats and occur in all habitat types; their highest population densities probably occur in montane shrublands.

The mountain lion in Colorado primarily inhabits rough, broken foothills, and canyon country, often in association with montane forests, shrublands, and piñon/juniper woodlands. Resident mountain lions maintain contiguous home ranges which vary in size seasonally depending on prey density and the lion's sex, age, and reproductive condition. Mountain lions are common and their habitat is ubiquitous. Excellent lion habitat is found in the Rock Creek, Trickle Mountain, Cochetopa Hills, Carnero Creek, La Garita Creek, Alamosa Creek, La Jara Creek, Poso Creek, and Mogotes areas.

Both the black bear and mountain lion are considered game species by the DOW and are subject to hunting regulations. Further analysis using the NDIS database and maps revealed that habitat for both species is widespread in different habitat types.

Songbirds: Habitat types vary from semi-desert shrublands at lower elevations to steep canyons and mountains at higher elevations. This elevational gradient provides a variety of habitat types for resident and migratory songbirds, many of which are neotropical migrants that are generally present from around March through November. Local songbird species may be ground nesters, shrub nesters, tree foliage nesters, or primary or secondary cavity (snag) nesters. Most nesting activities begin in late March or early April and end by late June. Disturbance to nest sites during the breeding season can negatively affect nesting success and/or prohibit re-nesting attempts in otherwise suitable habitats in successive years. The 16 habitat types described for the Southern Rocky Mountains Province in the Colorado Land Bird Conservation Plan (Beidleman, 2000) will be used to assess the affects of the alternatives on songbirds (See Table 25).

Waterfowl/ Shorebirds: Wetland habitats are critically important as stopover, breeding, and roosting sites for migratory shorebirds and waterfowl in the central flyway. There are about 218,446 acres of wetland habitat for focal species in the planning area (both public and non-public lands). These occur in six primary wetland complexes and in numerous small tracts that occur throughout the planning area. Public lands involve approximately 1.7% of the total area. Although small in acreage, these areas represent critically important habitats for wildlife and some of the most unique wetlands available in the San Luis Valley. The primary wetland complexes that support waterfowl, shorebirds, and other unique species of concern are displayed in Table 23.

Table 23: Wetlands Present By Sub-Unit on Public Lands		
Wetland Name	**Subunit**	**Acres**
Blanca Wetlands Area	Blanca Wetlands ACEC and Sangre de Cristo	1,388
Simpson/McIntire	McIntire Simpson	771
O'Neal Spring	Lower Saguache	2
Mishak Lakes	Blanca Wetlands	206
La Garita Creek	Penitente SRMA	1
Miscellaneous small tracts	Throughout planning area	1,441
TOTAL ACRES		3,809

BLM wetlands provide important habitat for numerous species. Common waterfowl species include mallards, coots, widgeon, blue-winged, green-winged teal, cinnamon teal, bufflehead, canvasback, double-breasted cormorants, gadwall, northern pintail, northern shoveler, redhead, ruddy duck, and Canada geese. Many priority species and/or species of concern utilize these habitats (see Table 24). For example, the only nesting site of snowy plovers in the San Luis Valley and one of the few in Colorado occurs on the Blanca Wetland Area. Nearly 140 plovers are counted annually at Blanca, nesting on alkali flats. Other nesting species include the white-faced ibis and possibly the black tern. The white pelican is frequently observed during the summer months using Blanca Wetlands and the Rio Grande corridor. Long-billed curlew is considered an occasional migrant, and has been well documented using the wetlands, particularly Blanca Wetland Area. Barrow's goldeneye is an uncommon migrant, with only scattered sightings. Least tern has not been documented, but suitable habitat does exist. Many wetlands support populations of Northern leopard frogs. Rio Grande chub is found at Blanca Wetlands, and many areas provide suitable and/or historic habitat.

Table 24: Species of Concern Utilizing Wetland Habitats	
Species Name	**Species Classification**
American Avocet	PIF, RMBO, USSCP
Baird's sandpipers	USSCP
Black-crowned night heron	NAWCP
Black-necked stilt	USSCP
Clark's grebe	NAWCP
Eared grebe	NAWCP
Greater Sandhill Crane	SC
Greater yellowlegs	USSCP
Killdeer	PIF, RMBO, USSCP
Lesser yellowlegs	USSCP
Marbled godwit	NAWCA, USSCP
Snowy Egret	NAWCP
Western grebe	NAWCP
Willet	Priority Species for PIF, RMBO, USSCP
Wilson's Phalarope	MBTA listed species BCR 16 checklist, NAWCA, USSCP
KEY: NAWCA = Priority Species under the North American Wetlands Conservation Act; NAWCP = Species of Concern under North American Waterbird Conservation Plan; MBTA = Species of Concern under the Migratory Bird Treaty Act.	

Environmental Consequences

General Wildlife Impacts: Travel routes and motorized vehicles have variable impacts on wildlife species. They are often species-specific and co-dependant on factors such as traffic volume, season and timing of use, the amount of vegetative (i.e., security) cover along travel routes, and the frequency of human-wildlife interactions. Typically, impacts associated with low traffic volume are not as significant to most wildlife species as those associated with high-traffic volume. The overall impacts are magnified in intensively developed areas where large blocks of habitat are already altered or frequently disturbed. Impacts to certain wildlife species do occur as well in backcountry areas with low-traffic volume. Some wildlife species are more sensitive to motorized use, whereas others are more sensitive to non-motorized use. Passive recreation activities such as hiking, horseback riding, running, jogging, and biking can have various short and long-term effects on wildlife species and their habitats (Gaines et al., 2002). Motorized recreation, such as OHV use, can have numerous impacts on wildlife species because there are greater direct effects on vegetation and other habitat components and disturbances to individual animals are more likely.

Impacts to wildlife species groups have occurred from residential, commercial, and agricultural development. These activities have altered or destroyed native upland vegetation and the habitats they support. In other locations, human developments have influenced wetland and riparian habitats through draining and channelization. Human developments have led to an increase in the use of pesticides, mosquito control, and an increased network of routes. The increase in routes and traffic volume has been shown to result in increased collisions between motor vehicles and various wildlife species, particularly where highways are involved. Additionally, routes are a primary conduit for the introduction and spread of exotic species (plants and animals) that often out-compete native species and in some cases drastically alter natural ecosystems and processes (i.e., particularly after disturbance, e.g., fire, grading, etc.) These impacts are magnified on private lands and emphasize the value of the adjacent public lands to provide habitat and security to local wildlife species.

Direct Effects: Purdy et al. (1987) and Pomerantz (1988) described six categories of impacts to wildlife as a result of human activity, including direct mortality, indirect mortality, lowered productivity, reduced use of area, reduced use of preferred habitat, and aberrant behavior/stress. Overall, the most commonly reported responses by wildlife to motor vehicles involve displacement and avoidance of otherwise suitable habitats (Gaines et al., 2002). Human disturbances to specific nesting, breeding, or wintering sites are commonly reported; responses are often species-specific (but can be variable between populations of the same species), will vary depending upon the type, distance, and intensity of the activity (Gaines et al., 2002), and can even vary from individual to individual within a species. Responses may vary depending upon the time of day and season, type of habitat, vegetation screening and security, surrounding land use, and many other variables. Human disturbances to birds can cause nest abandonment, decline in parental care, increased stress, shortened feeding times, and potentially lower reproductive success. Just as nearby human activities can have negative effects on wildlife, there are documented cases of wildlife (ranging from bald eagles to elk) that have become habituated to human activity. Other direct effects can include motor vehicle collisions with animals or nests resulting in injury or death. Collisions between animals and vehicles were commonly reported in the literature and affected numerous wildlife species, from large mammals to amphibians

(Gaines et al., 2002). Species that reproduce or frequent habitats on or near the ground are particularly vulnerable to direct impacts from collisions. These impacts are most frequent when highways and high-speed traffic is involved but is also associated with smaller, less-traveled routes to various degrees.

Indirect Effects: Indirect effects on wildlife occur when habitat is affected in a manner that does not directly impact the animal. For example, the habitat loss that occurs when a motorized route is constructed has an indirect effect on wildlife species that might otherwise utilize that habitat. Landscapes that contain a higher density of routes may have a greater direct impact on vegetation and thus a greater potential for indirect impacts on individual wildlife species and populations. Proliferation of routes across a landscape adds to the cumulative impacts that may be associated with development and other human uses on adjacent private lands.

Wildlife habitats may be altered when a route is placed within or near them. For example, depending upon the type and intensity of use, routes may reduce the amount of interior or "core" habitat while creating edge habitat. The creation of edge habitat may result in a shift in the species composition of wildlife. Habitat generalists (species that utilize a variety of habitats) may increase in number while interior or obligate species (species that depend on large blocks of one habitat type) decline. Predators may increase and the general diversity of species may decline. Disturbances and mortality from human hunting pressure is likely to increase as the route density increases. Knight and Cole (1995) found that hunting can alter behavior, population structure, and distribution patterns of big game species. Hunting can affect the diversity and number of birds using a site, suggesting that all species may be influenced by hunting activity (not just the hunted species), and seek to avoid these areas (Madsen, 1995). Thus, indirect impacts occur as wildlife species adjust their behavior to avoid contact with humans along routes. The ability of the habitat to be fully utilized by wildlife species is reduced and may extend for various distances from the road prism depending upon the species involved.

Habitats become dissected when routes are placed within them. The habitat fragments that remain between the routes become smaller as the route density increases. Many wildlife species of concern thrive better in large blocks of undisturbed habitat rather than smaller fragmented pieces. Habitat fragmentation is considered to be one of the greatest threats to biological diversity. It is difficult to assess each route to determine how it affects local biodiversity and contributes to habitat fragmentation for different groups of species. It is therefore assumed that local biodiversity attributes would be reduced as habitat fragmentation (i.e., route density) increases and that protecting large, undisturbed blocks of habitat would be a key consideration when making decisions concerning travel management. A reduction in habitat fragmentation would maintain wildlife movement corridors between existing habitat blocks and help facilitate movement between habitat types and across the landscape.

Cumulative Effects: Cumulative Effects for terrestrial and aquatic wildlife, migratory birds, and Threatened, Endangered, and Sensitive (TES) wildlife are evaluated at the end on the TES section (pg. 181) due to similarities in the discussion points and analysis.

Environmental Effects:

Current Use (No Action) Alternative

Cross-Country Travel: Motorized travel is open to all uses in Area #1 in the Current Use (No Action) Alternative A. This alternative would continue to allow unrestricted cross-country travel by motorized vehicles in addition to the high amount of existing motorized routes. This could potentially occur in critical wildlife habitat areas that are intended to be closed for certain portions of the year (i.e., big game winter range) but where cross-country travel is technically legal as long as the vehicles do not drive on established routes. Unrestricted cross-country travel is expected to have negative effects on nearly all habitat types and wildlife species, but may be particularly detrimental to species that reproduce on or near the ground or in areas frequented by recreationists (i.e., riparian zones). Unrestricted cross-country travel is particularly damaging to certain habitat types, such as wetlands and low-elevation riparian, where vegetation is extremely sensitive to damage by motor vehicles. The impacts of route proliferation on wildlife species and their habitats are expected to be consistent with those described above.

The exception to cross-country travel occurs in ACECs and the WSA (Areas #2 and #4 through #10) where motorized travel is currently limited to existing routes unless they are posted closed.

Effects Common to All Action Alternatives

Critical Winter Wildlife Range: In all action alternatives, the critical winter wildlife range as determined for this analysis will be closed or limited from January 1 through April 30 on an annual basis. This closure would be adjusted to December 1 through April 30 if the DOW closes the late season elk hunt or if population objectives have not been met. Those routes requiring commercial, administrative, and private property access through critical winter range will remain open for those uses, including routes that are maintained for or provide access to established winter recreation areas. Further emergency route closures may occur on a route-by-route basis during extremely severe winters when big game concentrations are forced onto areas that are normally considered non-critical winter wildlife habitat. These emergency closures will be coordinated between the San Luis Valley Public Lands Center Manager and the local DOW Area Manager and may vary from year to year.

This critical winter wildlife closure is expected to benefit other resident wildlife species because the closures create important core habitat that provides security during periods of high environmental stress.

ACECs and WSA: Large areas of undisturbed habitat will remain undisturbed by motorized routes in the ACECs.

Alternatives Analyzed: This analysis uses BLM route inventory data and GIS analysis procedures to model the potential impacts of routes, motorized vehicles, and fragmentation on the habitat types and focal species. All routes were initially examined and characterized as to route type, width, use type, and use level. These parameters defined a generalized impact assessment of a route to individuals, populations, and core habitat for a particular species or group of species. For a complete discussion of how core habitat was developed and analyzed, see the section Wildlife, Threatened and Endangered Species.

The analysis for terrestrial wildlife evaluated the four alternatives in relationship to:

- changes in amount of core areas by habitat type (Table 25);
- changes in route miles and acres impacted within the 16 habitat types (see Tables 26 through 41);
- changes in core habitat available for selected focal species (Tables 42 through 45).

In each alternative, the number of route miles corresponds to an amount of area that provides habitat for various wildlife species that will be directly and/or indirectly affected by motorized vehicle travel. These impacts vary depending upon the type of route, species, and/or habitat involved, a larger number of route miles are assumed to correspond to a greater risk of impact because a larger amount of area. Route miles and acres impacted are important comparisons to evaluate because they illustrate the amount of area potentially impacted by motor vehicles. Conversely, route miles and acres impacted can illustrate differences in the amount of area protected because they correspond to fragmentation effects on the core habitat areas when areas become dissected. Protection of core habitat areas is expected to have the greatest amount of benefit to the largest number of species and is used to illustrate differences for key species between alternatives. All alternatives result in numerous core areas greater than 1,000 acres and mean core area sizes greater than about 5,486 acres for the ten largest core areas. Differences between alternatives for core areas greater than 4,000 acres are displayed (see Table 50). There are important differences between the alternatives in relationship to core habitats for certain habitat types that become clearer at the scale of the planning area.

Effects on Core Habitat by Alternative

The analysis results for the amount of core area retained on public lands in each habitat type by each alternative is displayed below in Table 25. The analysis results for the amount of core habitat retained in each alternative on public lands for the focal species and/or species groups are displayed in Tables 42 through 45. The tables for the focal species groups show the amount of acres of total core habitat, motorized open routes, and non-motorized open routes on public lands for big game and other species of interest. Differences in these figures are used to display the amount of area affected by habitat fragmentation, human disturbance, and loss of habitat for these species groups due to route networks. Other species not displayed in tables, such as migratory birds and reptiles/amphibians, are assumed to occupy the same core habitat displayed for the larger focal species and would be similarly affected by the decisions made regarding travel management.

Table 25: Core Area Analysis by Habitat Type for Each Alternative (acres/percentage) Public Lands

Habitat Type	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Agriculture	61 acres 0.01%	53 acres 0.01%	62 acres 0.01%	61 acres 0.01%
Alpine Tundra/ Subalpine	7,495 acres 1.45%	6,824 acres 1.32%	7,937 acres 1.53%	7,327 acres 1.42%
Aspen	1,505 acres 0.29%	1,451 acres 0.28%	1,634 acres 0.32%	1,494 acres 0.29%
Cliff/ Rock/ Talus	4,701 acres 0.91%	4,483 acres 0.87%	4,858 acres 0.94%	4,676 acres 0.90%

Table 25: Core Area Analysis by Habitat Type for Each Alternative (acres/percentage) Public Lands				
Habitat Type	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Grassland	32,751 acres 6.33%	28,498 acres 5.51%	35,784 acres 6.91%	31,228 acres 6.03%
High Elevation Riparian	7 acres <0.01%	7 acres <0.01%	7 acres <0.01%	7 acres <0.01%
Lowland Riparian	1,334 acres 0.26%	1,223 acres 0.24%	1,380 acres 0.27%	1,295 acres 0.25%
Mixed Conifer	175 acres 0.03%	171 acres 0.03%	182 acres 0.04%	175 acres 0.03%
Mountain Shrubland	30,011 acres 5.80%	26,181 acres 5.06%	32,100 acres 6.20%	28,656 acres 5.54%
Piñon/ Juniper	43,890 acres 8.48%	40,479 acres 7.82%	46,577 acres 9.00%	42,826 acres 8.28%
Ponderosa Pine	18,450 acres 3.57%	16,968 acres 3.28%	19,339 acres 3.74%	18,321 acres 3.54%
Residential	0 acres 0.00%	0 acres 0.00%	0 acres 0.00%	0 acres 0.00%
Sagebrush Shrubland	2,289 acres 0.44%	1,998 acres 0.39%	2,461 acres 0.48%	2,139 acres 0.41%
Semi-desert Shrubland	157,736 acres 30.48%	141,927 acres 27.43%	165,876 acres 32.05%	150,685 acres 29.12%
Spruce-Fir	10,147 acres 1.96%	9,717 acres 1.88%	10,401 acres 2.01%	10,090 acres 1.95%
Wetlands**	2,005 acres 0.39%	1,821 acres 0.35%	2,036 acres 0.39%	1,949 acres 0.38%
***Using the USFWS Wetlands and Deepwater Habitats Classification/National Wetlands Inventory Mapping.*				

Effects on Habitat Type by Alternative

The analysis results for the number of route miles and acres directly impacted by each alternative within each habitat type are displayed in Tables 26 through 41, below. These tables display the percentage of each habitat type directly impacted by the corresponding miles/acres of routes that occur. In these tables, the "motorized open" routes correspond to the travel use categories described in Table 4, which includes "Mitigate Open" routes and some "Limited User" routes that are primary access routes. The acres impacted are calculated by applying the route category widths described in Table 49 by the route miles of each category. For example, single-track hiking trails and ATV trails are estimated to impact areas of 3 and 5 feet wide, respectively, while highways impact areas about 30 feet wide. Therefore, it is possible that habitat types with numerous small, single-track routes will have fewer direct impacts than habitat types that support a few miles of highway system due to differences in the width of area impacted. The amount of acres impacted were calculated using the individual route categories and characteristics in the GIS system, and do not reflect a single formula for determining impacts. The amount of area impacted by each action alternative relative to the Current Use (No Action) Alternative A is displayed for the motorized open category. Narratives concerning differences in effects follow each table.

1) Semi-Desert Shrubland

This habitat type is sensitive to cross-country travel because it harbors many ground or low shrub dwelling species that are vulnerable to motorized vehicles. The reptile/amphibian and small mammal groups are highly represented within this habitat type. Some larger focal species such as pronghorn antelope find primary habitat in the semi-desert shrubland.

Table 26: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Semi-Desert Shrubland Habitat by Alternative.

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	468.7 miles 887.9 acres 0.34% 65%	806.2 miles 1364.3 acres 0.53% 100%	361.2 miles 733.6 acres 0.28% 54%	598.3 miles 1069.6 acres 0.41% 78%
Non-Motorized Open	23.5 miles 29.3 acres 0.01%	5.1 miles 3.3 acres <0.01%	13.5 miles 16.6 acres 0.01%	26.2 miles 33.4 acres 0.01%
Closed/Reclaimed or Open to Admin Use	363.1 miles 513.3 acres 0.20%	44.0 miles 62.8 acres 0.02%	480.6 miles 680.3 acres 0.26%	230.8 miles 327.5 acres 0.13%

Effects on Core Habitat by Alternative

The analysis results for the amount of core area retained on public lands in each habitat type by each alternative is displayed below in Table 25. The analysis results for the amount of core habitat retained in each alternative on public lands for the focal species and/or species groups are displayed in Tables 42 through 45. The tables for the focal species groups show the amount of acres of total core habitat, motorized open routes, and non-motorized open routes on public lands for big game and other species of interest. Differences in these figures are used to display the amount of area affected by habitat fragmentation, human disturbance, and loss of habitat for these species groups due to route networks. Other species not displayed in tables, such as migratory birds and reptiles/amphibians, are assumed to occupy the same core habitat displayed for the larger focal species and would be similarly affected by the decisions made regarding travel management.

Approximately 141,927 acres of core habitat occurs in semi-desert shrubland. This represents about 27.4% of the core habitat for all habitat types found on public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts if and when it occurs in this habitat type and reduce the core habitat acres.

Much of the core habitat could be diminished or made less effective by unrestricted cross-country vehicle travel. These impacts are expected to increase substantially in the future due to route proliferation. This alternative is expected to have the greatest direct and indirect effects on wildlife species associated with the semi-desert shrubland habitat type.

Action Alternatives: The Minimum Access Alternative B it expected to provide the highest benefit to wildlife species in semi-desert shrublands because it best addresses the potential impacts of routes, motorized and non-motorized. The Proposed Action Alternative C provides a median approach between the other two action alternatives. The primary difference between the alternatives is the amount of open and closed motorized routes. The Minimum Access Alternative B reduces non-motorized routes approximately 90% more than the other two action alternatives. These differences reflect how well the alternatives address issues such as habitat fragmentation and disturbances to wildlife species, with the greatest habitat benefit to wildlife relative to the highest amount of route that is closed. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C. Relative to the Current Use (No Action) Alternative A, the Minimum Access Alternative B retains 54% of the potential impact, the Maximum Access Alternative D 78%, and the Proposed Action Alternative C 65%.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of foraging and reproductive cover reclaimed. The remaining open route network in the three action alternatives would still result in the direct habitat loss acreages reflected in Table 26, above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative.

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). In semi-desert shrublands, the highest acreage of core habitat is available in the Minimum Access Alternative B (+23,949 acres or 117% relative to the Current Use (No Action) Alternative A), the lowest in the Maximum Access Alternative D (+8,758 acres or 106% relative to the Current Use (No Action) Alternative A), and a moderate acreage in the Proposed Action Alternative C (+15,809 acres or 111% relative to the Current Use (No Action) Alternative A). It is likely that the core habitats would be larger and offer greater habitat security in relationship to the acreage differences between the alternatives. None of the action alternatives result in the addition of a large (greater than 1,000 acre) or very large (greater than 4,000 acre) core area. This suggests that the additional acreages in core area in all alternatives are comprised of smaller habitat blocks scattered across the landscape.

) Piñon/juniper Woodland Habitat Type

It provides primary habitat for numerous focal species with the reptile/amphibian, migratory bird, raptor, bat, and small mammal groups all highly represented. Bighorn sheep, mule deer, and mountain lion find primary habitat in piñon/juniper.

Approximately 40,479 acres of core habitat occurs in piñon/juniper. This represents about 7.8% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts if and when it occurs in this habitat type and reduce the core habitat acres.

The amount of core habitat would remain unchanged but could be negatively influenced or made less effective by unrestricted cross-country vehicle travel. Route proliferation is possible in piñon/juniper habitat because of terrain features that allow vehicle access to expand. This alternative is expected to have the greatest direct and indirect effects on wildlife species.

Table 27: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Piñon/Juniper Woodland Habitat by Alternative.

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	57.7 miles 94.8 acres 0.14% 53%	109.6 miles 162.2 acres 0.24% 100%	44.4 miles 77.5 acres 0.12% 41%	73.6 miles 114.9 acres 0.17% 67%
Non-Motorized Open	20.3 miles 16.1 acres 0.02%	11.5 miles 4.7 acres 0.01%	12.0 miles 7.2 acres 0.01%	18.1 miles 13.3 acres 0.02%
Closed/Reclaimed or Open to Admin Use	47.6 miles 61.6 acres 0.09%	4.6 miles 5.8 acres 0.01%	69.3 miles 87.9 acres 0.13%	34.0 miles 44.5 acres 0.07%

Action Alternatives: The Minimum Access Alternative B it expected to provide the highest benefit to wildlife species because it best addresses the potential impacts of routes, and motorized and non-motorized travel. The Proposed Action Alternative C provides a median approach between the other two action alternatives. The primary difference between the alternatives is the amount of open and closed motorized routes, although the Minimum Access Alternative B reduces non-motorized routes more than the other two action alternatives. The greatest benefit to wildlife is expected to be relative to the highest amount of routes that are closed. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C. Relative to the Current Use (No Action) Alternative A, the Minimum Access Alternative B retains 41% of the potential impact, the Maximum Access Alternative D 67%, and the Proposed Action Alternative C 53%.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of foraging and reproductive cover reclaimed. The remaining open route network in the three action alternatives would still result in direct habitat loss, with the acreages reflected in Table 26 above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative.

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 24). The highest acreage of core habitat is available in the Minimum Access Alternative B (+6,098 acres or 115% relative to the Current Use (No Action) Alternative A) and the lowest in the Maximum Access Alternative D (+2,347 acres or 106% relative to the Current Use (No Action) Alternative A). The Proposed Action Alternative C is median between the two (+3,411 acres or 108% relative to the Current Use (No Action) Alternative A), but closer to the acreage in the Maximum Access Alternative D (within 2%). It is likely that the core habitats would be larger and offer greater habitat security in relationship to

the acreage differences between the alternatives. None of the action alternatives result in the addition of a large (greater than 1,000 acre) or very large (greater than 4,000 acre) core area. This suggests that the additional acreages in core area in all alternatives are comprised of smaller habitat blocks scattered across the landscape.

3) Grassland Habitat Type

Grassland habitats are particularly important to the native ungulate and small mammal species focal groups. Grasslands are subject to extensive damage from unrestricted vehicle travel, particularly during wet periods. Habitat security issues are heightened due to the long sight distances associated with the open space common in most grasslands.

Table 28: Miles/Acres of routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Grassland Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	140.9 miles 223.8 acres 0.37% 57%	249.0 miles 370.3 acres 0.62% 100%	103.1 miles 173.0 acres 0.29% 41%	178.9 miles 276.3 acres 0.46% 65%
Non-Motorized Open	16.9 miles 19.3 acres 0.03%	5.1 miles 1.9 acres <0.01%	18.0 miles 21.5 acres 0.04%	14.3 miles 14.9 acres 0.02%
Closed/Reclaimed or Open to Admin Use	109.3 miles 146.1 acres 0.24%	13.1 miles 17.0 acres 0.03%	146.1 miles 194.7 acres 0.32%	74.0 miles 98.0 acres 0.16%

Approximately 28,498 acres of core habitat occurs in grasslands. This represents about 5.5% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts if and when it occurs in this habitat type and reduce the core habitat acres. The risk of resource damage from unrestricted motorized travel to grassland soils and vegetation is probably higher than that associated with drier habitat types.

The amount of core habitat would remain unchanged in the Current Use (No Action) Alternative A, but could be negatively influenced or made less effective by unrestricted cross-country vehicle travel. The risk of route proliferation is probably highest in grasslands due to the open terrain and sight distances involved. This alternative is expected to have the greatest direct and indirect effects on grassland-associated species with substantial impacts possible in the future due to route proliferation.

Action Alternatives: The Minimum Access Alternative B it expected to provide the greatest benefit to wildlife species in grassland habitats because it best addresses the potential impacts of routes, and motorized and non-motorized travel. The Proposed Action Alternative C provides a median approach between the other two action alternatives. The primary difference between the alternatives is the amount of open and closed motorized routes. The Minimum Access Alternative B contains about three times as much non-motorized routes as the other two action

alternatives. The greatest amount of benefit is expected from the Minimum Access Alternative B since it closes and reclaims the highest amount of routes. The Maximum Access Alternative D is expected to provide the least amount of benefit, and a moderate amount of benefit is expected from the Proposed Action Alternative C. Relative to the Current Use (No Action) Alternative A, the Minimum Access Alternative B retains 41% of the potential impact, the Maximum Access Alternative D 65%, and the Proposed Action Alternative C 57%.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of foraging and reproductive cover reclaimed. The remaining open route network in the three action alternatives would still result in direct habitat loss, with the acreages reflected in Table 31 above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative.

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). The highest acreage of core habitat is available in the Minimum Access Alternative B (+7,286 acres or 126% relative to the Current Use (No Action) Alternative A) and the lowest in the Maximum Access Alternative D (+2,730 acres or 110% relative to the Current Use (No Action) Alternative A). The Proposed Action Alternative C is median between the two (+4,253 acres or 115% relative to the Current Use (No Action) Alternative A), but closer to the acreage in the Maximum Access Alternative D (within 5%). Grasslands are the only major habitat type in the planning area where one of the action alternatives results in the addition of a large (greater than 1,000 acre) core area. This occurs in the Minimum Access Alternative B, and indicates that the core habitats are indeed larger. Habitat security values are expected to be relative to the acreage differences between the alternatives, and greatest in the Minimum Access Alternative B (see Table 25).

4) Mountain Shrubland Habitat Type

They are particularly important as a food and cover source to individual species within several different focal species groups.

Table 29: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Mountain Shrub Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	139.8 miles 233.7 acres 0.40% 60%	234.5 miles 361.4 acres 0.61% 100%	111.7 miles 195.9 acres 0.33% 48%	169.0 miles 273.2 acres 0.46% 72%
Non-Motorized Open	11.7 miles 11.8 acres 0.02%	4.8 miles 1.7 acres <0.01%	8.9 miles 9.1 acres 0.02%	11.8 miles 12.0 acres 0.02%
Closed/Reclaimed or Open to Admin Use	94.3 miles 125.8 acres 0.21%	6.5 miles 8.2 acres 0.01%	125.0 miles 166.3 acres 0.28%	64.9 miles 86.1 acres 0.15%

Approximately 26,181 acres of core habitat occurs in mountain shrubland. This represents about 5.1% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts that may occur in this habitat type and reduce the core habitat acres. In some areas, route proliferation could be a problem while in others terrain and vegetation may limit the amount of unrestricted cross-country travel that could occur.

The core habitat in this habitat type has the greatest potential to be negatively influenced or made less effective by the unrestricted cross-country vehicle travel associated with the current condition. The Current Use (No Action) Alternative A is expected to have the greatest direct and indirect effects on mountain shrubland associated species due to the unrestricted travel and current amount of motorized routes.

Action Alternatives: The Minimum Access Alternative B it expected to provide the highest benefit to wildlife species in mountain shrublands because it best addresses the potential impacts of routes, and motorized and non-motorized travel. The Proposed Action Alternative C provides a median approach between the other two action alternatives. The primary difference between the alternatives is the amount of open and closed motorized routes, although the Minimum Access Alternative B offers a low level of non-motorized routes relative to the other two action alternatives (about 25% less). The greatest benefit to wildlife is expected to be associated with the highest amount of route that is closed. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C. Relative to the Current Use (No Action) Alternative A, the Minimum Access Alternative B retains 48% of the potential impact, the Maximum Access Alternative D 72%, and the Proposed Action Alternative C 60%.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of habitat reclaimed. The remaining open route network in the three action alternatives would still result in direct habitat loss, with the acreages reflected in Table 29 above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative.

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). The highest acreage of core habitat is available in the Minimum Access Alternative B (+5,919 acres or 123% relative to the Current Use (No Action) Alternative A), the lowest in the Maximum Access Alternative D (+2,475 acres or 110% relative to the Current Use (No Action) Alternative A), and a moderate acreage in the Proposed Action Alternative C (+3,830 acres or 15% relative to the Current Use (No Action) Alternative A). It is likely that the core habitats would be larger and offer greater habitat security in relationship to the acreage differences between the alternatives. None of the action alternatives result in the addition of a large (greater than 1,000 acre) or very large (greater than 4,000 acre) core area. This suggests that the additional acreages in core area in all alternatives are comprised of smaller habitat blocks scattered across the landscape.

5) Ponderosa Pine

It is an important habitat type for several focal species groups, including raptors and cavity-nesting species not found in the lower elevation habitat types. All native ungulates and most large carnivores frequent this habitat type.

Table 30: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Ponderosa Pine Forest Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	23.9 miles 36.3 acres 0.13% 54%	44.4 miles 62.9 acres 0.23% 100%	17.7 miles 27.8 acres 0.10% 40%	27.0 miles 40.3 acres 0.15% 61%
Non-Motorized Open	8.0 miles 6.8 acres 0.03%	3.8 miles 1.4 acres 0.01%	6.0 miles 6.0 acres 0.02%	6.2 miles 4.6 acres 0.02%
Closed/Reclaimed or Open to Admin Use	22.7 miles 29.1 acres 0.11%	6.4 miles 7.9 acres 0.03%	30.9 miles 38.4 acres 0.14%	21.4 miles 27.3 acres 0.10%

Approximately 16,968 acres of core habitat occurs in ponderosa pine. This represents about 3.3% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts that may occur in this habitat type and reduce the core habitat acres. The core habitat has a high potential to be negatively influenced or made less effective by unrestricted cross-country vehicle travel. The Current Use (No Action) Alternative A is expected to have the greatest direct and indirect effects on ponderosa pine associated species due to the amount of motorized routes and a gentle, rolling topography that provides a fairly high risk of route proliferation when cross-country access is unrestricted.

Action Alternatives: The Minimum Access Alternative B it expected to provide the highest benefit to wildlife species in ponderosa pine because it best addresses the potential impacts of routes, and motorized and non-motorized travel. The primary difference between the alternatives is the amount of open and closed motorized routes. The Proposed Action Alternative C provides a median approach between the other two action alternatives in regards to the amount of open motorized routes. Alternative D provides approximately 25% more non-motorized routes than the other two action alternatives. The greatest amount of benefit is expected from the Minimum Access Alternative B since it closes and reclaims the highest amount of routes. The Maximum Access Alternative D is expected to provide the least amount of benefit, and a moderate amount of benefit is expected from the Proposed Action Alternative C. Relative to the Current Use (No Action) Alternative A, the Minimum Access Alternative B retains 40% of the potential impact, the Maximum Access Alternative D 61%, and the Proposed Action Alternative C 54%.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of habitat reclaimed. The Minimum Access Alternative B offers about a 29% higher reclamation gain than

the other two action alternatives, which are similar. Relative to the Current Use (No Action) Alternative A, the reclamation gain is about 79% higher. The remaining open route network in the three action alternatives would still result in direct habitat loss, with the acreages reflected in Table 30 above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative.

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). The highest acreage of core habitat is available in the Minimum Access Alternative B (+2,371 acres or 114% relative to the Current Use (No Action) Alternative A), the lowest in the Maximum Access Alternative D (+1,353 acres or 108% relative to the Current Use (No Action) Alternative A), and a median acreage in the Proposed Action Alternative C (+1,482 acres or 109% relative to the Current Use (No Action) Alternative A). It is likely that the core habitats would be larger and offer greater habitat security in relationship to the acreage differences between the alternatives. None of the action alternatives add much additional core habitat or result in the addition of a large (greater than 1,000 acre) or very large (greater than 4,000 acre) core area. This suggests that the additional acreages in core area in all alternatives are comprised of smaller habitat blocks scattered across the landscape.

6) Spruce-Fir Forest

It is an important habitat type for several focal species groups, especially native ungulates and carnivores. Spruce-fir supports unique individual small mammals, birds, and raptors that are sensitive to routes and human disturbance. Cross-country vehicle travel is naturally restricted in spruce-fir habitat types due to topography and vegetation and may not be as high of a concern as in other more-accessible habitat types.

Table 31: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Spruce-Fir Forest Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	7.4 miles 10.3 acres 0.08% 64%	11.6 miles 15.3 acres 0.11% 100%	5.0 miles 7.3 acres 0.05% 43%	8.2 miles 11.1 acres 0.08% 71%
Non-Motorized Open	3.0 miles 1.9 acres 0.01%	1.8 miles 0.7 acres 0.01%	2.3 miles 1.6 acres 0.01%	2.5 miles 1.5 acres 0.01%
Closed/Reclaimed or Open to Admin Use	4.8 miles 5.9 acres 0.04%	1.8 miles 2.2 acres 0.02%	7.9 miles 9.2 acres 0.07%	4.3 miles 5.5 acres 0.04%

Approximately 9,717 acres of core habitat occurs in spruce-fir. This represents about 1.9% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts if and when it occurs in this habitat type and reduce the core habitat acres. The risk of route proliferation in spruce-fir habitat types is not as profound as in most other habitat types because cross-country travel is generally restricted by topography and

vegetation. This alternative is expected to have the greatest direct and indirect effects on spruce-fir associated species due to the amount of motorized routes and possible impacts where unrestricted travel could possibly occur.

Action Alternatives: The Minimum Access Alternative B is expected to provide the highest benefit to wildlife species in spruce-fir because it best addresses the potential impacts of routes, and motorized and non-motorized travel. The Proposed Action Alternative C provides a median approach that is within 7% of and most similar to the Maximum Access Alternative D. The primary difference between the alternatives is the amount of open and closed motorized routes, with the Minimum Access Alternative B having approximately 48 to 64% less open routes than the Proposed Action Alternative C. In regards to open non-motorized routes, all of the action alternatives add additional miles of routes that were formerly motorized routes and exceed the Current Use (No Action) Alternative A (i.e., in terms of miles of non-motorized routes). The greatest benefit to wildlife is expected to be associated with the highest amount of motorized routes that are closed. The greatest amount of benefit is expected from the Minimum Access Alternative B and the least amount from the Maximum Access Alternative D. The Proposed Action Alternative C is similar to the Maximum Access Alternative D but does close an additional small section of route. Relative to the Current Use (No Action) Alternative A, the Minimum Access Alternative B retains 43% of the potential impact, the Maximum Access Alternative D 71%, and the Proposed Action Alternative C 64%.

The additional habitat gained by each alternative is probably not large enough to assume a respective productivity gain by wildlife species; benefits to species are still most likely associated with the greatest amount of habitat reclaimed. In spruce-fir, the Minimum Access Alternative B offers a relatively higher (36% greater) reclamation gain than the other two action alternatives, which are similar. The remaining open route network in the three action alternatives would still result in direct habitat loss, with the acreages reflected in Table 31 above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative.

The amount of core habitat available for security and edge-sensitive species differs slightly between the action alternatives (see Table 25). The highest acreage of core habitat is available in the Minimum Access Alternative B (+684 acres or 107 % relative to the Current Use (No Action) Alternative A), the lowest in the Maximum Access Alternative D (+373 acres or 104% relative to the Current Use (No Action) Alternative A), and a median acreage in the Proposed Action Alternative C (+430 acres or 104% relative to the Current Use (No Action) Alternative A). None of the action alternatives add much additional core habitat or result in the addition of a large (greater than 1,000 acre) or very large (greater than 4,000 acre) core area. This suggests that core area acreages are relatively similar between all action alternatives, with the Minimum Access Alternative B providing a slightly higher potential for habitat security.

7) Alpine/Subalpine

Although the diversity of wildlife species in alpine/subalpine may be low compared to other habitat types, it does supply important habitat for individual species of concern from the focal species groups. Alpine/subalpine habitats are very sensitive to most forms of travel and can be easily damaged by motor vehicles.

Table 32: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Alpine/Subalpine Habitat by Alternative				
Designation	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	13.6 miles 21.6 acres 0.18% 50%	27.5 miles 40.1 acres 0.34% 100%	11.1 miles 18.2 acres 0.15% 40%	17.6 miles 27.0 acres 0.23% 64%
Non-Motorized Open	2.7 miles 2.5 acres 0.02%	1.0 0.4 acres <0.01%	2.3 miles 2.2 acres 0.02	1.7 miles 1.3 acres 0.01%
Closed/Reclaimed or Open to Admin Use	15.7 miles 20.9 acres 0.18	3.6 miles 4.5 acres 0.04%	18.6 miles 24.6 acres 0.21%	12.7 miles 16.7 acres 0.14%

Approximately 6,824 acres of core habitat occurs in alpine/subalpine habitat. This represents about 1.3% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Alpine/subalpine habitats are usually easily accessible to unrestricted cross-country travel, which could cause substantial impacts and reductions in core habitat area if and when it occurs in this habitat type. The risk of route proliferation in the future is high and results in additional impacts under the Current Use (No Action) Alternative A.

This alternative is expected to have the greatest direct and indirect effects on alpine/subalpine associated species due to the amount of motorized routes and the possible impacts of unrestricted travel and route proliferation.

Action Alternatives: The Minimum Access Alternative B it expected to provide the highest benefit to wildlife species in the alpine/subalpine habitat type because it best addresses the potential impacts of routes, and motorized and non-motorized travel. The Proposed Action Alternative C provides a median approach between the other two action alternatives. The primary difference between the alternatives is the amount of open and closed motorized routes. The Proposed Action Alternative C contains about 15 to 37% more non-motorized routes than the other two action alternatives. The greatest amount of benefit is expected from the Minimum Access Alternative B since it closes and reclaims the highest amount of route. The Maximum Access Alternative D is expected to provide the least amount of benefit, and a moderate amount of benefit is expected from the Proposed Action Alternative C.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of habitat reclaimed. The reclamation gain associated with the Minimum Access Alternative B is about 15% higher than the Proposed Action Alternative C and about 32% higher than the Maximum Access Alternative D. The remaining open route network in the three action alternatives would result in direct habitat loss, with the acreages reflected in Table 32 above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative.

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). The highest acreage of core habitat is available in the Minimum Access Alternative B (+1,113 acres or 116% relative to the Current Use (No Action) Alternative A) and the lowest in the Maximum Access Alternative D (+503 acres or 107% relative to the Current Use (No Action) Alternative A). The Proposed Action Alternative C is slightly higher than but similar to the Maximum Access Alternative D (+671 acres or 110% relative to the Current Use (No Action) Alternative A). None of the action alternatives add much additional core habitat or result in the addition of a large (greater than 1,000 acre) or very large (greater than 4,000 acre) core area. This suggests that core area acreages are relatively similar between all action alternatives, although the Minimum Access Alternative B clearly provides a slightly higher potential for habitat security.

8) Sagebrush Shrubland

Sagebrush shrublands are extremely valuable as a food and cover source to numerous individual species, especially those within the avian focal species group. Sagebrush shrubland habitats are particularly vulnerable to unrestricted cross-country travel since they are readily accessible and many species nest on or near the ground.

Table 33: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Sagebrush Shrubland Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	28.3 miles 49.2 acres 0.69% 64%	44.5 miles 70.2 acres 0.98% 100%	22.1 miles 40.8 acres 0.57% 50%	34.6 miles 57.2 acres 0.80% 78%
Non-Motorized Open	1.3 miles 1.1 acres 0.02%	0.6 miles 0.2 acres <0.01%	1.3 miles 1.1 acres 0.02%	0.6 miles 0.3 acres <0.01%
Closed/Reclaimed or Open to Admin Use	16.9 miles 21.8 acres 0.31%	1.4 miles 1.7 acres 0.02%	23.1 miles 30.2 acres 0.42%	11.3 miles 14.6 acres 0.20%

Approximately 1,998 acres of core habitat occurs in sagebrush shrubland. This represents about 0.4% of the total core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts if and when it occurs in this habitat type and reduce the core habitat acres. It is probable that route proliferation may be significant in sagebrush shrubland because of terrain and vegetation features that are conducive to cross-country travel.

The core habitat has the potential to be negatively influenced or made less effective by the unrestricted cross-country vehicle travel associated with the current condition. The Current Use (No Action) Alternative A is expected to have the greatest direct and indirect effects on sagebrush shrubland associated species due to the amount of motorized routes and the vulnerability of most species to route proliferation.

Action Alternatives: The Minimum Access Alternative B is expected to provide the highest benefit to wildlife species in sagebrush shrublands because it best addresses the potential impacts of routes, and motorized and non-motorized travel. The Proposed Action Alternative C provides a median approach between the other two action alternatives. The primary difference between the alternatives is the amount of open and closed motorized routes because the amount of non-motorized routes in all action alternatives is relatively similar. The greatest benefit to wildlife is expected to be associated with the highest amount of routes that are closed. The greatest amount of benefit is expected from the Minimum Access Alternative B because it provides about 14% more closed routes than the Proposed Action Alternative C and about 28% more closed routes than the Maximum Access Alternative D.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of habitat reclaimed. The remaining open route network in the three action alternatives would still result in direct habitat loss, with the acreages reflected in Table 33 above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative. They are highest in the Maximum Access Alternative D (approximately 33% higher than the Proposed Action Alternative C and 52% higher than the Minimum Access Alternative B).

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). The highest acreage of core habitat is available in the Minimum Access Alternative B (+463 acres or 123% relative to the Current Use (No Action) Alternative A), lowest in the Maximum Access Alternative D (+141 acres or 107% relative to the Current Use (No Action) Alternative A), and median in the Proposed Action Alternative C (+291 acres or 115% relative to the Current Use (No Action) Alternative A). None of the action alternatives result in the addition of a large (greater than 1,000 acre) or very large (greater than 4,000 acre) core area. Many of the obligate bird species that occupy sagebrush shrublands are very sensitive to minor changes in fragmentation patterns and any additional core acreages will be beneficial to these species.

9) Cliff/Rock/Talus Habitat Type

Despite the small amount of area involved, it is highly valuable to numerous focal species including reptile/amphibians, migratory birds, raptors, and bats. Bighorn sheep, mule deer, and mountain lion find primary habitat in cliff and rock habitat. This habitat type is usually not very accessible or vulnerable to unrestricted cross-country travel. There is one sub-unit (Limekiln) that involves an extreme 4WD trail system within cliff and rock habitat.

Approximately 4,483 acres of core habitat occurs in cliff/rock/talus habitats. This represents about 0.9% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts if and when it occurs in this habitat type and reduce the core habitat acres. Route proliferation is restricted in cliff/rock/talus habitats because of terrain features. In the Limekiln TMA, it is likely that route proliferation and extreme 4WD “play areas” could continue to expand.

Table 34: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Cliff / Rock / Talus Habitat by Alternative				
Designation	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	5.3 miles 10.3 acres 0.16% 68%	7.8 miles 13.7 acres 0.21% 100%	4.3 miles 9.0 acres 0.14% 55%	6.0 miles 11.2 acres 0.17% 77%
Non-Motorized Open	0.4 miles 0.4 acres 0.01%	0.2 miles 0.1 acres <0.01%	0.4 miles 0.4 acres 0.01%	0.3 miles 0.3 acres <0.01%
Closed/Reclaimed or Open to Admin Use	4.2 miles 5.6 acres 0.09%	1.8 miles 2.5 acres 0.04%	5.2 miles 6.9 acres 0.11%	3.5 miles 4.8 acres 0.07%

The amount of core habitat would remain unchanged but could be negatively influenced or made less effective by unrestricted cross-country vehicle travel. This alternative is expected to have the greatest direct and indirect effects on wildlife species associated with the cliff/rock/talus habitat type because of the possibility of route proliferation.

Action Alternatives: The Minimum Access Alternative B is expected to provide the highest benefit to wildlife species in cliff/rock/talus habitats because it best addresses the potential impacts of motorized and non-motorized travel. The Proposed Action Alternative C provides a median approach between the other two action alternatives. The primary difference between the alternatives is the amount of open and closed motorized routes because the non-motorized routes are similar between all of the action alternatives. The greatest benefit to wildlife is expected to be relative to the highest amount of route that is closed. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C. The differences between these alternatives are minimal because of the small amount of area involved. They do represent a 23 to 45% improvement relative to the Current Use (No Action) Alternative A.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of cliff habitat protected. The remaining open routes in the three action alternatives would still result in direct habitat loss, with the acreages reflected in Table 34 above. Potential impacts from the remaining open routes are expected to be relative to the amount of direct habitat loss associated with each alternative. They are highest in the Maximum Access Alternative D (approximately 17% higher than the Proposed Action Alternative C and 33% higher than the Minimum Access Alternative B).

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). The highest acreage of core habitat is available in the Minimum Access Alternative B (+375 acres or 108% relative to the Current Use (No Action) Alternative A) and the lowest in the Maximum Access Alternative D (+193 acres or 104% relative to the Current Use (No Action) Alternative A). The Proposed Action Alternative C is median between the two (+218 acres or 105% relative to the Current Use (No Action) Alternative A), but closer to the acreage in the Maximum Access Alternative D. There is

probably little difference between all three action alternatives unless important local cliff sites are involved. None of the action alternatives result in the addition of a large (greater than 1,000 acre) or very large (greater than 4,000 acre) core area.

10-12) Wetlands, Low-Elevation Riparian, and High-Elevation Riparian

They are combined in this analysis because of the relatively small acreages involved, their sensitivity to travel management issues, and the similar high-ecological values that each type offers as riparian habitat. High-elevation riparian is minimally represented (nine acres and no open routes in any alternative) so much of the analysis involves wetlands and low-elevation riparian. Differences and similarities between these two habitat types are discussed where appropriate. These three habitat types will be referred to as "riparian habitats" in the analysis of alternatives.

Table 35: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Wetland Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	3.6 miles 6.9 acres 0.18% 52%	6.9 miles 11.4 acres 0.30% 100%	2.8 miles 5.8 acres 0.15% 41%	4.5 miles 8.1 acres 0.21% 65%
Non-Motorized Open	0.1 miles 0.1 acres <0.01%	0.2 miles 0.1 acres <0.01%	0.3 miles 0.3 acres 0.01%	0.5 miles 0.5 acres 0.01%
Closed/Reclaimed or Open to Admin Use	10.0 miles 14.1 acres 0.37%	6.6 miles 9.5 acres 0.25%	10.6 miles 15.0 acres 0.39%	8.8 miles 12.4 acres 0.33%
Using the USFWS Wetlands and Deepwater Habitats Classification/National Wetlands Inventory Mapping				

Table 36: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Low Elevation Riparian Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	4.1 miles 7.6 acres 0.27% 61%	6.7 miles 11.1 acres 0.40% 100%	3.4 miles 6.6 acres 0.24% 51%	4.7 miles 8.4 acres 0.30% 70%
Non-Motorized Open	0.5 miles 0.3 acres 0.01%	0.6 miles 0.2 acres 0.01%	0.5 miles 0.3 acres 0.01%	0.6 miles 0.4 acres 0.01%
Closed/Reclaimed or Open to Admin Use	8.4 miles 11.6 acres 0.42%	5.6 miles 8.2 acres 0.29%	9.1 miles 12.6 acres 0.45%	7.7 miles 10.6 acres 0.38%

Table 37: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in High Elevation Riparian Habitat by Alternative				
Designation	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0
Non-Motorized Open	0.1 miles <0.1 acres	0.1 miles <0.1 acres	0.1 miles <0.1 acres	0.1 miles <0.1 acres
Closed/Reclaimed or Open to Admin Use	0.0	0.0	0.0	0.0

Approximately 3,051 acres of core habitat occurs in riparian habitats. This represents about 0.59% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts that are occurring and reduce the core habitat acres. Any impacts that occur in these habitat types from route proliferation and off-road travel are likely to be more pronounced because of the sensitive soils and vegetation and the high amount of species of concern that occupy these habitat types (see Wildlife - Threatened and Endangered Species section).

Wetlands, riparian zones, and riparian-associated species are highly vulnerable to habitat damage and disturbances and could be highly impacted by unrestricted cross-country vehicle travel. Future impacts due to route proliferation are a critical concern in these habitat types. The Current Use (No Action) Alternative A is expected to have the greatest direct and indirect effects on wildlife species for these reasons.

Action Alternatives: The Minimum Access Alternative B is expected to provide the highest benefit to wildlife species in riparian habitats because it best addresses the potential impacts of routes, and motorized and non-motorized travel. Change does not occur due to the lack of motorized routes. The Proposed Action Alternative C provides a median approach between the other two action alternatives. The primary difference between the alternatives is the amount of open and closed motorized routes because the non-motorized routes are similar between all of the action alternatives. The greatest benefit to wildlife is expected to be relative to the highest amount of route that is closed. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C. The mileage differences between these alternatives are minimal. Slight differences are expected to be important because of the sensitivity and importance of these habitat types. Minimum Access Alternative B provides a 49-59% improvement relative to the Current Use (No Action) Alternative A, Maximum Access Alternative D a 30-35% improvement relative to the Current Use (No Action) Alternative A, and Proposed Action Alternative C a 39-48% improvement relative to the Current Use (No Action) Alternative A.

The additional habitat gained by each alternative may result in different productivity increases by certain wildlife species, with the highest gains associated with the greatest amount of route

closures. The remaining open routes in the three action alternatives would still result in direct habitat loss, with the acreages reflected in Tables 35, 36 and 37 above. Potential impacts from the remaining open routes are expected to be relative to the amount of routes that access or come close to important cliff/rock/talus habitat.

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). When considering all of the riparian habitat types combined, the highest acreage of core habitat is available in the Minimum Access Alternative B (+372 acres or 112% relative to the Current Use (No Action) Alternative A), lowest in the Maximum Access Alternative D (+200 acres or 107% relative to the Current Use (No Action) Alternative A), and median in the Proposed Action Alternative C (+295 acres or 110% relative to the Current Use (No Action) Alternative A). The small differences in core riparian habitat between the action alternatives is expected to be of much higher ecological significance than the acreage differences suggest because of the high value of these habitats.

13-14) Aspen and Mixed Conifer

They are combined in this analysis because of the relatively small acreages involved and because they are often inter-mixed or occur in close proximity. Aspen accounts for about 92% of the total combined acreage.

Approximately 1,622 acres of core habitat occurs in aspen and mixed-conifer habitats combined. This represents about 0.31% of the core habitat for all habitat types found on the public lands.

Current Use (No Action) Alternative A: Unrestricted cross-country travel would continue to exacerbate any impacts if and when it occurs in this habitat type and reduce the core habitat acres. Any impacts that may be occurring in these habitat types from off-road travel are most likely more pronounced in aspen because of the sensitive soils and vegetation and the high species richness associated with this habitat type.

The risk of route proliferation in aspen and/or mixed-conifer habitats is probably moderate because of terrain and vegetation. This alternative is expected to have the greatest direct and indirect effects on wildlife species since the core habitat would remain vulnerable to unrestricted vehicle travel and route proliferation.

Action Alternatives: The Minimum Access Alternative B is expected to provide the highest benefit to wildlife species in aspen/mixed-conifer habitats because it best addresses the potential impacts of routes, and motorized and non-motorized travel. The Proposed Action Alternative C provides slightly (6%) more protection than maximum use. The greatest benefit to wildlife is expected to be associated with the highest amount of routes that are closed. The greatest amount of benefit is expected from the Minimum Access Alternative B because it provides about 30 to 35% more protection than the other two action alternatives.

There is probably little difference between the action alternatives due to the small acreages involved. The remaining open route network in the three action alternatives would result in direct habitat loss, with the acreages reflected in Tables 38 and 39 above. The potential impacts from this are expected to be relative to the amount of direct habitat loss associated with each alternative.

Table 38: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Aspen Forest Habitat by Alternative				
Designation	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	4.6 miles 7.0 acres 0.29% 64%	7.2 miles 10.5 acres 0.44% 100%	3.2 miles 5.1 acres 0.21% 44%	4.9 miles 7.4 acres 0.31 68%
Non-Motorized Open	1.8 miles 0.9 acres 0.04%	1.7 miles 0.6 acres 0.03%	1.8 miles 1.0 acres 0.04%	1.9 miles 1.1 acres 0.05%
Closed/Reclaimed or Open to Admin Use	3.0 miles 3.9 acres 0.16%	0.5 miles 0.6 acres 0.03%	4.4 miles 5.7 acres 0.24%	2.6 miles 3.3 acres 0.14%

Table 39: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Mixed-Conifer Habitat by Alternative				
Designation	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	0.1 miles 0.2 acres 0.09% 33%	0.3 miles 0.4 acres 0.18% 100%	0.1 miles 0.2 acres 0.09% 33%	0.1 miles 0.2 acres 0.09% 33%
Non-Motorized Open	<0.1 miles <0.1 acres <0.01%	<0.1 miles <0.1 acres <0.01%	<0.1 miles <0.1 acres <0.01%	0.1 miles 0.1 acres 0.05%
Closed/Reclaimed or Open to Admin Use	0.3 miles 0.3 acres 0.14%	0.1 miles 0.1 acres 0.05%	0.3 miles 0.3 acres 0.14%	0.2 miles 0.2 acres 0.09%

The amount of core habitat available for security and edge-sensitive species differs between the action alternatives (see Table 25). The highest acreage of core habitat is available in the Minimum Access Alternative B (+194 acres or 112% relative to the Current Use (No Action) Alternative A) and least in the Maximum Access Alternative D (+47 acres or 103% relative to the Current Use (No Action) Alternative A). The Proposed Action Alternative C is median between the two (+58 acres or 104% relative to the Current Use (No Action) Alternative A) but most similar to the Maximum Access Alternative D.

15-16) Agricultural, Residential, and Unclassified Habitat Types

Direct and Indirect Effects: This type would change by only one-tenth of a mile in all action alternatives (Table 40 and 41). The amount of core habitat in the agricultural and residential habitat varies between 53 and 62 acres in the no action and action alternatives. This minimal amount of acreage and the changes proposed to it in the alternatives is expected to have little to no influence.

The unclassified habitat type consists of those small pieces of land derived during the mapping process that could not be classified into one of the 16 habitat types. Analysis information is not

available pertaining to unclassified lands, and they are considered insignificant because of the small acreages involved.

Table 40: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Agriculture Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	0.5 miles 1.1 acres 0.59 83%	0.6 miles 1.3 acres 0.70% 100%	0.5 miles 1.1 acres 0.59% 83%	0.5 miles 1.1 acres 0.59% 83%
Non-Motorized Open	0.0	0.0	0.0	0.0
Closed/Reclaimed or Open to Admin Use	0.5 miles 0.8 acres 0.43%	0.4 miles 0.5 acres 0.27%	0.5 miles 0.8 acres 0.43%	0.5 miles 0.8 acres 0.43%

Table 41: Miles/Acres of Routes and Percentage of Total Habitat Impacted in Open vs. Closed Status in Residential Habitat by Alternative

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Motorized Open Acres Impacted % of Habitat Type Impacted % of Impact Relative to Alt. A	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0
Non-Motorized Open	0.0	0.0	0.0	0.0
Closed/Reclaimed or Open to Admin Use	0.0	0.0	0.0	0.0

Effects of Alternatives on Focal Species Groups and Core Habitats

Core habitat is considered one of the most critical needs for most wildlife species and can be used to assess fragmentation and disturbance impacts within individual habitat types. The amount of core habitat available in each alternative is considered one of the most important measurements from which to gauge potential effects on focal species groups and other wildlife species. This analysis focuses on changes to core habitat. Additional information regarding core habitat relative to the project area can be found in Table 50.

The 300 foot policy allows dispersed recreational activities that are associated with vehicle parking from a staging area (hunting, fishing, hiking, biking, horseback-riding, camping, etc.) to occur within 300 feet of the designated motorized route as long as resource damage does not occur. This policy does not apply to ACECs and the WSA where off-route vehicle travel is strictly prohibited. Since route proliferation cannot legally occur because the creation of new routes is not permissible, impacts to wildlife, though possible, are not expected to increase habitat fragmentation. Dispersed recreation is temporary and impacts to wildlife from these activities are temporary.

Current Use (No Action) Alternative A: This alternative potentially maintains about 54.3% (281,011 acres) of the public lands as core habitat. The core habitat is comprised of 69 core

areas greater than 1,000 acres in size, with nine of these being greater than 4,000 acres. The mean acreage associated with the ten largest core areas is approximately 5,863 acres. The Current Use (No Action) Alternative A offers the lowest amount of large (greater than 1,000 acres) or very large (greater than 4,000 acres) core areas and the smallest mean core area size. It maintains the highest percentage of public lands impacted by traffic (45.7%). This is most likely an underestimate because motorized cross-country travel is unrestricted and some existing core habitats are probably impacted at least on a periodic basis. The risk of route proliferation in the future is highest under this alternative for all species, and would most likely provide additional impacts in some habitat types. In the Current Use (No Action) Alternative A, the very large (greater than 4,000 acres) core areas will continue to be restricted to the San Luis Hills WSA, Alamosa River, Lower Saguache, San Luis Hills ACEC, and Trickle OHV Subunits.

The Current Use (No Action) Alternative A maintains about 56.4% (83,168 acres) of the existing bighorn sheep area as core habitat (Table 42). Motorized and non-motorized routes would influence about 52.6% and 0.85% of the available habitat, respectively. Winter range closures for big game species are not consistently applied or enforced, which could lead to potential impacts on local bighorn sheep populations. The 300 foot rule does not apply to this alternative.

Table 42: Core Habitat for Bighorn Sheep (acres / percentage)

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core Areas/Closed Routes, Public Land (acres) Change Relative to the No Action	91,409 acres 61.93% +10%	83,168 acres 56.35% Risk of Future Route Proliferation	97,693 acres 66.19% +17%	89,287 acres 60.50% +7%
Non-motorized Open Routes (Buffer area)	2,317 acres 1.57%	1,260 acres 0.85%	2,601 acres 1.76%	2,040 acres 1.38%
Motorized Open Routes (Buffer area) (includes ATV, general, non BLM, limited-primary private property, and "Other" buffered routes that overlap public lands)	66,146 acres 44.82%	77,691 acres 52.64%	58,088 acres 39.36%	69,278 acres 46.94%
Administrative Use (Buffer area)	3,465 acres 2.35%	398 acres 0.27%	4,076 acres 2.76%	2,243 acres 1.52%
Total land base of Public Lands	147,592 acres 0.29%	147,592 acres 0.29%	147,592 acres 0.29%	147,592 acres 0.29%

Core habitat for mule deer, elk, black bear, and mountain lion are analyzed as a group since each species occupies the primary habitat according to the NDIS maps (see Table 43). Core habitat is maintained on about 54.3% (281,011 acres). Motorized and non-motorized routes would influence about 58.3% and 0.44% of the available habitat, respectively. Winter range closures for mule deer and elk are not consistently applied or enforced and could lead to potential impacts. Due to the types of habitat and topography that mule deer and elk occupy during winter, impacts from unrestricted human travel would probably be greater than those associated with bighorn sheep. Future route proliferation could pose additional impacts on these species groups. Large carnivores could be impacted as they follow big game species onto the winter range areas.

Core habitat for pronghorn antelope would be maintained on about 53.1% (234,416 acres) (Table 44). Motorized and non-motorized routes would influence about 59.7% and 0.24% of the available habitat, respectively. Due to the types of habitat and topography that pronghorn antelope occupy during winter, impacts for unrestricted human travel would probably be greater than those associated with bighorn sheep and possibly mule deer and elk. Future route proliferation could pose additional impacts on these species groups. Large carnivores could possibly be impacted if they follow pronghorn onto their winter range.

Table 43: Core Habitat for Mule Deer/Elk/Black Bear/Mountain Lion (acres / percentage)

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core Areas/**Closed** Routes, Public Land (acres) Change Relative to the No Action	311,690 acres 60.23% +11%	281,011 acres 54.30% Risk of Future Route Proliferation	329,740 acres 63.72% +17%	300,039 acres 57.98% +7%
Non-motorized **Open** Routes (Buffer area)	4,803 acres 0.93%	2,267 acres 0.44%	4,253 acres 0.82%	4,396 acres 0.85%
Motorized **Open** Routes (Buffer area)	253,789 acres 49.04%	301,478 acres 58.26%	229,232 acres 44.30%	270,052 acres 52.18%
Administrative Use (Buffer area)	21,206 acres 4.10%	3,416 acres 0.66%	24,862 acres 4.80%	12,354 acres 2.39%
Total land base of Public Lands	517,492 acres 100%	517,492 acres 100%	517,492 acres 100%	517,492 acres 100%

Table 44: Core Habitat for Pronghorn Antelope (acres / percentage)

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core Areas/**Closed** Routes, Public Land (acres) Change Relative to the No Action	260,560 acres 59.02% +11%	234,416 acres 53.10% Risk of Future Route Proliferation	276,131 acres 62.55% +18%	250,384 acres 56.72% +7%
Non-motorized **Open** Routes (Buffer area)	2,774 acres 0.63%	1,080 acres 0.24%	2,704 acres 0.61%	2,613 acres 0.59%
Motorized **Open** Routes (Buffer area)	223,157 acres 50.55%	263,551 acres 59.70%	201,823 acres 45.72%	237,144 acres 53.72%
Administrative Use (Buffer area)	19,780 acres 4.48%	3,273 acres 0.74%	23,281 acres 5.27%	11,707 acres 2.65%
Total land base of Public Lands	441,458 acres 85.31%	441,458 acres 85.31%	441,458 acres 85.31%	441,458 acres 85.31%

Core habitat for Gunnison's prairie dog and other small mammals could be impacted in a similar manner. The Current Use (No Action) Alternative A maintains about 54.4% (46,268 acres) of the existing Gunnison's prairie dog area as core habitat (Table 45). Because of terrain and vegetation features, it is likely that core habitat could be further impacted by future route proliferation. Motorized and non-motorized routes would influence about 55.9% and 0.05% of the available habitat, respectively.

Action Alternatives: The Minimum Access Alternative B is expected to provide the highest benefit to wildlife species because it best addresses the potential impacts of motorized and non-motorized routes and their influence on core habitat areas (see Table 50). The number of large core habitat areas (greater than 1,000 acres) increases by five in the Minimum Access Alternative B, by seven in the Maximum Access Alternative D, and by six in the Proposed Action Alternative C. Although this seems counter-intuitive, the greatest number of 1,000 acre core areas occurs in the Maximum Access Alternative D because the existing very large (greater than 4,000 acres) core areas are actually being fragmented and contributing to the smaller pieces

Table 45: Core Habitat for Gunnison Prairie Dog (acres / percentage)

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core Areas/**Closed** Routes, Public Land (acres) Change Relative to the No Action	53,011 acres 62.33% +15%	46,268 acres 54.40% Risk of Future Route Proliferation	54,862 acres 64.51% +19%	50,013 acres 58.80% +8%
Non-motorized **Open** Routes (Buffer area)	118 acres 0.14%	45 acres 0.05%	145 acres 0.17%	188 acres 0.22%
Motorized **Open** Routes (Buffer area)	39,330 acres 46.24%	47,501 acres 55.85%	36,934 acres 43.43%	42,794 acres 50.32%
Administrative Use (Buffer area)	4,564 acres 5.37%	33 acres 0.04%	3,488 acres 4.10%	2,045 acres 2.40%
Total land base of Public Lands	85,050 acres 16.44%	85,050 acres 16.44%	85,050 acres 16.44%	85,050 acres 16.44%

Using Gunnison Prairie Dog Habitat Coverage in DOW NDIS
Note: the layer, "overall range," does not fall within the extent area.

across the landscape. Habitat security issues and fragmentation concerns are best addressed in the Minimum Access Alternative B because it maintains nine very large (greater than 4,000 acres) core habitat areas, while the Maximum Access Alternative D and Proposed Action Alternative C maintain six and seven, respectively.

The mean acreage associated with the ten largest core areas in the Minimum Access Alternative B is approximately 10,068 acres (see Table 50). In the Maximum Access Alternative D and Proposed Action Alternative C this is reduced to about 6,735 and 8,396 acres, respectively (see Table 50). This reduction in mean core area is associated with a corresponding increase in the percentage of public lands impacted by traffic. In the Minimum Access Alternative B, traffic impacts are associated with 36.3% of the area. In the Maximum Access Alternative D and Proposed Action Alternative C, these percentages increase to 42% and 39.8%, respectively. All action alternatives remain considerably lower than the traffic impacts associated with the current use, which occur on at least 45.7% of the area. Future route proliferation could further increase traffic impacts and reduce the effectiveness of the core habitat areas.

Core habitat for bighorn sheep is best addressed in the Minimum Access Alternative B, which maintains about 66.2% (97,693 acres) of the existing area as core habitat. In the Maximum Access Alternative D and Proposed Action Alternative C, core habitat is maintained on about 60.5% (89,287 acres) and 61.9% (91,409 acres) of the bighorn sheep habitat, respectively.

Motorized and non-motorized routes adjust accordingly, with the Minimum Access Alternative B influencing about 39.4% and 1.8% of the available habitat, the maximum use about 50% and 1.4%, and the Proposed Action Alternative C about 44.8% and 1.6%. In all action alternatives, bighorn sheep winter range would be better protected due to consistent application of the route closures and management guidelines coordinated annually with the local DOW office.

In the Minimum Access Alternative B, core habitat for mule deer, elk, black bear, and mountain lion is maintained on about 63.7% (329,740 acres) of the existing key habitat. In the Maximum Access Alternative D and Proposed Action Alternative C, the amount of core habitat for these species groups varies from about 58% (300,039 acres) to 60.2% (311,690 acres), respectively. Motorized and non-motorized routes adjust accordingly, with the Minimum Access Alternative B influencing about 44.3% and 0.82% of the available habitat, the maximum use about 52.2% and 0.85%, and the Proposed Action Alternative C about 49% and 0.93%. This indicates that the Minimum Access Alternative B best addresses the values associated with wildlife core habitat for these species, the Maximum Access Alternative D the least, and a median approach in the Proposed Action Alternative C that increases non-motorized use in order to decrease motorized use while still providing public access. In all action alternatives, mule deer and elk winter range would be better protected due to consistent application of the route closures and management guidelines discussed annually with the local DOW office. It is anticipated that habitat security values for all large carnivores would be better protected because they are sensitive to disturbances from humans.

Core habitat for pronghorn antelope is best addressed in the Minimum Access Alternative B, which maintains about 62.6% (276,131 acres) core habitat. In the Maximum Access Alternative D and Proposed Action Alternative C, core habitat is maintained on about 56.7% (250,384 acres) and 59% (260,560 acres) of the total antelope habitat, respectively. Motorized and non-motorized routes follow the patterns of the other focal species groups, with the Minimum Access Alternative B influencing about 45.7% and 0.61% of the available habitat, the maximum use about 53.7% and 0.59%, and the Proposed Action Alternative C about 50.6% and 0.63%. In all action alternatives, pronghorn antelope winter range would be better protected due to consistent application of the route closures and management guidelines coordinated annually with the local DOW office.

The maintenance of core habitat for Gunnison's prairie dog is important because of its susceptibility to "recreational shooting" and its relationship to species such as mountain plovers, burrowing owls, and broad-winged raptors. The Minimum Access Alternative B best addresses these issues and maintains about 64.5% (54,862 acres) of the existing and potential colony areas as core habitat. In the Maximum Access Alternative D and Proposed Action Alternative C, core habitat is maintained on about 58.8% (50,013 acres) and 62.3% (53,011 acres) of the total colony area, respectively. Motorized and non-motorized routes adjust accordingly, with the Minimum Access Alternative B influencing about 43.4% and 0.17% of the available habitat, the maximum use about 50.3% and 0.22%, and the Proposed Action Alternative C about 46.2% and 0.14%.

The 300 foot policy does apply under the action alternatives and may impact wildlife differentially depending on tolerance to human presence, the type of recreational activity, the frequency of the activity, and the level of fidelity the animal has to the area that is being impacted. The impacts under the Minimum Access, Alternative B, are likely to be reduced

compared to the proposed Action, Alternative C, and Maximum Access, Alternative D. Effects under Alternative C are moderate in disturbance to wildlife compared to Alternative D. There are fewer routes under Alternative B for dispersed recreation, less access to habitat, less potential for resource damage (destruction of habitat, nests, burrows, hiding cover). More habitat is left undisturbed for wildlife under Alternative B. There is more access to wildlife habitat under Alternative D, more fragmentation of habitat, and in high use areas the dispersed recreation impacts could be substantial to wildlife and wildlife habitat. Disturbances to wildlife depending on the time of year, may affect wildlife movement, foraging and cover habitat, and where wildlife can raise their young. Recreation activities that disturb wildlife during sensitive seasons, winter and spring, should be discouraged or prohibited.

Public Land Health Standards: Terrestrial wildlife impacts pertaining to San Luis Valley TMP alternatives were analyzed according to the BLM SLRA RMP, the Public Land Health Standards as approved by the Secretary of Interior, February 1997, and BLM recreation guidelines as they relate to the maintenance of healthy plant and animals communities. The Standards describe natural resource conditions that are needed to sustain public land health and underscore decision-making and evaluation of all multiple uses of the public lands, including recreational travel.

The Standards pertinent to impact assessment of San Luis Valley TMP alternatives on terrestrial wildlife include those related to plant and animal communities. Standard 3 directs BLM to "Protect wildlife habitat by preserving connectivity and avoiding fragmentation" and reads:

> Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes. Landscapes exhibit connectivity of habitat or presence of corridors to prevent habitat fragmentation.

Standard 3 provides direction for BLM to manage species, populations, and wildlife habitat on a local and landscape level to assure that habitat and habitat connectivity are maintained and enhanced and habitat fragmentation is avoided.

Most of the project area is meeting the Standard for Public Land Health for plant and animal diversity. A few isolated areas are not meeting this standard, which is due primarily to the proliferation of travel routes and the use increases on those routes. The three action alternatives would either meet or make improvements toward meeting this Standard. The most improvement would occur with the minimal access alternative and the least improvement would occur under the Maximum Access Alternative D.

Mitigation

The following mitigation measures would apply to all action alternatives:

- New trail construction such as re-routes should be inventoried for use by unique species of terrestrial wildlife prior to construction. Denning, calving, wintering, or other important

terrestrial habitats for key species (i.e. bighorn sheep, mule deer, elk, furbearers, etc.) should be avoided.

- Monitor routes for disturbances and adjust human access opportunities as necessary through seasonal restrictions or other methods. Educate the public about the reasons for these restrictions.

- Incorporate the designated routes into the maintenance plan for San Luis Valley public land roads in accordance with the final decision.

  Utilize the standard travel uses signing program developed by the Natural Resources Working Group. Institute an aggressive sign maintenance program. Utilize volunteers to assist in sign maintenance.

WILDLIFE - AQUATIC (includes information related to Standard 3)

Affected Environment

Aquatic habitats and the species that occupy them vary greatly. Regionally, wetlands within the San Luis Valley are considered to be some of the most diverse and important wetlands complexes within Colorado. The importance involving the public lands and the diversity in habitat types can be attributed to varying elevation, aspect, discharge, valley and channel types, soil properties, and land management influences. Their specific locations are well described in the Floodplains, Wetlands, and Riparian Zones section and in the table and figure presented there. The BLM is mandated by legislation, executive orders, policy, and land use plans to manage aquatic habitat to protect their important values (Vail, et al. 1989, and others) (see Appendix 17). Summarizing these cumulative works; they direct the BLM and other Federal agencies to monitor, evaluate, and control on a continual basis, their activities so as to "*protect and enhance*" the quality of the aquatic environment. Travel management planning as related to the aquatic environment should seek to serve this function while meeting other similar legislation aimed at multiple use land management.

Aquatic habitat can be broadly grouped into categories to include ephemeral habitat, intermittent streams, wet areas, perennial streams, rivers, and standing water wetlands including seep/spring habitat (see Appendix 11A). This summation of aquatic habitat classification systems (Cowardin et al., 1979) broadly characterizes the environments actually or potentially affected by public and administrative travel on public lands. Public lands can be largely separated into arid land subunits consisting of virtually all ephemeral[12] habitats (i.e., no aquatic habitat) and subunits with substantial aquatic habitat. Subunits with no, or minimal, perennial aquatic habitats include:

- Elephant Rock
- Railroad Corridor ACEC

[12] "Ephemeral" as used here would refer to only yielding surface water during, or possibly for only a short period, related to a specific precipitation event.

- South Fork
- La Jara
- Ra Jadero ACEC
- Los Mogotes ACEC
- San Luis Hills ACEC
- San Luis Hills WSA
- San Luis Hills

Isolated springs may occur in some subunits and are discussed in the Floodplains, Wetlands and Riparian Zones section. Poor watershed conditions in these arid subunits can affect non-BLM aquatic resources down stream if they contribute to changes in overland flow runoff and increased sediment loads. Issues and concerns as brought forth in the Water Quality - Hydrology and Floodplains, Wetlands and Riparian Zones sections for these subunits offer additional important information relative to aquatic habitat for travel management decisions. The subunits listed in the above table and regarded as arid are "rain shadowed" by larger mountains. They generally are disconnected geologically from the mountains receiving enough precipitation to form perennial habitats and the draining waters from those higher elevation mountains flow around the public lands analyzed.

The remaining subunits contain perennial aquatic habitat that can be enhanced, maintained, or degraded by decisions made in the travel management planning process. Effects upon aquatic habitat from public recreational and other forms of travel (described in the Water Quality - Hydrology and Floodplains, Wetlands and Riparian Zones sections) are better understood by examining aquatic habitat conditions valley wide.

Overview of Aquatic Environments: Aquatic habitats and the species that depend upon them can be greatly influenced by a variety of cumulative activities that affect watershed conditions. This distinction is important to recognize because the affects of different travel management options often occur in watersheds already degraded by other impacts. A brief overview is necessary to illustrate that aquatic habitats sometimes are modified physically and biologically. Cumulative effects analysis may be as important as individual route analysis because of the numerous activities that can influence aquatic systems.

Early routes were primarily for travel and transport and grew from horse trails to wagon trails and eventually to motorized roads and trails. Primary routes followed natural pathways along streams often cutting directly through aquatic habitat. Continued route development created spur routes up many Rio Grande sub-basins. Routes can impact aquatic habitat health directly, but also indirectly because of associated modifications to the uplands (see Water Quality - Hydrology section). Overlaid with route development, upland watershed alteration was caused through timber harvest (primarily haul routes up drainage bottoms), grazing, farming, and mining (Simmons, 1999) and greatly modified habitat function through out the San Luis Valley. Watershed alteration is not limited to public lands. Water development, including changes to ground water tables, and species introduction greatly impacted the integrity of the aquatic environment (Woodling, 1985). The major proportion of land with aquatic habitat in the San Luis Valley underwent land use conversion years ago through homesteading and farming.

Jeep routes, largely for recreational travel, expanded onto public lands and often led to additional impacts to smaller headwaters tributaries. Altered overland flow hydrology has led to down-cut streams and associated drained wet meadows in many settings throughout the SLV. When the balance between buffering capacity of vegetation and runoff hydrology is modified beyond what

a stream type evolved under, "stream balance" (Rosgen, 1996) can be affected. Recreational travel can be a cumulative disturbance upon aquatic systems that further stresses their functionality and the values they support.

Overview of Route Impacts on Streams: Routes are continuous, unnatural linear topographic features on the landscape that can capture and transport water at rates different than would otherwise occur across a rough surface. Water accumulating on routes and flowing down gradient gains energy at rates not typically found along a natural surface. Routes can lead to over-land flow interception, changed infiltration rates due to compaction, and the ensuing creation of an "artificial" tributary to a waterway can change runoff volume and sediment loads. The amount of change to surface hydrologic regimes is specific to each route, but can be additive as route networks expand. Overland routes can influence the timing, duration, and magnitude of runoff events. Increased peak flows can lead to channel damage and modification because of insufficient stream capacity. This type of stream channel damage often results in altered riparian vegetation and in-stream habitat conditions due to reduced stream flows. Stream stability is well defined in the literature (Rosgen, 1996) and is critical in meeting BLM land health standards (see Appendix 4).

Accelerated runoff affects sediment and bed-load transport and can impact resource integrity. Modification is difficult to observe because ecological changes can be subtle, as vegetation communities and in-stream aquatic characteristics evolve to match the modified hydrology. There can be drastic change. The process is obvious in instances where change is rapid as an outcome of a specific catastrophic precipitation event or where a threshold of road density is reached. Wildlife disturbance from traffic to species dependent on riparian habitat is the more obvious impact (discussed in the Wildlife - Terrestrial section). Proximity to a waterway is an important variable (see Appendix 15B). Routes in many instances begin on top of fine textured soil as pathways across vegetated lands. The route usually erodes away fine soil particles until a surface of larger substrate materials that do not erode remain without proper design and maintenance[13]. Routine travel becomes uncomfortable across large rocks and routes braid as travelers get around wet or rocky locations if the route is not maintained and erosion is severe. Erosion generally results in a lowered tread surface elevation. The channel can begin to erode laterally, loosening additional fine texture soil materials that get transported down the artificial channel of the route.

A chain reaction is started if additional sediments make it to an active stream channel where the stream begins to erode to create channel capacity to handle the increased flow or sediment. Sometimes a stream is overwhelmed by silts and just becomes muddy until a large enough flow occurs to flush the system or changes the channel. Not all routes fit this general impact description, nor do all streams erode. Steep rock channels, for instance, move the sediment through and don't erode, but often this would only be local and impacts from additional water or silt would be further down gradient. Confounding this simplified explanation is that variation in

[13] "Design and maintenance" as used here implies measures beyond maintaining a tread surface suitable for comfortable travel by a variety of means to include properly "disconnecting" the route from intercepting overland runoff.

discharge is common naturally and added change resulting from route generated flow can be masked by natural high-flow precipitation events. Increases in average base and peak flows will modify over time many types of stream channels (Rosgen, 1996). Keeping discharge from a watershed within a range of its natural variation would be an obvious objective in route designation and management. It was this type rationale staff utilized to discuss route impacts under various alternatives.

Impacts from routes can be reduced or mitigated by passing overland flow water with proper placement of numerous culverts or using techniques such as out-sloping, water bars, proper road placement, etc. Techniques to "disconnect" the route from natural water flow paths to minimize route-water interaction were rarely considered historically or were inadequate when early routes were developed but should have been designed during route construction. Native surface routes that are traveled when wet are a particular concern to land management agencies because of the damage to soils and desired maintenance conditions. For example, a melting snow pack might soak into a road somewhat but tracks through the snow serve as additional conduits for water and sediment delivery.

Small perennial and intermittent stream systems are the primary aquatic habitat types that could be affected by the different travel management alternatives associated with this analysis. Wet meadows, ponds, seeps, springs, and rivers are less often affected, because they occur less frequently. The stability of an aquatic wildlife population is dependent upon the habitat in which they reside. There are many viable populations of aquatic wildlife species, including important fisheries, present within the SLRA TMP area. Appendix 11A shows the miles of stream with fisheries, which is 37.8 % of all perennial streams. Non-fishery environments can be affected as well. Threatened or endangered aquatic species are not known to be imperiled due to the current transportation network. Poor travel management planning and excessive route density, is known to further impact some species that are present in some areas (Unpublished DOW inventory data). Leopard Frogs are a species of Special Concern both to the State of Colorado and BLM. These frogs do well in some environments in the planning area; however, silting can affect habitats. Other species such as the Rio Grande Chub can be similarly affected by poor travel management planning. Sediment impacts food chains, pool depths, bank stability, spawning areas, and a host of other variables that can limit population viability in streams. High sediment systems are prone to effects of whirling disease and other silt favored host pathogens. Silting impacts to waterways is a well studied national issue that can influence many different aquatic species (Behnke and Zarn, 1976).

Comparison of Alternatives: Health of aquatic resources needs to be maintained or improved within the SLRA (Vail et al., 1989) to meet BLM's Public Land Health Standards. Improvement should come by reversing negative affects in the "trends" of route proliferation and poor route maintenance. Direct impacts to streams, riparian areas, and tributary channels caused by roads and trails to the extent possible should be reduced through reduction in the number of crossings, miles of routes within or near drainages, improved route maintenance, and the implementation of road design best management practices.

Route segments were evaluated and discussion ensued relative to the magnitude of their impact. Each segment affecting streams has unique variables and settings that determine its relative impact to aquatic environments. Slope, soil, surrounding vegetation, distance to wetlands, and

channel type are prominent variables that determine direct, indirect, and cumulative impacts to water. In some instances, routes caused their damage years ago and have since begun to stabilize.

Environmental Consequences

Appendix 11A, Subunit and Route Association Within Riparian Areas by Alternative, represents a comparison of the alternatives in terms of how many miles of routes affecting aquatic habitat changes with respect to the current situation. The values in the table serve as a surrogate to summarize change to all the issues of route-water interaction.

The overriding benefit to implementing a designated travel management system under any action alternative is that it effectively stabilizes the trend of increased route proliferation, route spread, and keeps user-created routes from being created (see Trends and Assumptions section). Route designation occurs under all *action* alternatives and helps riparian areas move towards meeting Public Land Health Standards by at least holding the trend of route proliferation at status quo. The Current Use (No Action) Alternative A will continue degradation of the public lands as additional user-created routes will continue at or in greater numbers and cross-country travel will remain available without regard to the resource issues. Movement would be away from Public Land Health Standards. It is a rare situation where routes in riparian or anywhere in the watershed improves stream function or conditions unless the route is used to correct another resource problem of greater magnitude. Most routes serve social not resource objectives. Fewer routes, less use on the routes, less wet weather use, less compacting use, all combined with increased maintenance and patrol would *best* protect streams. Reduction in routes would help move resource conditions in the direction that BLM policy states, however this option may counter multiple use objectives. Often the least damaged streams occur in areas of "high core area value" (see Wildlife Terrestrial section, pg. 112-113).

The Current Use (No Action) Alternative A would continue to move public lands away from the Public Land Health Standards because of unmanaged motorized access across the landscape. Aquatic habitats and species would continue to be particularly vulnerable to impacts due to the sensitivity of these environments. The Minimum Access Alternative B and the Proposed Action Alternative C would provide the highest probability of minimizing stream impacts (see Appendix 11A). The Maximum Access Alternative D reduces potential impacts in relationship to the Current Use (No Action) Alternative. This alternative does not provide as much protection for aquatic concerns as the Minimum Access Alternative B or Proposed Action Alternative C because it provides for higher levels of motorized use. Most routes near stream channels are left unchanged under any of the action alternatives because they involve traditional routes that provide important access across public lands. The closures involved with the action alternatives generally occur on low benefit routes in smaller drainages. The following mitigation should be used, where possible, on the routes left open because many of the routes near stream drainages will not be closed.

The travel management plan allows for motorized vehicle use up to 300 feet off designated motorized routes. This 300 foot policy will allow vehicular use within riparian areas and could lead to degradation of riparian areas due to an increase in travel within the water influence zone and an increase in recreational activities within these areas. Riparian vegetation plays a major

role in sustaining the long-term integrity of aquatic systems and an increase visitor use could not only impact the riparian area, but the stream itself. Direct impacts resulting from increase use in riparian corridors include degradation or loss of vegetation, soil compaction and/or erosion, loss of ground cover, and stream bank instability. These impacts will affect the hydrologic function of the watershed by reducing the ability of the riparian area to store water, filter sediment, and mitigate the impacts of high flows on in-stream habitat. Heavy visitor use in riparian areas can lead to increased short-duration stream flows due to soil compaction, reduced long-term stream flows due to loss of water infiltration, loss of instream habitat due to increased sedimentation, and loss of vegetation needed to maintain riparian animal habitat and travel corridors. Resource damage to riparian areas and streams, along with impacts to fish and wildlife species will be more prolific under the Maximum Access Alternative D because more routes are within 300 feet of riparian areas. There will be fewer resource problems under the Proposed Action, Alternative C, and even fewer under the Minimum Access, Alternative B, since fewer routes are within 300 feet of riparian areas.

Cumulative Effects: Cumulative Effects for terrestrial and aquatic wildlife, migratory birds, and Threatened, Endangered, and Sensitive (TES) wildlife are evaluated at the end on the TES section (pg. 181) due to similarities in the discussion points and analysis.

Mitigation

The following mitigation measures would apply to all alternatives:

- Make effective use of temporary wet weather and seasonal closures. Through education, publicize the need and explain the rationale for voluntary limited use at any time throughout the year when a substantial wet period exists.

- Incorporate the designated routes into the maintenance plan for San Luis Valley public land roads in accordance with the final decision.

- Utilize the standard travel uses signing program developed by the Natural Resources Working Group. Institute an aggressive sign maintenance program. Utilize volunteers to assist in sign maintenance.

WILDLIFE - MIGRATORY BIRDS

Affected Environment

The Migratory Bird Treaty Act of 1918 (MBTA) was passed to put an end to the commercial trade in birds and their feathers that, by the early years of the 20th century, had severely impacted the populations of many native birds. The MBTA protects all migratory birds and their parts (including eggs, nests, and feathers). The MBTA is a domestic law that enforces treaties between the United States, Mexico, and Canada for the protection of a shared migratory bird resource. The primary concern for migratory birds from actions authorized by this TMP is in regards to the loss or disturbance of occupied nests.

Executive Order 13186 enacted in 2001 requires federal agencies to consider the effect of projects on migratory birds and directs agencies to review the list of Birds of Conservation

Concern (BCC) (USFWS, 2002) developed for the Bird Conservation Regions (BCRs) of the United States when assessing species that may occur within a project area. Land administered by the BLM SLRA occurs within the Southern Rockies/Colorado Plateau BCR 16. Table 46 identifies the list of BCC for BCR 16, their associated habitat types, and their status within the project area.

A review of the BCC list indicates that 25 species could breed in or migrate through the analysis area and have nests and stopover habitat that might be affected by the proposed action. The non-presence of habitat for four species excludes them from the list of birds affected; these species are the gray vireo, chestnut collared longspur, Sprague's pipit, and Crissal thrasher. Habitat exists that would support the Grace's warbler, but its presence has not been documented. The Bendire's thrasher and marbled godwit do not have documented nesting attempts and are most likely migrants.

The USFWS was mandated in 1988 to "identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973". Neotropical migrants are not covered in the SLRA RMP or on the Determination of NEPA Adequacy checklist. BLM must use the BCC list to determine potential affects on bird species in accordance with the MBTA.

The project area provides habitat for a variety of migratory birds including songbirds, water birds, shorebirds, and birds of prey. These birds were categorized into specific habitat types in which they nest and forage during the May to July period as well as during the winter for a few species. Habitat types were classified using the Partner's in Flight Priority Habitats. These habitat types were identified and considered during route evaluation using the ARS Route Evaluation Tree software© to document when a route was in or proximate to a habitat type (these habitat types are discussed in detail in the Wildlife-Terrestrial section). The list of migratory birds in BCR 16 were placed in their appropriate habitat type(s) so that they were accounted for under the habitat type on each route that was evaluated by the Interdisciplinary Team.

Most migratory bird use is limited to the summer period due to the cool climate, low precipitation, and harsh fall, spring, and winter months in the San Luis Valley. Birds arrive during late spring (April/May) and migrate from the area in early fall (August/September). The species present during summer are most likely breeding and rearing young. They leave as the

Table 46: USFWS Birds of Conservation Concern for BCR 16 and the Anticipated Influences of the Proposed Action

Species	Associated Habitat Types(s)	Occurrence in Analysis Area
Northern Harrier	Agricultural, Grassland, Wetlands	Yes
Swainson's Hawk	Agricultural, Grassland, Mountain Shrub, Semi-Desert Shrubland, Piñon/Juniper, Mixed-Conifer, Spruce-Fir, Low Elevation Riparian	Yes
Ferruginous Hawk	Grassland, Mountain Shrub, Semi-Desert Shrubland, Sagebrush Shrublands	Yes
Golden Eagle	Agricultural, Grassland, Cliff/Rock/Talus	Yes
Peregrine Falcon	Agricultural, Piñon/Juniper, Spruce-Fir, Ponderosa Pine, Cliff/Rock/Talus, Wetlands	Yes

Table 46: USFWS Birds of Conservation Concern for BCR 16 and the Anticipated Influences of the Proposed Action		
Species	**Associated Habitat Types(s)**	**Occurrence in Analysis Area**
Prairie Falcon	Agricultural, Grassland, Semi-Desert Shrubland, Cliff/Rock/Talus	Yes
Gunnison sage-grouse	Mountain Shrub, Sagebrush Shrubland, Low Elevation Riparian	Yes
Snowy Plover	Wetlands	Yes
Mountain Plover	Agricultural, Grassland, Semi-Desert Shrubland, Sagebrush Shrubland	Yes
Solitary Sandpiper	Wetlands	Yes
Marbled Godwit	Wetlands	Yes
Wilson's Phalarope	Wetlands	Yes
Yellow-billed Cuckoo	Low Elevation Riparian, Wetlands	Yes
Flammulated Owl	Aspen, Ponderosa Pine, Mixed-Conifer, Spruce-Fir	Yes
Burrowing Owl	Grassland, Semi-Desert Shrubland, Sagebrush Shrubland	Yes
Short-eared Owl	Agricultural, Grassland, Low Elevation Riparian, Wetlands	Yes
Black Swift	Cliff/Rock/Talus, High Elevation Riparian	Yes
Lewis's Woodpecker	Ponderosa Pine, Low Elevation Riparian	Yes
Williamson's Sapsucker	Aspen, Mixed-Conifer, Ponderosa Pine	Yes
Gray Vireo	Oak woodlands/scrub: *This habitat type is not present in the analysis area.*	No
Piñon Jay	Piñon/Juniper, Ponderosa Pine	Yes
Bendire's Thrasher	Semi-Desert Shrubland	Yes
Crissal Thrasher	Desert Scrub: *This habitat type is not present in the analysis area.*	No
Sprague's pipit	Short grass Prairie: *This habitat type is not present in the analysis area.*	No
Virginia's warbler	Mountain Shrub, Piñon/Juniper, Ponderosa Pine, Low Elevation Riparian	Yes
Black-throated gray warbler	Piñon/Juniper	Yes
Grace's warbler	Ponderosa pine: *Species is not present in the analysis area.*	No
Sage sparrow	Sagebrush Shrubland	Yes
Chestnut-collared longspur	Short grass Prairie: *This habitat type is not present in the analysis area.*	No

weather changes in late summer. Most species on the BCR 16 list follow this migration pattern. A few species are present during the wintertime. These species spend all or part of the winter in the San Luis Valley and include the northern harrier, short-eared owl, ferruginous hawk, golden eagle, peregrine falcon, prairie falcon, Lewis's woodpecker, and piñon jay. Winter recreation activities may affect a suite of birds that are considered migratory yet have resident populations or individuals roosting and foraging during the wintertime.

Environmental Consequences

Several assumptions are necessary to adequately address the potential impacts of the proposed TMP on migratory birds. The first assumption is that motorized and non-motorized travel on the variety of existing routes is impacting migratory birds and that this is contributing to declining population trends of some migratory birds as documented in the Colorado Land Bird Conservation Plan (Beidleman, 2000). Insufficient data exists to determine either the extent of these impacts (i.e., from motorized and non-motorized travel impacts) or their importance

relative to other known non-motorized impacts that lead to habitat degradation, conversion, and destruction (e.g., from agricultural and residential/commercial development). This data would be helpful when determining actual travel impacts to migratory bird species as well as other wildlife species. Travel impacts to migratory birds are related to topography since topographic features can affect noise and other human-related impacts from motorized and non-motorized visitors.

The second assumption is that, to some degree, a loss of habitat can be quantified by converting miles of routes to acres of habitat. This is accomplished by multiplying route miles by the width of the various types of routes to determine the amount of vegetation that is directly lost. Acreage figures are used to compare the actual area of vegetation loss attributed to routes because vegetation is the primary attribute that provides food and cover (see Table 51).

The third assumption is that routes which are designated as limited user will function as closed routes because travel on these routes would only occur on an occasional basis rather than routinely during the period of time when migratory birds are present. (i.e., relative to the existing management situation as represented by the Current Use (No Action) Alternative A alternative in which travel is not restricted to routes and is allowed cross-country) (see Table 51). The miles and acres of routes designated as county, private, or state would remain unchanged.

The potential impacts of winter travel on migratory birds will be addressed because some representative species are present during the winter. The closure of some routes during the winter (critical wildlife winter habitat) and the restriction to limit motorized and mechanized travel to designated routes under the action alternatives should reduce the direct effects on habitat as well as the amount of soil erosion that occurs in sensitive habitats. Disturbance to roosting birds may still occur, but the "take" of an individual bird is unlikely unless there is a direct impact with a vehicle. Overall, seasonal (winter) closures are expected to have a positive impact on the habitat of migratory birds whether or not the habitat is occupied by non-migratory species.

Current Use (No Action) Alternative A: This alternative would result in a total of 1,328.7 miles of routes remaining available to motorized vehicles (under the travel use categories of General and ATV). The Current Use (No Action) Alternative A allows for off-road travel by motorized and mechanized vehicles to occur on 389,279 acres outside of an ACEC. The off-road use results in the greatest amount of public land that is potentially impacted by travel, the least amount of core habitat areas that may provide security to migratory birds, and the greatest possibility of "take" of an individual species or an active nest due to unrestricted motorized travel (see Appendix 18). The number of routes and amount of off-road travel associated with this alternative may result in potentially significant impacts on migratory birds, especially during the nesting and brooding periods when species may be disturbed, nests may be crushed, and individuals may be adversely affected by vehicular travel through nesting areas. This alternative is expected to result in the greatest amount of disturbance during the nesting season, which in turn could lead to a greater risk of nest abandonment and desertion of traditional nesting areas. This may result in a possible "take" of migratory birds and limit the viability of some species. These impacts can be expected to increase and more than double throughout the life of this TMP due to the anticipated growth of the human population and the demand for increased recreational use.

Nesting habitat for some migratory birds would continue to be under-utilized along the 1,328.7 miles of routes (192.3 acres) designated as travel use categories of General and ATV due to disturbances caused by motorized and non-motorized human impacts. Unrestricted off-road travel and the proliferation of user-created routes would continue to result in a direct loss of vegetation used for foraging and nesting cover. This alternative would not further designate travel routes (other than those that may have been designated under the SLRA RMP and/or other activity level plans) and would allow for off-road impacts to continue. New user-created routes would continue to contribute to a loss of vegetation that provides habitat as the demand for motorized recreation increases.

The potential direct effects of this alternative to migratory birds include the crushing of nests, collisions with vehicles, and direct disturbances to individuals or colonies. Indirect effects include nest abandonment, a loss of habitat due to habitat alteration or destruction (especially to ground nesters), and a reduced prey base.

Cumulative effects of past, present, and future federal, state, tribal, local, or private actions that are reasonably certain to occur include agricultural practices, private land development, infrastructure construction and maintenance, livestock grazing practices, recreational use, and water diversions. Cumulatively, these actions contribute to the loss and degradation of habitat for migratory birds by reducing the effectiveness of breeding, brooding, roosting, and foraging habitat. These actions may reduce the overall viability of migratory birds within a BCR, as evidenced by the generally declining population trends of some migratory birds in BCR 16.

The 300 feet rule does not apply under this alternative.

Proposed Action Alternative C: This alternative, as it relates to migratory birds, is intended to address the statutory requirements for increased protection of migratory bird habitat while addressing the various statutes that require consideration of the public's commercial needs and recreational desires for motorized and non-motorized travel. Implementation of this alternative would allow motorized travel to the public on approximately 651 miles of routes (under the travel use categories of General and ATV) and eliminate cross-country travel (except for two small previously existing open areas). The routes designated for motorized vehicle travel would maintain the continued loss of about 1,591 acres of vegetation which could be used by migratory birds for breeding and feeding habitat. There is a significant increase in available habitat under this alternative compared to the Current Use (No Action) Alternative A and a moderate increase in core habitat areas. Approximately 904 acres of existing routes would be closed to travel and reclaimed or allowed to naturally revegetate to conditions similar to adjoining habitat. These closures would contribute to the amount of suitable habitat. The mileage reduction in routes under this alternative compared to the Current Use (No Action) Alternative A would reduce the amount of area subject to direct disturbance by motorized travel by 678 miles or by 51%. This alternative does not reduce the potential for continued impacts as much as the Minimum Access Alternative B, which reduces the potential for impacts by 70% relative to the Current Use (No Action) Alternative A. The direct disturbances to migratory birds could still occur as a result of avoidance of suitable habitat or through the disruption of breeding activities in some areas. Closing and/or reclaiming routes would improve habitat conditions and the additional acreage available for nesting and foraging cover may contribute to an increase in productivity. The likelihood of "take" of a bird or a nest under this alternative would be reduced from the Current

Use (No Action) Alternative A but may still occur more frequently than under the Minimum Access Alternative B.

The above effects analysis applies to the 300 foot policy. The 300 feet of allowable dispersed recreation disturbance will affect birds individually as long as the three assumptions appl,. Moderate effects are anticipated under Alternative C due to the moderate amount of routes available for recreation compared to the current use alternative. Effects to birds include disturbance to nests, temporary disturbance to foraging and hiding activities, and possible contact with individuals.

The types of potential impacts associated with the Proposed Action Alternative C are similar to the Current Use (No Action) Alternative A, but the extent and degree of the impacts should be considerably reduced under this alternative because there is less chance of disturbance, crushing of nests, and possibility of "take" to an individual due to collision. The cumulative effects of past, present, and future federal, state, tribal, local, or private actions mentioned for Current Use (No Action) Alternative A apply to the Proposed Action Alternative C, but the combined influence of the activities occurring on federal, state, tribal, local, or private lands may be lessened due to the increased habitat security created under this alternative.

Minimum Access Alternative B: This alternative would be the most restrictive, reducing the designated motorized routes to 400.3 miles available for travel use categories General and ATV. This reduction in travel routes would potentially increase the foraging, nesting, and roosting opportunities. This mileage reduction would directly improve or contribute to the revegetation of about 1,193 acres of habitat. 1,273 acres of nesting and foraging habitat could be improved when the routes designated for closure are reclaimed by native vegetation. This additional acreage would increase the available nesting and foraging cover and may contribute to an increase in productivity of local bird species. This alternative would be the most beneficial to migratory bird species and reduce the likelihood for "take" due to the restrictions associated with off-road travel, the reduction of route proliferation and redundancy, and the re-routing of routes that travel through riparian areas and contribute to impacts.

Fewer direct effects from the 300 foot policy are anticipated under the Minimum Access, Alternative B, with fewer routes available for dispersed recreation. The disturbance to individuals is still possible.

The types of potential impacts associated with the Minimum Access Alternative B are similar to the Current Use (No Action) Alternative A, but the extent and degree of the impacts should be considerably reduced because the amount of area subject to direct disturbance by motorized travel is reduced by about by 928 miles or by 70%. The establishment of designated travel routes, reduction in route redundancy, and removal of non-critical routes should help to minimize the risks to migratory birds due to a lessened probability of disturbance and direct "take" of an individual due to vehicle collisions and nest destruction. This alternative would result in the greatest amount of undisturbed core habitat areas, which should increase the amount of available habitat more so than the other alternatives.

The cumulative effects of past, present, and future federal, state, tribal, local, or private actions mentioned for the Current Use (No Action) Alternative A would still apply to the Minimum

Access Alternative B, but the combined influence of the activities occurring on federal, state, tribal, local, or private lands may be lessened due to the increased habitat security on public lands created under this alternative (see Table 50).

Maximum Access Alternative D: This alternative has the potential to impact more migratory bird habitat than the other action alternatives. This alternative would allow motorized vehicle travel on 892.8 miles of routes (under the travel use categories of General and ATV). The routes designated for motorized vehicle travel would result in the continued loss of about 1,906 acres of vegetation which could be used by migratory birds for breeding and feeding habitat. The high number of designated motorized travel miles would disrupt about 27-55% more migratory bird habitat than in the other action alternatives because habitat would be more accessible to vehicle travel. There is a greater chance of "take" of an individual or nest due to the greater amount of allowable vehicle and recreational use. These activities would be more widespread and may contribute to a greater amount of impacts to nesting and foraging habitat due a larger amount of habitat fragmentation.

Additional direct effects of the 300 foot policy are possible under the Maximum Access, Alternative D, because there are more routes from which dispersed recreation may occur. Effects include crushed nests, disturbance causing nest abandonment, or harm to individuals. Birds may temporarily abandon the area or may leave permanently depending on the level of use and type of the dispersed recreation.

The types of potential impacts associated with the Maximum Access Alternative D are similar to the Current Use (No Action) Alternative A. The extent and degree of the impacts are reduced by about 33% above baseline conditions (i.e., Current Use (No Action) Alternative A) due to traffic being limited to designated routes and 435.7 fewer miles of routes designated as open or limited. Cross-country travel by mechanized and motorized vehicles will be closed. The implementation of designated routes, reduction of route redundancy, and removal of non-critical routes from the designated system minimizes the risk to migratory birds because there is less chance of disturbance, crushing of nests, and possibility of "take" of an individual due to collision. There is an increase in available habitat compared to the Current Use (No Action) Alternative A. The amount of secure core habitat on public lands varies from about 2-4% less than the other action alternatives. Some impacts can be expected to continue in some locations. The cumulative effects of past, present, and future federal, state, tribal, local, or private actions mentioned for the Current Use (No Action) Alternative A would apply to the Maximum Access Alternative D, but the combined influence of the activities occurring on federal, state, tribal, local or private lands may be lessened due to the increased habitat security on public lands created under this alternative.

Cumulative Effects: Cumulative Effects for terrestrial and aquatic wildlife, migratory birds, and Threatened, Endangered, and Sensitive (TES) wildlife are evaluated at the end on the TES section (pg. 181) due to similarities in the discussion points and analysis.

Mitigation

The following mitigation measures would apply to all action alternatives:

- New trail construction such as re-routes should be inventoried for migratory bird use prior to construction. Nesting habitat for key migratory bird species should be avoided.

- Monitor routes for disturbances and adjust human access opportunities as necessary through seasonal restrictions or other methods.

WILDLIFE - THREATENED AND ENDANGERED SPECIES (includes information related to Standard 4)

This section analyzes the effects of implementing the TMP on BLM Special Status Species (SSS), which include Federally listed (threatened, endangered, proposed, and candidate species) and BLM state sensitive species. The Federal species are derived from the updated species list concurred upon by the USFWS on September 26, 2005. The state sensitive species addressed in this analysis are derived from the March 17, 2000 list, which is the most current revision. It is BLM policy to "not fund, authorize, or implement actions that may contribute to a need to list the species in the future". Conservation measures are provided for sensitive species as needed to meet BLM policy.

Analysis Procedures

The federally listed species that occur or may occur in the SLRA are identified in Table 48. Species that do not occur or do not have current or historic habitat present in the project area are not addressed further than this table because they will not be affected during implementation of the TMP. Each species that may be affected by the TMP is carried forward on an individual basis for analysis by alternative.

Table 47: Federally Threatened, Endangered and Candidate Species (USFWS concurrence 9-26-05)

Species	Status	Critical Habitat	Species Occurrence
Bald eagle	Threatened	No	Roost sites; species forages during winter and suitable habitat throughout planning area.
Black-footed ferret	Endangered	No	No known species occurrence. Historic habitat present that may be suitable for future reintroduction efforts.
Canada lynx	Threatened	No	Known occurrence, denning, winter foraging, summer foraging habitat available.
Mexican spotted owl	Threatened	No	No known occurrence; Suitable habitat in steep canyons.
Southwestern willow flycatcher	Endangered	Proposed	Known occurrence; suitable habitat in riparian systems
Uncompahgre fritillary butterfly	Endangered	No	No known species or habitat occurrence.
Western yellow-billed cuckoo	Candidate/ Sensitive	No	Known occurrence at McIntire/ Simpson; suitable habitat available in cottonwood riparian systems.

The analysis of effects for sensitive species differs because of the large number of species involved that utilize various habitats. Potential effects on sensitive species are based on anticipated effects to habitat with determinations made for individual species. The species analyzed in Table 60 are based on the combined Colorado BLM Sensitive Species List and DOW State Endangered and Threatened Species List. Table 60 further describes the habitat(s)

that each species utilizes and tiers the effects analysis for individual species to the analysis of habitat types provided in the Wildlife - Terrestrial section. A determination summary for each species and alternative is provided in Table 61.

Potential effects on federally listed and BLM sensitive species were analyzed according to the direction in the SLRA RMP, the Public Land Health Standards in Colorado, BLM Manual 6840 containing BLM TES policy, and as they relate to the maintenance of healthy plant and animal community Standards describe natural resource conditions that are needed to sustain public land health and underscore decision-making and evaluation of all multiple uses, including recreational travel. The Standards pertinent to the impact assessment on wildlife include those related to riparian systems, plant and animal communities, and sensitive, threatened, and endangered species. Standard 4 provides direction in regards to maintenance and enhancement of T&E and sensitive species habitats and populations on a local and landscape level, and states:

> Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities. Indicators: All the indicators associated with the plant and animal communities standard apply. There are stable and increasing populations of endemic and protected species in suitable habitat. Suitable habitat is available for recovery of endemic and protected species.

Potential impacts on T&E and sensitive species were analyzed under four travel alternatives developed by the Interdisciplinary Team in order to address pertinent statutes and in response to internal issues and public scoping. The impacts were then assessed using the route information and core habitat analysis techniques described for terrestrial species. An analysis of habitat fragmentation, movement corridors, and connectivity are specifically addressed for each Federally listed species due to their conservation status.

The process used to evaluate core habitat for each species involved assessing and characterizing each route in relationship to its type, width, type of use, and use level. These parameters provide a general degree of impact that each route might pose to individuals, populations, and habitats for a particular species or group of species. The GIS system was then used to assign high to low impact rankings for wildlife based on current information and professional judgment regarding each route. Once ranked, the routes are buffered by one of four distances to determine the amount of area where effective habitat is decreased or excluded due to impacts associated with human-use disturbances. Closed routes were not buffered because of the lack of vehicle use. The traffic-buffer classes used in this assessment are:

Table 48: Traffic Buffers

Distance	Description
165 feet (50 meters)	Low impact routes that receive low motorized use, administrative use routes/ permittee, utility routes, i.e., trails
330 feet (100 meters)	Moderate impact routes, moderate motorized use, trails and unimproved routes, private property access
820 feet (250 meters)	Moderate motorized use, unimproved routes, high use trails, higher use private property access routes
1,335 ft (407 meters)	Major improved routes with high use, high use motorized routes

An example of how the buffers were applied to each route is as follows: a foot trail that receives low use was buffered by 165 ft (50 meters) on both sides of the route. County roads that receive high motorized use were buffered by 1,335 ft (407 meters or ¼ mile). These analyses were conducted for all alternatives since the use attributes may change for individual routes. All buffers were developed based on local conditions and use patterns that reference previous research. To assess future impacts on wildlife, projections were made for each route and alternative based on their use level and from traffic-counter data as collected by the San Luis Valley Public Lands Center and the Counties (see Recreation section for more detail about the traffic-counter data). Buffers were placed at ¼ mile when comparisons were made between public, state, and private lands. Classifications of these routes were buffered at this level because of uncertainty regarding cumulative effects and their ability to provide core habitat in the future due to human population growth and possible changes in agricultural practices that may lead to less secure habitat for wildlife.

All routes were evaluated based on their approximate (average) width and length then converted into acres to measure potential habitat loss or gain depending on the route designation. It is recognized that the actual disturbance and loss of vegetation may be more or less than calculated on a per route basis. The standardized widths provide a comparison of potential habitat impacts for each alternative and are based on the following designations:

Table 49: Route Category Width

Route Category	Route Width
Single Track, Hiking Trails	3 ft.
ATV Trails	5 ft.
Extreme 4WD	8 ft.
Non-Motorized and Closed Routes	10 ft.
Primitive 4WD	10 ft.
Light Duty Maintained Dirt and Gravel	20 ft.
Light Duty Maintained Paved Routes	25 ft.
Highways	30 ft.

The amount of core habitat available by each alternative for T&E, candidate, and sensitive species is displayed in the "Wildlife - Terrestrial" section and below in Table 50.

Table 50: Core Habitat Analysis

	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core areas in planning area (acres)	1,018,128 acres	986,742 acres	1,036,441 acres	1,006,296 acres
Core areas on Public Land (acres)	311,690 acres	281,011 acres	329,740 acres	300,039 acres
Percent of planning area in core areas	42.5%	41.2%	43.3%	42.0%
Percent of Public Land in core areas	60.2%	54.3%	63.7%	58.0%
Percent of Planning Area impacted by traffic	57.5%	58.8%	56.7%	58.0%
Percent of Public Lands impacted by traffic	39.8%	45.7%	36.3%	42.0%
Mean core area size of 10 largest core areas (public lands)	8,396 acres	5,863 acres	10,068 acres	6,735 acres
Number of core areas greater than 1,000 acres(public lands)	75	69	74	76
Number of core areas greater than 4,000	16	9	18	15

acres(public lands)				

Tables 52 through 57 display the differences in effective core habitat for individual T and Es by alternative (see individual species sections that follow). The differences between alternatives for sensitive species are displayed in Table 25, above, which depicts the amount of core habitat available by alternative in each habitat type. The potential habitat loss or gain according to miles of motorized, non-motorized, and closed routes is depicted in Table 51.

Table 51: Miles/Acres of Routes and Percentage of Total Habitat Available in Open vs. Closed Status by Alternative

Habitat Type	Route Status	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Agriculture	Motorized Open	0.5 mile 1.1 acres 0.59	0.6 mile 1.3 acres 0.70%	0.5 mile 1.1 acres 0.59%	0.5 mile 1.1 acres 0.59%
	Non-motorized Open	0.0	0.0	0.0	0.0
	Closed/Reclaimed or Open to Admin Use	0.5 mile 0.8 acres 0.43%	0.4 mile 0.5 acres 0.27%	0.5 mile 0.8 acres 0.43%	0.5 mile 0.8 acres 0.43%
Alpine/ Subalpine	Motorized Open	13.6 miles 21.6 acres 0.18%	27.5 miles 40.1 acres 0.34%	11.1 miles 18.2 acres 0.15%	17.6 miles 27.0 acres 0.23%
	Non-motorized Open	2.7 miles 2.5 acres 0.02%	1.0 mile 0.4 acres <0.01%	2.3 miles 2.2 acres 0.02	1.7 miles 1.3 acres 0.01%
	Closed/Reclaimed or Open to Admin Use	15.7 miles 20.9 acres 0.18	3.6 miles 4.5 acres 0.04%	18.6 miles 24.6 acres 0.21%	12.7 miles 16.7 acres 0.14%
Aspen Forest	Motorized Open	4.6 miles 7.0 acres 0.29%	7.2 miles 10.5 acres 0.44%	3.2 miles 5.1 acres 0.21%	4.9 miles 7.4 acres 0.31
	Non-motorized Open	1.8 miles 0.9 acres 0.04%	1.7 miles 0.6 acres 0.03%	1.8 miles 1.0 acres 0.04%	1.9 miles 1.1 acres 0.05%
	Closed/Reclaimed or Open to Admin Use	3.0 miles 3.9 acres 0.16%	0.5 mile 0.6 acres 0.03%	4.4 miles 5.7 acres 0.24%	2.6 miles 3.3 acres 0.14%
Cliff/ Rock/ Talus	Motorized Open	5.3 miles 10.3 acres 0.16%	7.8 miles 13.7 acres 0.21%	4.3 miles 9.0 acres 0.14%	6.0 miles 11.2 acres 0.17%
	Non-motorized Open	0.4 mile 0.4 acres 0.01%	0.2 mile 0.1 acres <0.01%	0.4 mile 0.4 acres 0.01%	0.3 mile 0.3 acres <0.01%
	Closed/Reclaimed or Open to Admin Use	4.2 miles 5.6 acres 0.09%	1.8 miles 2.5 acres 0.04%	5.2 miles 6.9 acres 0.11%	3.5 miles 4.8 acres 0.07%

Table 51: Miles/Acres of Routes and Percentage of Total Habitat Available in Open vs. Closed Status by Alternative					
Habitat Type	**Route Status**	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Grassland	Motorized Open	140.9 miles 223.8 acres 0.37%	249.0 miles 370.3 acres 0.62%	103.1 miles 173.0 acres 0.29%	178.9 miles 276.3 acres 0.46%
	Non-motorized Open	16.9 miles 19.3 acres 0.03%	5.1 miles 1.9 acres <0.01%	18.0 miles 21.5 acres 0.04%	14.3 miles 14.9 acres 0.02%
	Closed/Reclaimed or Open to Admin Use	109.3 miles 146.1 acres 0.24%	13.1 miles 17.0 acres 0.03%	146.1 miles 194.7 acres 0.32%	74.0 miles 98.0 acres 0.16%
High-Elevation Riparian	Motorized Open	0.0	0.0	0.0	0.0
	Non-motorized Open	0.1 mile <0.1 acres	0.1 mile <0.1 acres	0.1 mile <0.1 acres	0.1 mile <0.1 acres
	Closed/Reclaimed or Open to Admin Use	0.0	0.0	0.0	0.0
Low-Elevation Riparian	Motorized Open	4.1 miles 7.6 acres 0.27%	6.7 miles 11.1 acres 0.40%	3.4 miles 6.6 acres 0.24%	4.7 miles 8.4 acres 0.30%
	Non-motorized Open	0.5 mile 0.3 acres 0.01%	0.6 mile 0.2 acres 0.01%	0.5 mile 0.3 acres 0.01%	0.6 mile 0.4 acres 0.01%
	Closed/Reclaimed or Open to Admin Use	8.4 miles 11.6 acres 0.42%	5.6 miles 8.2 acres 0.29%	9.1 miles 12.6 acres 0.45%	7.7 miles 10.6 acres 0.38%
Mixed Conifer	Motorized Open	0.1 mile 0.2 acres 0.09%	0.3 mile 0.4 acres 0.18%	0.1 mile 0.2 acres 0.09%	0.1 mile 0.2 acres 0.09%
	Non-motorized Open	<0.1 mile <0.1 acres <0.01%	<0.1 mile <0.1 acres <0.01%	<0.1 mile <0.1 acres <0.01%	0.1 mile 0.1 acres 0.05%
	Closed/Reclaimed or Open to Admin Use	0.3 mile 0.3 acres 0.14%	0.1 mile 0.1 acres 0.05%	0.3 mile 0.3 acres 0.14%	0.2 mile 0.2 acres 0.09%
Mountain Shrub	Motorized Open	139.8 miles 233.7 acres 0.40%	234.5 miles 361.4 acres 0.61%	111.7 miles 195.9 acres 0.33%	169.0 miles 273.2 acres 0.46%
	Non-motorized Open	11.7 miles 11.8 acres 0.02%	4.8 miles 1.7 acres <0.01%	8.9 miles 9.1 acres 0.02%	11.8 miles 12.0 acres 0.02%
	Closed/Reclaimed or Open to Admin Use	94.3 miles 125.8 acres 0.21%	6.5 miles 8.2 acres 0.01%	125.0 miles 166.3 acres 0.28%	64.9 miles 86.1 acres 0.15%

Table 51: Miles/Acres of Routes and Percentage of Total Habitat Available in Open vs. Closed Status by Alternative

Habitat Type	Route Status	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Piñon Juniper Woodland	Motorized Open	57.7 miles 94.8 acres 0.14%	109.6 miles 162.2 acres 0.24%	44.4 miles 77.5 acres 0.12%	73.6 miles 114.9 acres 0.17%
	Non-motorized Open	20.3 miles 16.1 acres 0.02%	11.5 miles 4.7 acres 0.01%	12.0 miles 7.2 acres 0.01%	18.1 miles 13.3 acres 0.02%
	Closed/Reclaimed or Open to Admin Use	47.6 miles 61.6 acres 0.09%	4.6 miles 5.8 acres 0.01%	69.3 miles 87.9 acres 0.13%	34.0 miles 44.5 acres 0.07%
Ponderosa Pine Forest	Motorized Open	23.9 miles 36.3 acres 0.13%	44.4 miles 62.9 acres 0.23%	17.7 miles 27.8 acres 0.10%	27.0 miles 40.3 acres 0.15%
	Non-motorized Open	8.0 miles 6.8 acres 0.03%	3.8 miles 1.4 acres 0.01%	6.0 miles 6.0 acres 0.02%	6.2 miles 4.6 acres 0.02%
	Closed/Reclaimed or Open to Admin Use	22.7 miles 29.1 acres 0.11%	6.4 miles 7.9 acres 0.03%	30.9 miles 38.4 acres 0.14%	21.4 miles 27.3 acres 0.10%
Residential	Motorized Open	0.0	0.0	0.0	0.0
	Non-motorized Open	0.0	0.0	0.0	0.0
	Closed/Reclaimed or Open to Admin Use	0.0	0.0	0.0	0.0
Sagebrush Shrubland	Motorized Open	28.3mi 49.2ac 0.69%	44.5mi 70.2ac 0.98%	22.1mi 40.8ac 0.57%	34.6mi 57.2ac 0.80%
	Non-motorized Open	1.3mi 1.1ac 0.02%	0.6mi 0.2ac <0.01%	1.3mi 1.1ac 0.02%	0.6mi 0.3ac <0.01%
	Closed/Reclaimed or Open to Admin Use	16.9mi 21.8ac 0.31%	1.4mi 1.7ac 0.02%	23.1mi 30.2ac 0.42%	11.3mi 14.6ac 0.20%
Semi-desert Shrubland	Motorized Open	468.7mi 887.9ac 0.34%	806.2mi 1364.3ac 0.53%	361.2mi 733.6ac 0.28%	598.3mi 1069.6ac 0.41%
	Non-motorized Open	23.5mi 29.3ac 0.01%	5.1mi 3.3ac <0.01%	13.5mi 16.6ac 0.01%	26.2mi 33.4ac 0.01%
	Closed/Reclaimed or Open to Admin Use	363.1mi 513.3ac 0.20%	44.0mi 62.8ac 0.02%	480.6mi 680.3ac 0.26%	230.8mi 327.5ac 0.13%
Spruce-Fir Forest	Motorized Open	7.4mi 10.3ac 0.08%	11.6mi 15.3ac 0.11%	5.0mi 7.3ac 0.05%	8.2mi 11.1ac 0.08%
	Non-motorized Open	3.0mi 1.9ac 0.01%	1.8mi 0.7ac 0.01%	2.3mi 1.6ac 0.01%	2.5mi 1.5ac 0.01%
	Closed/Reclaimed or Open to Admin Use	4.8mi 5.9ac 0.04%	1.8mi 2.2ac 0.02%	7.9mi 9.2ac 0.07%	4.3mi 5.5ac 0.04%

Table 51: Miles/Acres of Routes and Percentage of Total Habitat Available in Open vs. Closed Status by Alternative					
Habitat Type	**Route Status**	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Wetlands	Motorized Open	3.6mi 6.9ac 0.18%	6.9mi 11.4ac 0.30%	2.8mi 5.8ac 0.15%	4.5mi 8.1ac 0.21%
	Non-motorized Open	0.1mi 0.1ac <0.01%	0.2mi 0.1ac <0.01%	0.3mi 0.3ac 0.01%	0.5mi 0.5ac 0.01%
	Closed/Reclaimed or Open to Admin Use	10.0mi 14.1ac 0.37%	6.6mi 9.5ac 0.25%	10.6mi 15.0ac 0.39%	8.8mi 12.4ac 0.33%
***Using the USFWS Wetlands and Deepwater Habitats Classification/National Wetlands Inventory Mapping.*					

The difference between the action alternatives appears minor because the project addresses only 1,679 miles (21%) of the total 7,892 miles in the analysis area. There are differences between the existing condition (Current Use (No Action) Alternative A) and the action alternatives that have specific positive implications regarding agency obligations to Federally listed and state sensitive species. For example, the Proposed Action Alternative C provides travel access while increasing core area sizes. The Alamosa River Subunit went from an average core area size of 401 to 736 acres, the Lower Saguache subunit from an average of 389 to 738 acres, and the McIntyre/Simpson from an average of 148 to 465 acres. Core habitats within ACECs improve, with the Mogotes ACEC increasing from an average of 523 to 1,240 acres, RaJadero ACEC from an average of 152 to 542 acres, San Luis Hills ACEC from an average of 590 to 1,062 acres, and San Luis Hills WSA from an average of 4,782 to 9,999 acres. One of the more dramatic relative increases is Elephant Rocks ACEC with a 10 fold increase from an average of 5.9 to 54 acres.

The assumptions were that motorized and non-motorized travel has impacts on species, that a loss of habitat can be quantified by converting route mileage to acres of habitat, and that routes designated as "administrative use only" will have similar effects as closed routes since travel occurs only on an occasional basis rather than routinely. All closed and administrative use only routes (limited) are depicted as a plus sign to signify habitat gained through these closures or minimal use. The miles and acres of routes designated as county, private, or state would remain unchanged. This is due to the fact that they are not under the jurisdiction of the BLM and therefore are not subject to the planning decisions in this document (including route designation decisions).

The seasonal closure of some routes during the winter (critical winter wildlife habitat) (i.e., limited to seasonal motorized use) and/or the conversion of other routes from open (including motorized use) to limited (closed to motorized uses, but open to non-motorized uses) should reduce the degradation of soils, vegetation, and other habitat attributes. Disturbance to roosting, burrowing, denning, and wintering species will need to be monitored carefully. The likelihood of these impacts is dependent upon a number of factors (e.g., location of route, type, and season of use, the proximity and susceptibility sensitive species, etc.) "Take" of an individual remains unlikely unless there is a direct impact between an animal and a vehicle. Winter closures should

have a positive influence on any species or their habitat even if the area is occupied during the winter season.

Affected Environment

The affected environment for T&E and BLM state sensitive species is described in detail in the "Wildlife - Terrestrial" section, page 95. It is important to note that Federally listed and sensitive species may be more susceptible to impacts associated with the trends in human population growth and development. Recovery and protection of Federally-listed and sensitive species and their habitats is complicated by the patchwork ownership throughout the project area, which is generally a checker board of public and private lands. Public lands are interspersed with private property and create a ring around the majority of private lands causing a buffering affect between the private lands and the RGNF. Historically, private ranches on the private lands provided a level of core, low-traffic wildlife habitat.

The trends include the sale and development of private ranches that formerly provided habitat security. This results in the fragmentation of remaining habitats and the displacement of wildlife species from areas that previously supported them. The development and use patterns on private land highlight the importance of habitat security on public lands. Public lands are increasingly important for providing undisturbed core habitat.

The core habitat analysis for T&E and sensitive species is displayed in Table 51, above. Based on the buffering criteria described above (see Tables 48 and 49), about 58.8% of the planning area is impacted by routes and motorized vehicles because of direct and indirect disturbances while only 41.2% of the area provides undisturbed core habitat (i.e., seclusion areas that are not impacted by routes or motor vehicles). The network of routes in the Current Use (No Action) Alternative A generally prohibits the formation of many large or very large core areas, with 69 core areas greater than 1,000 acres and only nine core areas greater than 4,000 acres. The only large blocks of core habitat (greater than 6,000 acres) left are those that occur on restricted public lands such as the San Luis Hills WSA, San Luis Hills ACEC, and Alamosa River Subunits. The BLM seeks to ensure that these areas remain viable as suitable habitat in compliance with Public Land Health Standard 4. In the action alternatives, the core areas greater than 1,000 acres are increased approximately 7% to 10% while core areas greater than 4,000 acres are doubled or nearly doubled in number (see Table 50).

Buffered routes designated as closed or limited user (excluding "limited user" with primary private property routes) are considered closed and eliminated from analysis.

Environmental Consequences

The general direct, indirect, and cumulative effects of motorized and non-motorized routes on all wildlife species groups is described in detail in the "Wildlife - Terrestrial" section (pages 94-136). The conservation concern for Federally listed and sensitive species, for potential impacts is heightened due to their status.

Threatened, Endangered, and Candidate Species

Table 47, above, displays the status of Federally threatened, endangered, and candidate species.

Maps of T&E habitat sites are not provided due to the sensitive nature of the information.

Effects Analysis

There will be no effect on the Uncompahgre fritillary butterfly because the species does not occur or have habitat present. This species will not be evaluated further.

Current Use (No Action) Alternative

Cross-Country Travel: Motorized travel in the Current Use (No Action) Alternative A is open to all vehicle types in Area #1. This alternative would continue to allow unrestricted cross-country travel by motorized vehicles in addition to the high amount of existing motorized routes. This could potentially occur in habitat areas for T&E or sensitive species and result in a "take" of an individual due to disturbances and/or harassment. Unrestricted cross-country travel is expected to have negative effects on nearly all habitat types and wildlife species, but may be particularly detrimental to species that reproduce on or near the ground or in areas frequented by recreationists (i.e., riparian zones). Unrestricted cross-country travel is particularly damaging to habitat types such as wetlands, brittle shrub community components, and low-elevation riparian, where vegetation is extremely sensitive to damage by motor vehicles.

The 300 foot policy does not apply under this alternative.

The exception is in ACECs and WSAs (Areas #2 and #4 through #10), where motorized travel is limited to existing routes unless they are posted closed.

Effects Common to All Action Alternatives

Cross-Country Travel: In all action alternatives, cross-country motorized travel is closed to all areas unless stated otherwise. Critical winter range areas as determined for the routes in this analysis will be closed or limited from January 1 through April 30 on an annual basis. This may provide additional security habitat for species such as bald eagles that may opportunistically forage on carrion.

The 300 foot policy rule will differentially affect individual species depending on where the dispersed recreation occurs, how often it occurs, duration of occurrence, and tolerance of the species to the disturbance. The level of disturbance may cause individual animals to leave the immediate area or abandon nests/ burrows/ dens/ perches. Route density is greater under the Maximum Use Alternative D and effects are anticipated to be greater to wildlife under this alternative because dispersed recreation is more likely to occur. Effects are expected to be less under the Proposed Action Alternative C and even more reduced under the Minimum Access Alternative B because route densities are decreased and dispersed recreation is more "controlled" and limited to fewer areas effecting less habitat. Under the Minimum Access Alternative, the chances that dispersed recreation will disturb a threatened, endangered, candidate, federally proposed, or species of concern animal is minimal because there are fewer routes and less access to sensitive environments where dispersed recreation may occur.

Areas of Critical Environmental Concern (ACECs) and Wilderness Study Area (WSA): Large areas of undisturbed habitat will remain undisturbed by motorized routes in the ACECs and WSA in all action alternatives.

Analysis of Species by Alternatives

1) Bald Eagle

Affected Environment: The bald eagle population in Colorado has gradually increased since listing. Up to 1,000 wintering bald eagles were documented in Colorado (Gross, 1998) in 1995. Breeding and wintering bald eagles are known to use the San Luis Valley floor. Bald eagles have been documented nesting on private lands at high elevations and winter roosting on public lands. There are nine standardized routes and four aerial survey routes for bald eagle midwinter counts. Portions of RGNF are included in the aerial surveys of the Conejos River and the Rio Grande. These data have been collected since 1980 documenting winter roosts on the valley floor.

There are large expanses of bald eagle habitat along the Rio Grande and Conejos River and their associated stream systems. There are extensive natural and managed wetland areas on the Valley floor that support wintering and breeding bald eagles. These areas are used for livestock, agricultural purposes, for development and maintenance of wildlife sanctuaries, refuges managed by private individuals, non-profit conservation organizations, and state and Federal agencies. There are ongoing cooperative efforts between private landowners, non-profit organizations, and municipal, county, state, and Federal agencies to maintain and improve wetlands.

Roosting sites for wintering bald eagles occur throughout the planning area, but are most significant along the main rivers, including the Rio Grande, the Conejos River, Blanca Wetlands, and in the McIntire/Simpson property. Roosting and breeding requires a readily available food source of moderate to large fish, large diameter trees, and minimal disturbance from humans. The presence and use of routes near eagle roosting areas can increase disturbance to eagles during the critical winter period when they are feeding and storing reserves for breeding and migrating periods. Waterfowl hunting near roosting areas creates disturbance to roosting and foraging birds and may alter behavior. Bald eagles are found from November to April along rivers, lakes, reservoirs, and stream corridors with open branched trees such as cottonwoods, pine, and spruce-fir stands.

Note: this information is from the 1999 proposed rule to delist (64 FR 36454) unless otherwise cited.

Bald eagles may forage on some of the stream systems that project up from private lands to public lands and onto the RGNF or on areas that have large, open bodies of water. Bald eagles may use prairies if adequate food (carrion) is available, but are generally considered a bird of aquatic ecosystems. Carrion and waterfowl on winter range have been documented as important food sources for eagles during the winter months.

This species was listed as endangered or threatened, depending on the state, in the contiguous United States in 1978. It was down listed to threatened status in 1995 in states where it had been listed as endangered. The USFWS proposed delisting in 1999 as most of the recovery goals had

been met and the population continues to increase. Colorado is part of the Northern States Recovery Region were delisting goals were met in 1991.

Nesting and wintering habitats are critical to the continued survival of bald eagles, but do not appear to be limiting, given the population recovery. Bald eagle habitat on Federal lands remains protected and with the knowledge of habitat management gained through the recovery process, Federal actions are not expected to result in an unacceptable loss of habitat or to affect the population's stability. Recommendations for management and protection of bald eagles continue to be made in accordance with all applicable environmental laws.

Human disturbance is a continuing threat, which may increase as both numbers of bald eagles increases and human development expands. Nesting can fail if disturbance occurs frequently. Management practices have been successfully modified to reduce human disturbances. Nesting has been documented near the Rio Grande Reservoir on private land in the San Luis Valley and more eagles are expected to start nesting as far south as Southern Colorado.

All action alternatives under this TMP allow for a net reduction in miles of routes, and potential route construction is expected to be offset by route closure and/or obliteration. The construction, reconstruction, and maintenance of routes along streams, lakes, and reservoirs may impact fish habitat through increased sedimentation, which could limit foraging opportunities. Development and maintenance of routes includes removal of hazard trees, some of which may be used by bald eagles for nesting, winter roosting and/or foraging. The net reduction in route miles in the action alternatives is expected to off-set any potential impacts to fisheries and/or important habitat components. The restrictions regarding unmanaged cross-country travel is expected to provide important direct and indirect benefits to bald eagles because of reduced soil impacts and greater habitat security.

Current Use (No Action) Alternative A (Direct, Indirect, Cumulative Effects): Potential effects to bald eagles are likely to be substantial to all subunits within Area #1 of the RMP under the Current Use (No Action) Alternative A. Travel is unrestricted in Area #1 (the majority of the land base) including riparian areas, cottonwood galleries, and woodlands surrounding reservoirs, ponds, and lakes which provide roosting and nesting habitat. The unrestricted travel associated with the Current Use (No Action) Alternative A has the potential to impact a large bald eagle roost on the McIntire property in Conejos County due to increased waterfowl hunting. This roost is the 3rd largest in Colorado, and the waterfowl hunting pressure has the potential to disrupt roosting behavior and influence the prey species upon which the birds depend. Fewer birds have occupied the area in recent years as a result. The Current Use (No Action) Alternative A provides little relief from this disturbance and could lead to increased disturbances in the future because of unrestricted cross-country travel that could lead to the establishment of additional routes.

Approximately 174,054 acres of core habitat is available for bald eagles in the Current Use (No Action) Alternative A. This represents about 57% of the bald eagle habitat. Motorized and non-motorized routes influence about 55.2% and 17%, respectively, of the available habitat. The amount of core habitat would remain unchanged in the Current Use (No Action) Alternative A but could be negatively influenced or made less effective by unrestricted cross-country vehicle

travel. Direct, indirect, and cumulative effects are much greater than they are under the action alternatives (see Table 52, below).

Action Alternatives: The Minimum Access Alternative B is expected to provide the highest benefit to bald eagles because it best addresses the potential impacts of routes and motorized travel. Approximately 201,716 acres of core habitat would be retained in the Minimum Access Alternative B while the Maximum Access Alternative D and Proposed Action Alternative C would retain about 184,466 and 193,182 acres, respectively (see Table 52). These differences represent about 66.1%, 60.4%, and 63.3% of the available bald eagle habitat, as compared to 57% in the Current Use (No Action) Alternative A. The highest acreage of core habitat is available in the Minimum Access Alternative B, lowest in the Maximum Access Alternative D, with the Proposed Action Alternative C median between the two. The greatest benefit is expected to be relative to the highest amount of core habitat available due to route closures. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C.

Table 52: Core Habitat for Bald Eagle

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core Areas/Closed Routes, public land (acres)	193,182 acres 63.27%	174,054 acres 57.01%	201,716 acres 66.07%	184,466 acres 60.42%
Non-motorized Open Routes (Buffer area)	1,903 acres 0.62%	518 acres 0.17%	1,256 acres 0.41%	1,839 acres 0.60%
Motorized Open Routes (Buffer area)	137,794 acres 45.13%	168,607 acres 55.22%	125,969 acres 41.26%	149,775 acres 49.05%
Administrative Use (Buffer area)	15,353 acres 5.03%	3,076 acres 1.01%	18,443 acres 6.04%	8,548 acres 2.80%
Total land base of public lands	305,321 acres 59.00%	305,321 acres 59.00%	305,321 acres 59.00%	305,321 acres 59.00%

Effects Determination: It is determined that the Current Use (No Action) Alternative A "May Affect, and is Likely to Adversely Affect" bald eagles that occur or have habitat present within the project area. All action alternatives (Alternative B, C, and D) including the Proposed Action Alternative C "May Affect, but are Not Likely to Adversely Affect" bald eagles within or near the project area. The rationale for this conclusion is as follows:

- The unrestricted cross-country travel associated with the Current Use (No Action) Alternative A has a high potential to harass, disturb or otherwise "take" individual bald eagles. It has the highest potential to lead to additional future impacts due to unrestricted cross-country motorized travel.

- All action alternatives provide different degrees of secure core habitat for bald eagles. All action alternatives restrict cross-country vehicle travel and reduce the risk of current and future harassment to bald eagles that could be associated with route proliferation. Individual disturbances cannot be completely discounted but can be managed to reduce impacts below the level of take if and when they occur.

2) Black-footed Ferret

Affected Environment: Black-footed ferrets may have occurred in the planning area historically but have been extirpated for several decades. Ferrets have co-evolved with prairie dogs and closely overlap the range and habitat of this species. Ferrets use prairie dog burrows in grasslands and semi-desert and montane shrublands to rear their young and provide food supplies. Ferrets were likely extirpated from southern Colorado due to canine distemper and loss of prey (prairie dogs) caused by epizootics of plague, recreational shooting, and poisoning programs.

Current Use (No Action) Alternative A: The Current Use (No Action) Alternative A does not have potential effects to black-footed ferrets because they are extirpated. Potential impacts are evaluated in relationship to habitat conditions for their principle prey species - Gunnison's prairie dog. This evaluation will provide a relative assessment of habitat conditions for black-footed ferrets that may be used in future reintroduction programs.

Approximately 42,268 acres of core habitat is available for Gunnison's prairie dog in the Current Use (No Action) Alternative A. This represents about 54.4% of the habitat. Motorized and non-motorized routes influence about 55.9% and 0.1%, respectively, of the available habitat. The amount of core habitat would remain unchanged or decrease in the Current Use (No Action) Alternative A due to route proliferation associated with projected increases in motorized recreation. Existing core habitat is likely to be negatively influenced or made less effective by unrestricted cross-country vehicle travel. Prairie dogs would be more susceptible to "recreational shooting" pressures, which may reduce or eliminate colonies and reintroduction potential for black-footed ferrets. Direct, indirect, and cumulative effects are much greater for prairie dogs and future potential ferret habitat under the Current Use (No Action) Alternative A than they are under the action alternatives (See Table 54, below).

Action Alternatives (Direct, Indirect, Cumulative Effects): The Minimum Access Alternative B is expected to provide the highest benefit to Gunnison's prairie dogs because it is best addresses the potential impacts of routes and motorized travel. The Minimum Access Alternative B is expected to provide the greatest benefit to future potential black-footed ferret habitat. In the Minimum Access Alternative B, approximately 54,862 acres of core habitat would be retained while the Maximum Access Alternative D and Proposed Action Alternative C would retain about 50,013 and 53,011 acres, respectively. These differences represent about 64.5%, 58.8%, and 62.3% of the available habitat, as compared to 54.4% in the Current Use (No Action) Alternative A. When compared to the core habitat acreage in the Current Use (No Action) Alternative A under current conditions, the core habitat protected under alternative B is approximately 19% greater, alternative C protects approximately 15% more and alternative D protects approximately 8% more than the Current Use (No Action) Alternative A (i.e., under present conditions, not projected conditions expected upon full implementation for the duration of the plan. The projection of core habitat under the Action Alternatives is considerable more than under the Current Use (No Action) Alternative A. This is due to the loss of habitat with Alternative A over the life of the plan. The highest acreage of core habitat for Gunnison's prairie dogs is available in the Minimum Access Alternative B, lowest in the Maximum Access Alternative D, with the Proposed Action Alternative C median between the two. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access

Alternative D, and a moderate amount from the Proposed Action Alternative C (see Table 53, below).

Table 53: Core Habitat Black-footed Ferret and Gunnison Prairie Dog (acres/ percentage)				
Designation	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Maximum Access Alternative D**	**Minimum Access Alternative B**
Core Areas/Closed Routes, Public Land (acres)	53,011 acres 62.33%	46,268 acres 54.40%	54,862 acres 64.51%	50,013 acres 58.80%
Non-motorized Open Routes (Buffer area)	118 acres 0.14%	45 acres 0.05%	145 acres 0.17%	188 acres 0.22%
Motorized Open Routes (Buffer area)	39,330 acres 46.24%	47,501 acres 55.85%	36,934 acres 43.43%	42,794 acres 50.32%
Administrative Use (Buffer area)	4,564 acres 5.37%	33 acres 0.04%	3,488 acres 4.10%	2,045 acres 2.40%
Total land base of Public Lands	85,050 acres 16.44%	85,050 acres 16.44%	85,050 acres 16.44%	85,050 acres 16.44%

Effects Determination: It is determined that the Current Use (No Action) Alternative A will have "No Effect" on black-footed ferrets. All action alternatives (Alternative B, C, and D) including the Proposed Action Alternative C will have "No Effect". The rationale for this conclusion is as follows:

- The black-footed ferret is extirpated and there are no current plans to reintroduce this species to the San Luis Valley. Potential effects on this species will not occur even when only assessing potential future habitat.

3) Canada Lynx

Note: this information is from the Lynx Conservation Assessment Strategy (Ruediger et al., 2000) unless otherwise cited.

Affected Environment: Lynx may have been relatively common in Colorado, at least near or prior to the turn of the century. Recorded lynx occurrences are distributed throughout mountainous areas of Colorado.

Canada lynx are found at higher elevation-early successional and late mixed conifer forests. Aspen/willow/shrub-steppe are used for foraging. Late-successional forests are used for denning, as well as winter foraging. Lynx are typically associated with large tracts of higher elevation boreal or coniferous forest that is often interspersed with rock outcrops, bogs, and thickets. Lynx habitat in Colorado is likely found within the subalpine and upper montane forest zones, typically between 8,000 and 12,000 feet.

Lynx habitat in the Southern Rockies is naturally fragmented, a function of elevation, aspect, and local moisture regimes because of latitude. Drier south and west facing slopes may break up the continuity of cooler, mesic high-elevation forests that are believed to constitute primary vegetation contributing to lynx habitat. Lynx habitat should be thought of in terms of a habitat mosaic within these forest landscapes, rather than as simple vegetation types.

Spruce-fir, lodgepole pine, white fir, aspen, and mesic Douglas fir may provide foraging and/or denning habitat. Potentially important are the high elevation sagebrush and mountain shrub communities found adjacent to or intermixed with forested communities, affording potentially important alternative prey resources. Riparian and wetland shrub communities (for example, willow, alder, serviceberry) found in valleys, drainages, wet meadows, and moist timberline locations may support important prey resources.

Lynx transplanted to Colorado in 1999 through 2006 are most often found in the spruce-fir cover type, with frequent use of riparian and valley wetland shrub habitats of the upper montane and subalpine zones, especially in the late summer-fall. The ecotones formed by the integration of these various vegetation communities may offer some of the richest foraging opportunities. Foraging habitat in the Southern Rocky Mountains Geographic Area (SRMGA) includes all of the vegetation community types discussed above.

Fire exclusion has led to the maturation of many lodgepole pine forests into highly stocked, even-aged stands that do not now provide the dense ground and snow-level cover and forage necessary to support higher densities of snowshoe hare. Mature and late-successional spruce-fir forests provide diversified structure characteristics and are, far superior to mature lodgepole pine because of their structure. Mature and late successional spruce-fir forests are excellent producers of red squirrels, an important alternate prey species.

Conifer-aspen forests, particularly those with dense regeneration or with an extensive shrub and woody debris understory component, may be important for snowshoe hares and other prey species. While extensive stands of pure aspen may not provide quality hare habitat due to deficiencies in winter habitat characteristics, when intermixed with spruce-fir or young lodgepole pine stands, aspen (especially younger stands) may substantially contribute to prey productivity. Regenerating burns are often quite productive because of the mixed coniferous/deciduous species composition, multiple age classes, shrub layer, dense herbaceous layer, and extensive downed woody debris. These conditions provide excellent habitat for snowshoe hare and other prey species.

Functional denning habitat must be in or adjacent to large areas of quality foraging habitat. Because lynx may move their kittens frequently in the first few months, denning habitat should provide multiple quality den site options. Lynx females seem to select dense, mature forest habitats that contain large woody debris, such as fallen trees or upturned stumps, to provide security and thermal cover for kittens. Denning habitat is likely to occur most often in late-successional spruce-fir forest with a substantial amount of large diameter woody debris on the forest floor, frequently found on north to northeast exposures. The common component of natal den sites appears to be large woody debris, either downed logs or root wads.

Travel cover allows for movement of lynx within their home ranges and provides access to denning sites and foraging habitats. Suitable travel cover consists of coniferous or deciduous vegetation four feet taller than the average snowfall with a closed canopy that is adjacent to foraging habitat. Most successional stages serve as travel cover, provided they offer vegetative cover in sufficient quantity and arrangement.

DOW in 1999 initiated a lynx recovery program intended to augment any existing populations in the Southern Rockies with transplants from Canada and Alaska to re-establish a self-sustaining breeding population. The augmentation program resulted in a total of 218 lynx being transplanted into the San Juan Mountains during 1999-2006.

The majority of habitat use by reintroduced lynx is occurring in the spruce-fir cover type. The second and third most-preferred habitats occur in spruce-fir/aspen mixtures and riparian habitat cover types, respectively, with the latter type being used seasonally from July through November.

The Lynx Conservation Assessment and Strategy (LCAS) developed conservation measures designed to minimize potential risk factors that may influence lynx or lynx habitat. Identified risk factors include:

- Factors affecting lynx productivity (timber management, wildland fire management, recreation, forest/backcountry roads and trails, livestock grazing, and other human developments).

- Factors affecting lynx mortality (trapping, predator control, hit by automobiles, incidental or illegal shooting, and competition and predation as influenced by human activities).

- Factors affecting lynx movement (highways, railroads, utility corridors, land ownership patterns, and ski areas and large resorts).

- Other large-scale risk factors (fragmentation and degradation of lynx refugia, lynx movement and dispersal across shrub-steppe habitats, and habitat degradation by non-native invasive plant species).

The primary risk factors associated with this analysis involve the influence that routes might have on Canada lynx. Routes may provide access to lynx habitat by competitors, provide barriers to movement, and contribute to avoidance of otherwise suitable habitat due to human uses. Recreational uses or activities that create compacted snow conditions may reduce the competitive advantage that lynx have in deep snow environments. Snowmobiling, cross-country skiing, and snowshoeing on and off established routes in lynx habitat compact snow conditions, especially in early winter, where lynx competitors gain an advantage to scarce prey resources.

Current Use (No Action) Alternative A: Lynx habitat is not prevalent and comprises only 1.8% of the public lands. The Current Use (No Action) Alternative A provides a high route mileage that has the potential to contribute to accidental road kills and increased disturbances. The route mileage and unrestricted cross-country travel has a high risk of contributing to snow compaction that provides access to other predators, such as coyotes.

Approximately 5,915 acres of core habitat is suitable and available for lynx habitat in the Current Use (No Action) Alternative A. This represents about 63.2% of the suitable lynx habitat, with 84 acres (0.9%) of the potential habitat being unsuitable due to existing conditions. Motorized and non-motorized routes influence about 44.8% and 0.94%, respectively, of the available habitat. The amount of core habitat would remain initially unchanged in the Current Use (No Action)

Alternative A, but over the life of the plan is likely to be negatively influenced or made less effective by unrestricted cross-country vehicle travel. The amount of core habitat under this alternative would be expected to decrease. The potential for direct, indirect, and cumulative effects on lynx habitat are greater under this alternative than they are under the action alternatives (See Table 54, below).

Action Alternatives (Direct, Indirect, Cumulative Effects): The Minimum Access Alternative B is expected to provide the highest benefit to lynx because it best addresses the potential impacts of routes and motorized travel. In the Minimum Access Alternative B, approximately 6,593 acres of suitable core habitat would be retained while the Proposed Action Alternative C and Maximum Access Alternative D would retain about 6,338 and 6,256 acres, respectively. These differences represent about 70.5%, 66.9%, and 67.8% of the suitable lynx habitat as compared to 63.2% in the Current Use (No Action) Alternative A. The core habitat protected under the Minimum Access Alternative B is approximately 11% greater, the Proposed Action Alternative C protects approximately 7% more, and the Maximum Access Alternative D protects approximately 6% more than the Current Use (No Action) Alternative A (i.e., under present conditions, not projected conditions expected upon full implementation for the duration of the plan). The projection of core habitat under the action alternatives is considerable more than under the Current Use (No Action) Alternative A. This is due to the loss of habitat with the Current Use (No Action) Alternative A over the life of the plan. The amount of unsuitable habitat remains at 84 acres in the Proposed Action Alternative C and the Maximum Access Alternative D, but increases slightly to 102 acres in the Minimum Access Alternative B. The highest acreage of core habitat is available in the Minimum Access Alternative B, lowest in the Maximum Access Alternative D, with the Proposed Action Alternative C median between the two. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C (See Table 54, below).

Effects Determination: It is determined that the Current Use (No Action) Alternative A "May Affect, but is Not Likely to Adversely Affect" Canada lynx that occur or have habitat present. All action alternatives (Alternative B, C, and D) including the Proposed Action Alternative C are determined to have a "Beneficial Effect" on the Canada lynx. The rationale for this conclusion is as follows:

- The unrestricted cross-country summer and winter motorized travel associated with the Current Use (No Action) Alternative A has a potential to negatively affect individual Canada lynx and/or their habitats and is inconsistent with the LCAS. The action alternatives will prohibit both summer and winter cross-country travel in lynx habitat and prohibit additional snow compaction. Remaining summer road mileage is considered too minor to have a measurable effect on lynx habitat.

Table 54: Core Habitat Available Canada Lynx (acres/percentage)

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core Areas/Closed Routes, public land (acres)	Denning 1,674 acres 17.90%	Denning 1,605 acres 17.16%	Denning 1,750 acres 18.71%	Denning 1,663 acres 17.78%

	Winter 2,086 acres 22.30% Other 2,578 acres 27.56% U 84 acres 0.90%	Winter 2,000 acres 21.38% Other 2,310 acres 24.70% U 84 acres 0.90%	Winter 2,177 acres 23.28% Other 2,666 acres 28.50% U 102 acres 1.09%	Winter 2,078 acres 22.22% Other 2,515 acres 26.89% U 84 acres 0.90%
Non-motorized Open Routes (Buffer area)	163 acres 1.74%	88 acres 0.94%	169 acres 1.81%	152 acres 1.63%
Motorized Open Routes (Buffer area)	3,427 acres 36.64%	4,185 acres 44.75%	3,069 acres 32.81%	3,548 acres 37.93%
Administrative Use (Buffer area)	122 acres 1.30%	52 acres 0.56%	106 acres 1.13%	60 acres 0.64%
Total land base of public lands	9,353 ac 1.81%	9,353 ac 1.81%	9,353 ac 1.81%	9,353 ac 1.81%
Percentage = % of total land base value (BLM State Office Lynx Mapping Coverage (note: this layer showed no polygons within area of extent) and RGNF Lynx Mapping Coverage).				

- All action alternatives provide different degrees of secure core habitat for Canada lynx. All action alternatives restrict cross-country vehicle travel and reduce the risk of negative impacts on habitat. Some discountable negative effects may still occur because of the route network proposed (these proposed route networks are based upon already existent routes) in each action alternative.

4) Mexican Spotted Owl

Affected Environment: Mexican spotted owls do not occur uniformly throughout their range, but rather in disjunct localities that correspond to isolated mountain systems and canyons. Spotted owls use a variety of habitats, but are typically associated with dense multi-canopied stands of mature mixed-conifer and ponderosa pine-gambel oak. Habitat use patterns vary throughout the range and owls may use a wider variety of forest conditions for foraging than used for nesting or roosting. All known Mexican spotted owl pairs in Colorado use canyon habitats for nesting.

Mexican spotted owls (i.e., spotted owls) have not been found in the San Luis Valley but suitable habitat is available in steep canyon habitat with ponderosa pine, Douglas fir, and piñon/juniper forest types.

Note: this information is from the Recovery Plan (USDI Fish and Wildlife Service 1995) and Facts about the Mexican Spotted Owl (USDA Forest Service 1993) unless otherwise cited.

Spotted owls nest and roost primarily in closed-canopy forests or rocky canyons. Forests used for roosting and nesting often contain mature or old-growth stands with complex structures characterized by multiple canopies, dense canopy cover, high tree basal area, an abundance of snags, and dead and down logs. Spotted owls will use canyon habitats that provide nesting sites in shallow caves and ledges. Canyons vary from having a high degree of forest structure to little or no tree cover present, but all have a common characteristic of steep to vertical rock walls that supplement or replace vegetated structural characteristics used in forested habitats.

Foraging habitat is enhanced by the presence of rock, grass, forbs, shrubs and/or hardwoods that may increase the variety and/or quantity of prey species. Foraging may occur in either stands of nesting and roosting habitat or in other stand types that may be single or multi-canopied, with more open canopy and more diverse species composition. High-use foraging areas contain greater numbers of large logs, higher canopy closure, greater densities, basal areas of trees and snags than random sites.

Nests consist of tree cavities, old stick built nests from other species, debris platforms and cliff ledges. Nests are located on ledges and large trees and ledges are used as roosts. Spotted owls have a high nest site affinity, breeding in the same area for several years. Spotted owls breed sporadically and do not nest every year.

The San Luis Valley public lands are located within the Southern Rocky Mountains – Colorado Recovery Unit (SRM-CO RU). Spotted owls are found primarily in canyons in this recovery unit and appear to occupy two disparate canyon habitat types. The first is sheer, slick-rock canyons containing widely scattered patches of mature Douglas fir in or near canyon bottoms or high on canyon walls in short, hanging canyons. The second consists of steep canyons containing exposed bedrock cliffs either close to the canyon floor or, more typically, several tiers of exposed rock at various heights on the canyon walls. Mature Douglas fir, white-fir, and ponderosa pine dominate canyon bottoms and north and east facing slopes. Ponderosa pine grows on the more xeric south and west facing slopes, with piñon/juniper growing on the mesa tops.

Critical habitat has been designated twice for the Mexican spotted owl, both times set aside by court order. Neither the first critical habitat designation in 1995, nor the second in 2001 included public lands in the San Luis Valley.

Eighteen historical records of spotted owls exist within the SRM-CO RU, most along the Colorado Front Range. Two additional potential observations, one each from the Rio Grande and San Juan National Forests, plus one from the Southern Ute Reservation were reported during 1989 surveys. None of these observations occur within the planning area and the one potential observation on the RGNF has recently been discounted.

The Mexican spotted owl was listed as endangered in 1993 primarily because of past and projected timber management activities and the threat of catastrophic fire.

Potential threats in order of severity for the SRM-CO RU are catastrophic fire, recreation, urbanization, timber harvest, and road construction. Less severe threats include land exchange, oil and gas leasing, mineral development, and grazing. Singly, these factors may have low impact, but high synergistic consequences.

The potential threats for the SRM-CO RU would be most applicable to the Colorado Front Range, where historic records and current distribution of spotted owls in this Recovery Unit (RU) are found. Types and levels of management activities on the San Luis Valley public lands would be more comparable to the Southern Rocky Mountains – New Mexico Recovery Unit (SRM-NM RU). Wildfire and timber harvest are the primary threats in the SRM-NM RU, with

lesser, localized effects from unregulated firewood collection, grazing (particularly in riparian areas), and recreational development.

Incidental encounters between spotted owls and recreationists are expected to be relatively insignificant due to the limited extent of potential habitat and the average use of areas other than potential spotted owl habitat. Dispersed recreation activities under outfitter and guide permits have the potential to concentrate and intensify recreational impacts due to increased area use, frequency, and duration by greater numbers of people at any given time. Use is of existing trails and recurrent campsites, where spotted owls, likely would be accustomed to these disturbance levels.

Current Use (No Action) Alternative A: Potential effects to Mexican spotted owls from any of the alternatives are unlikely because the species is not known to occur in the San Luis Valley. Given that there is some potential habitat present that has not been adequately surveyed it is assumed in this analysis that spotted owls could be present or become present. The unrestricted travel associated with the Current Use (No Action) Alternative A could represent the largest potential negative impact to the Mexican spotted owls and their habitat.

Approximately 62,101 acres of core habitat is available for Mexican spotted owls in the Current Use (No Action) Alternative A. This represents about 62% of the potential habitat. Motorized and non-motorized routes influence about 45.8% and 0.9%, respectively, of the available habitat. The amount of core habitat would remain unchanged in the Current Use (No Action) Alternative A, but could be negatively influenced or made less effective by unrestricted cross-country vehicle travel. Potential proliferation of routes could make the existing core habitat much less effective. Direct, indirect, and cumulative effects under the Current Use (No Action) Alternative A are much greater than they are under the action alternatives (see Table 55, below).

Action Alternatives (Direct, Indirect, Cumulative Effects): Potential effects to Mexican spotted owls from any of the alternatives are unlikely because the species is not known to occur in the San Luis Valley. The Minimum Access Alternative B provides the highest benefit to Mexican spotted owls because it best addresses the potential impacts of routes and motorized travel. In the Minimum Access Alternative B, approximately 70,956 acres of core habitat would be retained while the Maximum Access Alternative D and Proposed Action Alternative C would retain about 65,998 and 67,216 acres, respectively. These differences represent about 70.9%, 65.9%, and 67.1% of the potential habitat, as compared to 62% in the Current Use (No Action) Alternative A. When compared to the core habitat acreage in the Current Use (No Action) Alternative A under current conditions, the core habitat protected under the Minimum Access Alternative B is approximately 14% greater, the Proposed Action Alternative C protects approximately 8% more and the Maximum Access Alternative D protects approximately 6% more (i.e., under present conditions, not projected conditions expected upon full implementation for the duration of the plan). The projection of core habitat under the action alternatives is considerable more than under the Current Use (No Action) Alternative A. This is due to the loss of habitat with Alternative A over the life of the plan. For Mexican spotted owls, the highest acreage of core habitat is available in the Minimum Access Alternative B, lowest in the Maximum Access Alternative D, with the Proposed Action Alternative C median between the two. The greatest amount of benefit is expected from the Minimum Access Alternative B, the

least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C (see Table 55, below).

Table 55: Core Habitat Mexican Spotted Owl (acres / percentage)				
Designation	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Core Areas/Closed Routes, public land (acres)	67,216 acres 67.13%	62,101 acres 62.02%	70,956 acres 70.86%	65,998 acres 65.91%
Non-motorized Open Routes (Buffer area)	1,533 acres 1.53%	890 acres 0.89%	1,248 acres 1.25%	1,041 acres 1.04%
Motorized Open Routes (Buffer area)	38,171 acres 38.12%	45,845 acres 45.78%	33,673 acres 33.63%	39,884 acres 39.83%
Administrative Use (Buffer area)	1,599 acres 1.60%	292 acres 0.29%	1,916 acres 1.91%	1,028 acres 1.03%
Total land base of public lands	100,135 acres 19.35%	100,135 acres 19.35%	100,135 acres 19.35%	100,135 acres 19.35%
(Using Habitat Types- Cliff/Rock/Talus, Ponderosa Pine, Mixed Conifer, Piñon/Juniper).				

Effects Determination: It is determined that the Current Use (No Action) Alternative A "May Affect, but is Not Likely to Adversely Affect" the Mexican spotted owl or its potential habitat within the planning area. The Maximum Access Alternative D is determined to have the potential to "May Affect, but Not Likely to Adversely Affect" the Mexican spotted owl due to the high amount of open routes that dissect potential habitat. The Minimum Access Alternative B and the Proposed Action Alternative C are determined to have "No Effect" on potential habitat because of additional route closures. The rationale for this conclusion is as follows:

- The unrestricted cross-country travel associated with the Current Use (No Action) Alternative A has a high potential to negatively affect potential habitat. The effects are expected to be discountable and immeasurable because the minor amount of habitat involved is not expected to be associated with any adverse impacts.

- All action alternatives provide different degrees of secure core habitat for the Mexican spotted owl. All action alternatives restrict cross-country vehicle travel and reduce the risk of negative impacts on habitat. The Maximum Access Alternative D retains a high degree of open routes in potential habitat while the Minimum Access Alternative B and Proposed Action Alternative C reduce the routes to a level that reduces potential impacts.

5) Southwestern Willow Flycatcher

Affected Environment: Southwestern willow flycatchers inhabit willow thickets associated with water in the lower elevations. Habitat occurs within riparian areas along rivers, streams or other wetlands, where dense growths of willows or other shrub and medium sized trees are present, often with a scattered overstory of cottonwood. Flycatchers are documented to inhabit the McIntire/Simpson property complex, the Conejos River, La Garita Creek, sections of the Rio Grande, and Saguache Creek. The flycatcher's distribution follows that of its riparian habitat. Breeding flycatchers have been confirmed only on Alamosa National Wildlife Area and McIntire Springs property, and within the Rio Grande drainage.

Note: this information is from the Recovery Plan (USDI Fish and Wildlife Service, 2002) unless otherwise cited.

Southwestern willow flycatchers breed in substantially different types of riparian habitat across a large elevational and geographical area. Regardless of the plant species composition or height, occupied sites always have dense vegetation in the patch interior. This dense vegetation occurs within the first three to four meters (10-13 feet) above ground. Canopy cover is usually very high, typically 80% or greater. These dense patches are often interspersed with small openings, open water, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense. Nesting habitat patches will tend not to be very narrow, and slow-moving or still surface water and/or saturated soil will be present at or near breeding sites during wet or normal precipitation years. Patch sizes vary anywhere between less than one acre to over 100 acres. Occupied sites are typically located along slow-moving stream reaches; at river backwaters; in swampy abandoned channels and oxbows; marshes; and at the margins of impounded water (e.g., beaver ponds, inflows of streams into reservoirs). Where flycatchers occur along moving streams, those streams tend to be of relatively low gradient, i.e., slow-moving with few (or widely spaced) riffles or other cataracts.

The Southwestern willow flycatcher was listed as Federally endangered in 1995 due to extensive loss of habitat, brood parasitism, and lack of adequate protective regulations. Critical habitat was designated in 1997, but in 2001, the USFWS was instructed by the 10th Circuit Court of Appeals to issue a new critical habitat designation. The USFWS is in the process of re-proposing critical habitat and as part of the Recovery Plan, has defined recovery units and management units. The Rio Grande RU includes the San Luis Valley Management Unit, defined as the Rio Grande and tributaries within the San Luis Valley from Del Norte, Colorado to the Colorado/New Mexico State line, including Alamosa National Wildlife Refuge and the Conejos River from Fox Creek to the Rio Grande.

The primary cause of the flycatcher's decline is loss and modification of habitat. Its riparian nesting habitat tends to be uncommon, isolated, and widely dispersed. Historically, these habitats have always been dynamic and unstable in place and time, due to natural disturbance and regeneration events such as floods, fire, and drought. Industrial, agricultural, and urban developments associated with increasing human populations have modified, reduced, and destroyed by various mechanisms. Riparian ecosystems have declined from reductions in water flow, interruptions in natural hydrological events and cycles, physical modifications to streams, modification of native plant communities by invasion of exotic species, and direct removal of riparian vegetation.

Because riparian vegetation typically occurs in flood plain areas that are prone to periodic disturbance, suitable habitats will be ephemeral and their distribution dynamic in nature. Suitable habitat patches may become unsuitable through maturation or disturbance (though this may be only temporary and patches may cycle back into suitability). It is not realistic to assume that any given suitable habitat patch (occupied or unoccupied) will remain continually occupied and/or suitable over the long-term. Unoccupied suitable habitat will play a vital role in the recovery of the flycatcher, because it will provide suitable areas for breeding flycatchers to colonize as the population expands (numerically and geographically), and move to following loss or degradation of existing breeding sites.

Potential habitats that are not suitable will be essential for flycatcher recovery because they are the areas from which new suitable habitat develops as existing sites are lost or degraded. In a dynamic riparian system, most willow systems can be considered potential habitat. Potential habitat may progress into suitable habitat naturally or by implementing changes in management that affect willow growth and stature. Habitat management for recovery of the flycatcher must include developing and/or maintaining a matrix of riparian patches, some suitable and some potential, within a watershed so that sufficient suitable habitat will be available at any given time.

Routes, hiking trails, biking trails, utility corridors, off-road vehicle use outside of established ORV areas, and camping in undeveloped sites may lead to direct destruction of habitat, nests, eggs, and fledglings, and intentional or unintentional disturbance to birds and or nests. Offsetting measures include route utility corridors away from riparian habitat and conduct construction outside of the breeding season, ensure avoidance of direct disturbance though fencing or signing, and deterring people from camping in the riparian areas through fencing or signing, including use of the 300 feet rule. Riparian areas receive disproportionately high recreation use and impacts in the Southwest can be devastating where riparian habitat tends to be more linear, narrow, and dissimilar to adjacent habitats. Impacts are more significant where there is no buffer between habitats. Facilities, routes, human presence, and noise disturbance can result in fragmentation, loss of habitat, and displacement of wildlife.

Surveys conducted in 2002 found sufficient numbers of flycatchers to meet the recovery objectives for the San Luis Valley management unit.

Current Use (No Action) Alternative A: Approximately 1,230 acres of core habitat are available for the southwestern willow flycatcher in the Current Use (No Action) Alternative A. This represents about 44% of the available habitat. Motorized and non-motorized routes influence about 74.8 and 100%, respectively, of the available habitat. This indicates that potential impacts from motorized vehicles may be fairly high while non-motorized disturbances may occur in all available habitats. This is because most riparian areas have routes close to them and are accessed more frequently by humans for recreation and other purposes. The amount of available core habitat would remain unchanged in the Current Use (No Action) Alternative A. This habitat could be further influenced or made less effective by unrestricted cross-country vehicle travel that could increase, direct, indirect, and cumulative effects more than they are under the action alternatives (see Table 57, below).

Action Alternatives (Direct, Indirect, Cumulative Effects): The Minimum Access Alternative B provides the highest benefit to southwestern willow flycatchers because it is best addresses the potential impacts of routes and motorized travel. The Minimum Access Alternative B does not address non-motorized disturbance as well as the Proposed Action Alternative C because it leaves many of the routes open to non-motorized human uses. In the Minimum Access Alternative B, approximately 1,387 acres of core habitat would be retained while the Maximum Access Alternative D and Proposed Action Alternative C would retain about 1,302 and 1,341 acres, respectively. These differences represent about 49.6%, 46.5%, and 47.9% of the available habitat, as compared to 44% in the Current Use (No Action) Alternative A. These differences are slight but may have important implications to the southwestern willow flycatcher because of its narrow habitat preferences.

When compared to the core habitat acreage in the Current Use (No Action) Alternative A under current conditions, the core habitat protected under the Proposed Action Alternative C is approximately 9% greater while the Minimum Access Alternative B and Maximum Access Alternative D are approximately 13% and 6% greater, respectively. If the core habitat for the Current Use (No Action) Alternative A were projected based upon full implementation for the life of the plan, the core habitat would further decrease due to expected route proliferation.

The highest acreage of core habitat is available in the Minimum Access Alternative B, lowest in the Maximum Access Alternative D, with the Proposed Action Alternative C closer to maximum use but still median between the two. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C (see Table 57).

Effects Determination: It is determined that the Current Use (No Action) Alternative A "May Affect, but is Not Likely to Adversely Affect" southwestern willow flycatchers that occur or have habitat present within the project area. All action alternatives (Alternative B, C, and D) including the Proposed Action Alternative C are determined to "May Affect, but Not Likely to Adversely Affect" this species. The rationale for this conclusion is as follows:

- The unrestricted cross-country travel associated with the Current Use (No Action) Alternative A has the potential to negatively affect individual flycatchers or their habitats. The effects are expected to be discountable and immeasurable because of the location of the minor amount of habitat involved. No adverse affects are anticipated.

Table 56: Core Habitat Southwestern Willow Flycatcher (acres/ percentage)

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core Areas/Closed Routes, public land (acres)	1,341 acres 47.93%	1,230 acres 43.96%	1,387 acres 49.57%	1,302 acres 46.53%
Non-motorized Open Routes (Buffer area)	25 acres 0.89%	33 acres 1.18%	26 acres 0.93%	30 acres 1.07%
Motorized Open Routes (Buffer area)	1,851 acres 66.15%	2,093 acres 74.80%	1,729 acres 61.79%	1,912 acres 68.33%
Administrative Use (Buffer area)	721 acres 25.77%	640 acres 22.87%	718 acres 25.66%	683 acres 24.41%
Total land base of public lands	2,798 acres 0.54%	2,798 acres 0.54%	2,798 acres 0.54%	2,798 acres 0.54%
Using Habitat Types- Low Elevation Riparian and High Elevation Riparian				

- All action alternatives provide different degrees of secure core habitat for southwestern willow flycatchers. Although some discountable negative effects may still occur because of the route network proposed in each action alternative, all action alternatives reduce the total route mileage, restrict cross-country vehicle travel and reduce the risk of negative impacts on habitat. Some discountable negative effects may still occur because of the road network proposed in each action alternative.

6) Yellow-billed Cuckoo

Affected Environment: The only known cuckoo population inhabits low elevation riparian woodlands such as cottonwood galleries and willow thickets on the McIntire/Simpson property complex in Conejos County along the Conejos River. The species has always been considered an uncommon summer resident. According to the Technical Conservation Assessment (Wiggins, 2005), yellow-billed cuckoos were not known or expected to occur in the San Luis Valley.

Cuckoos depend on large tracts of contiguous riparian woodland. Cuckoos are one of the latest Neotropical migrants to arrive in North America from their wintering grounds in South America. Cuckoos prefer to nest in open woodlands with an understory of dense vegetation especially near water.

Major threats to cuckoo abundance include habitat loss and fragmentation, pesticides, alteration of hydrological features such as water diversions and dams, and grazing degradation of habitat (especially impacts to understory vegetation).

Disturbance has likely thus far been limited because these secretive birds live at a site densely populated with cottonwoods where there are only a few motorized routes. Although recreational use in this habitat type is minimal, it could increase and result in increased impacts to this species and/or habitat. Additional impacts to this species are likely to occur if and when livestock are reintroduced to the site where cuckcoos are found.

Current Use (No Action) Alternative A: Approximately 1,197 acres of core habitat are available for the yellow-billed cuckoo in the Current Use (No Action) Alternative A. This represents about 44.1% of the total available habitat. Motorized and non-motorized routes influence about 74.9 and 0.5%, respectively, of the available habitat. This indicates that potential impacts from motorized vehicles may be fairly high while non-motorized disturbances are minimal. The amount of available core habitat would remain unchanged in the Current Use (No Action) Alternative A and would be further influenced or made less effective by unrestricted cross-country vehicle travel. Direct, indirect, and cumulative effects are greater under the Current Use (No Action) Alternative A than they are under the action alternatives (see Table 58, below).

Action Alternatives (Direct, Indirect, Cumulative Effects): The Minimum Access Alternative B provides the highest benefit to yellow-billed cuckoos because it is best addresses the potential impacts of routes and motorized travel. Approximately 1,344 acres of core habitat in the Minimum Access Alternative B would be retained while the Proposed Action Alternative C and the Maximum Access Alternative D and would retain about 1,303 and 1,269 acres, respectively. These differences represent about 49.5%, 48, and 46.7% of the available habitat; as compared to 44.1% in the Current Use (No Action) Alternative A (see Table 58). These differences are slight but may have important implications to the yellow-billed cuckoo because of its narrow habitat preferences. When compared to the core habitat acreage in the Current Use (No Action) Alternative A under current conditions, the core habitat protected under the Proposed Action Alternative C is approximately 9% greater while the Minimum Access Alternative B and Maximum Access Alternative D are approximately 12% and 6% greater, respectively. If the core habitat for the Current Use (No Action) Alternative A were projected based upon full implementation for the life of the plan, the core habitat would further decrease due to expected route proliferation.

Table 57: Core Habitat Western Yellow-billed Cuckoo (acres / percentage)				
Designation	**Proposed Action Alternative C**	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Core Areas/Closed Routes, Public Land (acres)	1,303 acres 47.97%	1,197 acres 44.07%	1,344 acres 49.48%	1,269 acres 46.72%
Non-motorized Open Routes (Buffer area)	18 acres 0.66%	13 acres 0.48%	19 acres 0.70%	23 acres 0.85%
Motorized Open Routes (Buffer area)	1,801 acres 66.31%	2,033 acres 74.85%	1,658 acres 62.04%	1,856 acres 68.34%
Administrative Use (Buffer area)	715 acres 26.33%	640 acres 23.56%	712 acres 26.22%	680 acres 25.04%
Total land base of public lands	2,716 acres 0.52%	2,716 acres 0.52%	2,716 acres 0.52%	2,716 acres 0.52%
Using Habitat Type- Low Elevation Riparian, <9000 ft elevation, including willow, cottonwood				

Effects Determination: It is determined that the Current Use (No Action) Alternative A "Is Not Likely to Jeopardize" yellow-billed cuckoos that occur or have habitat present. All action alternatives (Alternative B, C, and D) including the Proposed Action Alternative C are determined to "Not Likely Jeopardize" this species. The rationale for this conclusion is as follows:

- The unrestricted cross-country travel associated with the Current Use (No Action) Alternative A has a higher potential to disturb individual cuckoos or their habitats than any of the action alternatives, however the effects are not expected to jeopardize the yellow-billed cuckoo because of the location of the habitat and travel season and use patterns.

- All action alternatives provide different degrees of secure core habitat for yellow-billed cuckoos. All action alternatives restrict cross-country vehicle travel and reduce the risk of negative impacts on habitat. Some negative effects may still occur because of the road network proposed in each action alternative.

Public Land Health Standards

Most of the TMP area is meeting the Standard for Public Land Health for T&E. A few areas that are easily accessible are not meeting this Standard, primarily because of impacts related to unrestricted travel routes. All of the action alternatives would either meet or make improvements towards meeting this Standard. The Current Use (No Action) Alternative A would not meet this standard and most likely retreat from the objective because of increased human use and route proliferation.

Table 58: Summary of Effects Determination					
Species	**Status**	**Proposed Action**	**Current Use**	**Minimal Access**	**Maximum Access**
Bald Eagle	FT	NLAA	LAA	NLAA	LAA
Black-footed Ferret	FE	NE	NE	NE	NE
Canada Lynx	FT	NLAA	NLAA	NLAA	NLAA
Mexican Spotted Owl	FE	NE	NLAA	NE	NLAA
Southwestern Willow Flycatcher	FE	NLAA	NLAA	NLAA	LAA

Table 58: Summary of Effects Determination					
Species	**Status**	**Proposed Action**	**Current Use**	**Minimal Access**	**Maximum Access**
Uncompaghre Fritillary Butterfly	FE	NE	NE	NE	NE
Yellow-billed cuckoo	FC	NLJ	NLJ	NLJ	NLJ
Species Status Key: FE = Federally Endangered FT = Federally Threatened FC = Federal Candidate NE = No Effect NLAA = May Affect, Not Likely to Adversely Affect LAA= May Affect, Likely to Adversely Affect NLJ= Not Likely to Jeopardize (Candidate species) None= Species habitat is not present or species is known not to be present					

Sensitive Species Assessments, Animal

The source of information for this analysis is derived from the State Director's list of sensitive animal and plant species for the BLM in Colorado (March 17, 2000). The State Director's sensitive species were identified using criteria found in BLM Manual 6840-Special Status Species Management, and from specific written comments received and evaluated from BLM Field Offices, DOW, U.S. Forest Service (Region 2), and the Colorado Natural Heritage Program (CNHP). The State of Colorado Threatened and Endangered Species List is derived from the Department of Natural Resources, DOW NDIS website (September 2005).

The following criteria were applied to those species known to occur on Colorado public lands: 1) species under status review by the USFWS; 2) species with numbers declining so rapidly that Federal listing may become necessary; 3) species with typically small and widely dispersed populations; or 4) species inhabiting ecological refugia or other specialized or unique habitats.

The CNHP Element Occurrences are considered in the analysis. The Element Occurrence data for animal species in the San Luis Valley is recorded at a level of precision that allows for an analysis of impacts from individual routes. Several of these species are included in the analysis of the alternatives but only BLM sensitive species are analyzed in detail. All element occurrence records have been mapped and impacts to element occurrences will be evaluated in the wildlife section of the EA. The species names and definitions of CNHP rankings are located in Appendix 19.

The analysis of effects on BLM sensitive species that occur or have habitat present in the project area is based on differences that each alternative will have on the 16 habitat types developed for the Southern Rocky Mountains in the Colorado Land Bird Conservation Plan (Beidleman, 2000). Each sensitive species is assigned to the habitat type(s) with which they are primarily associated to assess these effects. The exception to this is the Gunnison sage-grouse, which was recently changed from its status as a Candidate species for listing under the Endangered Species Act. This species will be addressed individually similar to T&E species because of continued concern for its conservation and viability. Potential impacts to each sensitive species are then assessed by evaluating the number of closed, open, and/or limited routes, core habitat, and habitat lost or gained in each alternative by habitat type. The analysis of anticipated impacts by habitat type is included in the "Wildlife - Terrestrial" section of this report and will not be repeated for the

sensitive species section. The determinations for each sensitive species is tiered to that analysis and summarized in Table 47, above.

The species analyzed in Table 62 are based on the combined State Directors List of sensitive animal and plant species for the BLM in Colorado (March 17, 2000), and the DOW State Endangered and Threatened Species List. Table 60, below, describes the habitat(s) that each species utilizes and tiers the effects analysis for individual species to the analysis of habitat types provided in the "Wildlife - Terrestrial" section.

Table 59: Combined Colorado BLM Sensitive Species List and DOW State Endangered and Threatened Species List (DOW NDIS website, September 2005) and Associated Habitat Type(s)

Species	Status	Habitat Type	Species Occurrence
REPTILES/ AMPHIBIANS			
Boreal Toad	BLM Sensitive, State Endangered	Alpine/ Subalpine High Elevation Riparian Wetlands Spruce-Fir	No documented occurrence
Milk Snake	BLM Sensitive	Agricultural Grassland Semi-desert Shrubland Sagebrush Shrubland	Historical occurrence in agricultural habitat
Northern Leopard Frog	BLM Sensitive	Wetlands Low Elevation Riparian	Known occurrence; suitable habitat along healthy riparian systems, wetlands, backwaters of the Rio Grande
Texas Horned Lizard	BLM Sensitive	Grassland, Semi-desert Shrubland Agricultural	No known occurrence, suitable habitat
MAMMALS			
Big Free-tailed Bat	BLM Sensitive	Cliff/ Rock/ Talus Mountain Shrubland Piñon/Juniper Semi-desert Shrubland Grasslands Wetlands Low Elevation Riparian	No known occurrence (rare in Colorado); suitable habitat in piñon/juniper and sagebrush/rabbitbrush steppe
Black-footed Ferret	State Endangered	Grassland Semi-desert Shrubland Sagebrush Shrubland	Extirpated, generally associated with prairie dog towns
Canada Lynx	State Endangered	Spruce-Fir Forest Alpine/ Subalpine Mixed Conifer Aspen High Elevation Riparian Mountain Shrubland	Known occurrence; found on public lands adjacent to RGNF in forested stringers, riparian areas, may forage on public lands
Northern River Otter	State Threatened	Low Elevation Riparian High Elevation Riparian	None, Suitable habitat on Rio Grande, Conejos River, Saguache Creek, La Garita Creek

Table 59: Combined Colorado BLM Sensitive Species List and DOW State Endangered and Threatened Species List (DOW NDIS website, September 2005) and Associated Habitat Type(s)			
Species	**Status**	**Habitat Type**	**Species Occurrence**
Townsends' Big-eared Bat	BLM Sensitive	Mountain Shrubland Semi-desert Shrubland Piñon/Juniper Sagebrush Shrubland Mixed Conifer Ponderosa Pine Cliff/ Rock/ Talus Wetlands Low Elevation Riparian	Known occurrence; Suitable habitat in caves, abandoned mines, cliffs; foraging occurs over water, along vegetation edges, and over sagebrush
Wolverine	State Endangered	Alpine/ Subalpine Cliff/ Rock/ Talus	No known occurrence, Suitable habitat at high elevations in the Sangre de Cristo Mountains
Yuma Myotis	BLM Sensitive	Mountain Shrubland Semi-desert Shrubland Piñon/Juniper Cliff/ Rock/Talus Wetlands Low Elevation Riparian	Known occurrence, Suitable habitat in semi-arid canyon lands and mesas at lower elevations
BIRDS			
American White Pelican	BLM Sensitive	Wetlands Low Elevation Riparian	Known occurrence; Suitable habitat on Blanca Wetlands, McIntire/ Simpson, Rio Grande
Bald Eagle	State Threatened	Low High Elevation Riparian Wetlands Cliff/ Rock Talus Mountain Shrubland Semi-desert Shrubland Mixed Conifer Spruce-Fir Grasslands	Known occurrence: winter roosting, McIntire/ Simpson, Blanca Wetlands, Rio Grande, Saguache Creek, Conejos River cottonwood and Mixed Conifer
Barrow's Goldeneye	BLM Sensitive	Low Elevation Riparian	Known occurrence; Suitable habitat at Blanca Wetlands, other wetland systems
Black Tern	BLM Sensitive	Wetlands Low Elevation Riparian	Known occurrence, Blanca Wetlands nesting and foraging habitat
Ferruginous Hawk	BLM Sensitive	Semi-desert Shrubland Mountain Shrubland Sagebrush Shrubland Grassland	Known occurrence; nest site in Mogotes Flat Allotment, Likely use planning area for foraging and nesting
Gunnison Sage-Grouse	BLM Sensitive	Mountain Shrubland Sagebrush Shrubland, Low Elevation Riparian	Known occurrence; Poncha Pass in Saguache County,
Least Tern	State Endangered		
Long-billed Curlew	BLM Sensitive	Grasslands Wetlands	Known occurrence; Suitable habitat on Blanca Wetlands
Mexican Spotted Owl	State Threatened	Cliff/ Rock/ Talus Ponderosa Pine Piñon/Juniper Mixed Conifer Mountain Shrubland	None, Suitable habitat in steep rock canyons with mixed conifer and ponderosa pine

Table 59: Combined Colorado BLM Sensitive Species List and DOW State Endangered and Threatened Species List (DOW NDIS website, September 2005) and Associated Habitat Type(s)			
Species	**Status**	**Habitat Type**	**Species Occurrence**
Mountain Plover	BLM Sensitive	Semi-desert Shrubland Sagebrush Shrubland Grassland Agricultural	Known occurrence in Saguache, Costilla, and Conejos Counties; Suitable habitat; birds require impact grazing regimes and short grass prairies or stunted widely spread shrubs
Northern Goshawk	BLM Sensitive	Aspen Mixed Conifer Spruce-Fir Wetlands Mountain Shrubland Grasslands	Known occurrence; Foraging and limited nesting habitat available
Southwestern Willow Flycatcher	State Endangered	Low Elevation Riparian High Elevation Riparian	Known occurrence at McIntire/ Simpson, La Garita Creek, Saguache Creek, and other State and Federal lands
Western Burrowing Owl	State Threatened	Sagebrush Shrubland Semi-desert Shrubland Grassland	Known occurrence, found near prairie dog towns within shrub-steppe habitat
Western Snowy Plover	BLM Sensitive	Wetlands	Known occurrence, Blanca Wetlands nesting and foraging habitat
Western Yellow-billed Cuckoo	BLM Sensitive	Wetlands Low Elevation Riparian	Known occurrence, found on McIntire/ Simpson tract
White-faced Ibis	BLM Sensitive	Wetlands Low Elevation Riparian	Known occurrence; Suitable habitat on Blanca Wetlands, McIntire/Simpson, Rio Grande
Whooping Crane	State Endangered	Agricultural Wetlands Low Elevation Riparian	None, Suitable habitat on private, Federal lands near agricultural areas
FISH			
Flathead Chub	BLM Sensitive	Low Elevation Riparian	Known occurrence, lower reaches of the Rio Grande
Rio Grande Chub	BLM Sensitive	Low Elevation Riparian Wetlands	Known occurrence; Blanca Wetlands, Spotty distribution in the Saguache, San Luis, and Rio Grande drainages
Rio Grande Cutthroat Trout	BLM Sensitive	High Elevation Riparian	Known occurrence; Tuttle Creek and limited in the Carnero Creek drainage
Rio Grande Sucker	State Endangered	High Elevation Riparian Low Elevation Riparian	No known occurrence, found on limited streams on RGNF and private lands near BLM

Gunnison's Sage-Grouse: The Gunnison sage-grouse is suspected to have occurred historically in suitable habitats in southwestern to south-central Colorado (Rogers, 1964; Young, 2003). It had a discontinuous distribution and was closely associated with sagebrush communities below approximately 9,800 feet.

Historically, the Gunnison sage-grouse occupied suitable habitats in several portions of the San Luis Valley (Rogers, 1964). All sage-grouse in the valley were thought to be extirpated by the 1950s. The DOW and BLM reintroduced 30 to 32 birds in the Poncha Pass area from the larger population in the Gunnison Basin in 1971 and 1972 (Gionfriddo, 2002). There may have been more than 100 birds present by the mid-1980s (Gionfriddo, 2002). The known population of

Gunnison's sage-grouse (approximately 20-30 birds) is found in Saguache County in the Poncha Pass area in sagebrush steppe habitat. Their specific habitat relationships and seasonal requirements are expected to be similar to those described for the population as a whole and closely related to the stands of big sagebrush that occur more frequently in the north end of the valley.

All sage-grouse populations, including the Gunnison's, are closely associated with sagebrush for their needs. This relationship is the strongest with varieties of big sagebrush (*Artemisia tridentata spp.*). Use of different sagebrush habitats occurs between seasons although this pattern generally involves dense stands of mature sagebrush for nesting and wintering sites, open areas for breeding displays (leks), and semi-open grassy riparian areas for rearing and/or foraging habitat for young chicks. Sage-grouse prefer extensive open sage areas with few if any trees (Connelly et al., 2000). Lek attendance, nesting, and early brood rearing occur in breeding habitats. These habitats involve sagebrush-dominated rangelands with a healthy herbaceous understory (Connelly et al., 2000).

Males appear at established leks or form them opportunistically at sites within or adjacent to suitable nesting habitat (Connelly et al., 2000).

Suitable nesting habitat for the Gunnison sage-grouse has been characterized as big sagebrush stands within two miles of leks that have at canopy closure of at least 20% and an average height of 16 inches (Gunnison Sage Grouse Conservation Plan, 1997).

Early brood-rearing areas are usually relatively close to the nest site and often involve upland springs, riparian areas, or other similar habitats that contain a high species richness of plants and insects. Brood-rearing habitat for Gunnison sage-grouse has been defined as riparian plant communities associated with intermittent and perennial streams, springs, seeps, and meadows that are within upland areas or along the edge of agricultural hay meadows (Gunnison Sage Grouse Conservation Plan, 1997).

Sage-grouse broods may occupy a variety of habitat types during the summer including sagebrush, meadows, small burns, farmland, and other areas that provide good forb cover (Connelly et al., 2000). Gunnison sage-grouse are basically non-migratory and use similar brood-rearing habitat throughout the summer and fall (Gunnison Sage Grouse Conservation Plan, 1997).

Sage-grouse during winter feed almost exclusively on the leaves of sagebrush. Diet and winter cover needs prompt them to select sagebrush stands with greater canopy closures and taller shrubs, where they will primarily remain until the next nesting season. Winter habitat areas available to Gunnison sage-grouse are largely determined by snow depth. Sage-grouse in Colorado may be restricted to less than 10% of the sagebrush habitat because of variation in topography and snow depth (Beck, 1977; Hupp and Braun, 1989). Drainages are important areas for Gunnison sage-grouse during winters of deep snow because of the availability of tall, vigorous, big sagebrush (Gunnison Sage Grouse Conservation Plan, 1997). Other areas used by Gunnison sage-grouse during the winter include mesas, ridge tops, and flat, low sites of less than 5% slope.

The Gunnison Sage-Grouse Working Group is the primary body of state, Federal, and private interests that are working to conserve the grouse and prevent its listing under the ESA. The Working Group has identified a list of 42 factors grouped into three major categories that have contributed in some way to the long-term decline of the species. These three categories involve habitat quality, habitat loss and fragmentation, and physical disturbance. The primary factors associated with habitat quality include livestock grazing and other activities that have altered grass, forbs, soils, water tables, and sagebrush cover. Fragmentation and habitat loss has been caused by land conversions, developments, route proliferation, and other human factors. Physical disturbance has been caused by hunting, predators, off-highway vehicles, bird watchers, and other factors. The primary risk factors associated with Gunnison sage-grouse involve those activities that manipulate sagebrush quantity and quality, and cause habitat loss and disturbances.

The habitat available to the local Gunnison sage-grouse population is suspected to occur primarily on the south side of Poncha Pass. It is bordered on the east and west by the RGNF boundary and encompasses approximately 17,280 acres (Garcia, 2002). Ownerships include approximately 11,520 acres (67%) of public land, 5,120 acres (30%) of private land, and 640 acres (3%) belonging to the Colorado State Land Board. The area used by sage-grouse involves approximately 10,000 acres at the far north end of the valley on the east side of Highway 285. The elevation varies from about 8,020 feet to 9,020 feet and contains a shrub community that is dominated by mountain big sagebrush (*Artemisia tridentata vaseyana*), black sagebrush (*Artemisia nova*), and Gambel Oak (*Quercus gambellii*).

An apparent sharp decline in sage-grouse numbers in the Poncha Pass area has been observed since 1992, with surveys in 1999 indicating that the population is critically low and in danger of disappearing (Gionfriddo, 2002). Recent transplantations from 2000 to 2003 have occurred to augment this population and estimated 22-25 birds are occupying the sagebrush shrubland habitat.

The area occupied by Gunnison sage-grouse is heavily used by recreationists year-round and bisected by numerous motorized routes on each side of Highway 285. The amount of disturbance to this population varies depending on amount and season of use. Critical periods for grouse occur in the spring and summer during nesting and brood rearing activities. Heavy snowmobile use occurs in the Poncha Pass area during the winter. Heavy ATV and 4WD use occurs during the fall hunting seasons, with a considerable amount of ATV travel and camping occurring during the summer. The access to the sagebrush steppe is moderately easy and the area is moderately to heavily roaded.

Approximately 4,895 acres of core habitat is available for Gunnison sage-grouse in the Current Use (No Action) Alternative A. This represents about 33.4% of the available habitat. Motorized and non-motorized routes influence about 97.7% and 0.8%, respectively, of the available habitat. This indicates that potential impacts from motorized vehicles may be high with very little undisturbed habitat available. The small amount of core habitat would remain unchanged in the Current Use (No Action) Alternative A and further influenced or made less effective by increasing unrestricted cross-country vehicle travel. Direct, indirect, and cumulative effects are much greater under the Current Use (No Action) Alternative A than they are under the action alternatives (see Table 59).

The Minimum Access Alternative B provides the highest benefit to Gunnison sage-grouse because it is best addresses the potential impacts of routes and motorized travel. In the Minimum Access Alternative B, approximately 6,114 acres of core habitat would be retained while the Maximum Access Alternative D and Proposed Action Alternative C would retain about 5,231 and 5,567 acres, respectively. These differences represent about 41.7%, 35.7%, and 38% of the available habitat, as compared to 33.4% in the Current Use (No Action) Alternative A. The core habitat protected under the Minimum Access Alternative B is approximately 25% greater, the Proposed Action Alternative C protects approximately 14% more and the Maximum Access Alternative D protects approximately 7% more than the Current Use (No Action) Alternative A (i.e., under present conditions, not projected conditions expected upon full implementation for the duration of the plan). The projection of core habitat under the action alternatives is considerable more than under the Current Use (No Action) Alternative A. This is due to the loss of habitat with the Current Use (No Action) Alternative A over the life of the plan. The highest acreage of core habitat is available in the Minimum Access Alternative B, lowest in the Maximum Access Alternative D, with the Proposed Action Alternative C median between the two. The greatest amount of benefit is expected from the Minimum Access Alternative B, the least amount from the Maximum Access Alternative D, and a moderate amount from the Proposed Action Alternative C (see Table 61).

All action alternatives provide different degrees of secure core habitat for Gunnison's sage-grouse. Although some negative effects may still occur because of the route network proposed in each action alternative, all action alternatives reduce the route mileages in sage-grouse habitat, restrict cross-country vehicle travel and reduce the risk of negative impacts on habitat.

Table 60: Core Habitat Gunnison Sage-grouse (acres / percentage)

Designation	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
Core Areas/Closed Routes, public land (acres)	5,567 acres 37.96%	4,895 acres 33.37%	6,114 acres 41.69%	5,231 acres 35.67%
Non-motorized Open Routes (Buffer area)	164 acres 1.12%	113 acres 0.77%	164 acres 1.12%	125 acres 0.85%
Motorized Open Routes (Buffer area)	12,948 acres 88.28%	14,322 acres 97.65%	11,918 acres 81.26%	13,417 acres 91.48%
Administrative Use (Buffer area)	387 acres 2.64%	0 acres 0.00%	625 acres 4.26%	276 acres 1.88%
Total land base of public lands	14,667 acres 2.83%	14,667 acres 2.83%	14,667 acres 2.83%	14,667 acres 2.83%
Using Habitat Type- Sagebrush Shrubland across public lands and public lands north of Wild Bill Gulch and Raspberry Creek				

For Gunnison's sage-grouse that occur or have habitat within the project area, it is determined that the Current Use (No Action) Alternative A will "Likely Impact (Likely to result in a trend towards Federal listing or a loss of viability in the planning area). In regards to the action alternatives, Alternative C and D "May Impact (May Impact Individuals, but is not likely to cause a trend towards Federal listing or loss of viability in the planning area) while Alternative B will have a "Beneficial Impact" on the species.

All action alternatives provide different degrees of secure core habitat for Gunnison's sage-grouse. Although some negative effects may still occur because of the route network proposed in each action alternative, all action alternatives reduce the route mileages in sage-grouse habitat, restrict cross-country vehicle travel and reduce the risk of negative impacts on habitat.

Affected Environment by Habitat Type

Two sources of data were used to generate data for the habitat types. LANDSAT Vegetation Classification (DOW/BLM) was used for upland vegetation. This data is derived from 30 meter pixel resolution taken from satellite imagery. This classification is excellent for upland vegetation types that cover large areas but less accurate for classifying riparian vegetation due to the small, linear areas often associated with riparian vegetation habitat type. The riparian vegetation was classified using National Aerial Photography Program color-infrared aerial photography and riparian polygons were mapped at 1:24,000 scale. (See the Floodplains, Wetlands and Riparian Zones section for additional details.)

Table 23, in section Wildlife - Terrestrial above, identifies the acres of habitat type in the project area.

Undisturbed core habitat is particularly important for most sensitive species, especially during the breeding season. Table 25 above describes the amount of core habitat that will be available in each habitat type by alternative. This information is presented in acres and percentages to help portray the subtle differences between the action alternatives and the Current Use (No Action) Alternative A. Although the acreages and percentages appear small, the differences have important implications for sensitive species because of their conservation status. This comparison reveals the degree to which each habitat type is impacted by routes that are buffered according to the criteria developed for route use and width. The differences between the Current Use(No Action) Alternative A and the action alternatives is likely to be greater in the future because of route proliferation associated with unrestricted cross-country travel in the Current Use (No Action) Alternative A (although not displayed). A detailed narrative of this comparison for each habitat type and alternative can be found in the "Wildlife - Terrestrial" section.

Mitigation

The following mitigation measures would apply to all action alternatives:

- New trail construction such as re-routes should be inventoried for use by unique TES species prior to construction. Reproductive areas that may affect species viability should be avoided.

- Monitor routes for disturbances and adjust human access opportunities as necessary through seasonal restrictions or other methods. Educate the public about the reasons for these restrictions.

- Incorporate the designated routes into the maintenance plan for San Luis Valley public land roads in accordance with the final decision.

- Utilize the standard travel uses signing program developed by the Natural Resources Working Group. Institute an aggressive sign maintenance program. Utilize volunteers to assist in sign maintenance.

Conclusion and Determination for Sensitive Species

The determinations of effect for sensitive species are displayed in Table 12. These determinations are based on the information portrayed in Tables 2, 5, and 6, and the narrative of habitat type effects included in the "Wildlife - Terrestrial" section (see pages 113-131). A detailed assessment and determination for wetland habitat associated species is provided in Table 62 because of the importance of these areas to many sensitive and unique wildlife species. The greatest amount of conservation benefit to most wildlife species in all habitat types is expected from the Minimum Access Alternative B because it retains the largest core habitats and least amount of motorized routes and fragmentation effects. The Maximum Access Alternative D provides the least amount of conservation benefit while the Proposed Action Alternative C provides a moderate amount of benefit that is often median between the two other action alternatives in all 16 habitat types.

Table 61: Combined Colorado BLM State Director's Sensitive Species List (2001) and Colorado State Threatened and Endangered Species List (DOW NDIS website, Sept 2006): Effects Analysis by Alternative

Species	Status	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
REPTILES/ AMPHIBIANS					
Boreal Toad	BLM Sensitive, State Endangered	NI	MI	NI	NI
Milk Snake	BLM Sensitive	NI	LI	NI	NI
Northern Leopard Frog	BLM Sensitive	BI	LI	BI	MI
Texas Horned Lizard	BLM Sensitive	NI	LI	NI	MI
MAMMALS					
Big Free-tailed Bat	BLM Sensitive	NI	NI	NI	NI
Black-footed Ferret	State Endangered	NI	MI	NI	MI
Canada Lynx	State Endangered	MI	MI	MI	MI
Northern River Otter	State Threatened	NI	NI	NI	NI
Townsends' Big-eared Bat	BLM Sensitive	NI	NI	NI	NI
Wolverine	State Endangered	NI	NI	NI	NI
Yuma Myotis	BLM Sensitive	NI	NI	NI	NI
BIRDS					
American White Pelican	BLM Sensitive	NI	LI	NI	MI
Bald Eagle	State Threatened	MI	MI	NI	MI
Barrow's Goldeneye	BLM Sensitive				
Black Tern	BLM Sensitive				
Ferruginous Hawk	BLM Sensitive	NI	LI	NI	MI
Gunnison Sage-Grouse	BLM Sensitive	MI	LI	BI	MI
Least Tern	State Endangered	NI	NI	NI	NI
Long-billed Curlew	BLM Sensitive				
Mexican Spotted Owl	State Threatened	NI	MI	NI	MI
Mountain Plover	BLM Sensitive	NI	MI	NI	NI
Northern Goshawk	BLM Sensitive	NI	MI	NI	MI
Southwestern Willow Flycatcher	State Endangered	MI	MI	MI	MI
Western Burrowing Owl	State Threatened	NI	MI	BI	NI

Western Snowy Plover	BLM Sensitive				
Western Yellow-billed Cuckoo	BLM Sensitive	NI	MI	BI	MI
White-faced Ibis	BLM Sensitive				
Whooping Crane	State Endangered	NI	NI	NI	NI
FISH					
Flathead Chub	BLM Sensitive	NI	MI	NI	NI
Rio Grande Chub	BLM Sensitive	NI	MI	NI	NI
Rio Grande Cutthroat Trout	BLM Sensitive	NI	MI	NI	NI
Rio Grande Sucker	State Endangered	NI	MI	NI	MI

Definition of State Sensitive Species Determinations:
BI = Beneficial Impact
NI = No Impact
MI = May Impact (May Impact Individuals, but is not likely to cause a trend towards Federal listing or loss of viability in the planning area)
LI = Likely Impact (Likely to result in a trend towards Federal listing or a loss of viability in the planning area)
None = Species habitat is not present or species is known not to be present

Table 62: Wetland Species Determinations:

Species	Status	Proposed Action Alternative C	Current Use (No Action) Alternative A	Minimum Access Alternative B	Maximum Access Alternative D
BIRDS					
American White Pelican	BLM Sensitive	MI	LI	MI	MI
Bald Eagle	State Threatened			See Threatened and Endangered Species Determinations	
Barrow's Goldeneye	BLM Sensitive	MI	LI	MI	MI
Black Tern	BLM Sensitive	MI	LI	MI	MI
Least Tern	State Endangered	MI	LI	MI	MI
Long-billed Curlew	BLM Sensitive	MI	LI	MI	MI
Western Snowy Plover	BLM Sensitive	MI	LI	MI	MI
Western Yellow-billed Cuckoo	BLM Sensitive			See Threatened and Endangered Species Determinations	
White-faced Ibis	BLM Sensitive	MI	LI	MI	MI
REPTILES/ AMPHIBIANS					
Northern Leopard Frog	BLM Sensitive	MI	LI	MI	MI
FISH					
Rio Grande chub	BLM Sensitive	MI	LI	MI	MI
MAMMALS					
Big Free Tailed Bat	BLM Sensitive	NI	NI	NI	NI
Townsend's Big-eared bat	BLM Sensitive	NI	NI	NI	NI
Yuma Myotis	BLM Sensitive	NI	NI	NI	NI

Definition of State Sensitive Species Determinations:
NI = No Impact
MI = May Impact (May Impact Individuals, but is not likely to cause a trend towards Federal listing or loss of viability in the planning area)
BI = Beneficial Impact
LI = Likely Impact (Likely to result in a trend towards Federal listing or a loss of viability in the planning area)
None = Species habitat is not present or species is known not to be present

All action alternatives greatly exceed the Current Use (No Action) Alternative A in regards to conservation benefit. Additional information concerning habitat fragmentation, maintenance of movement corridors, and habitat gains/losses is available in the narrative of habitat types in the "Wildlife - Terrestrial" section, which applies to T&E and sensitive species.

For the Colorado Natural Heritage Program Species List Definitions of Conservation Rankings, see Appendix 19.

Cumulative Effects for Terrestrial and Aquatic Wildlife, Migratory Birds, and TES: Road systems can have a significant ecological affect on wildlife species and their habitats. It is estimated from a cumulative perspective, that there are 3,852,501 miles of public roads in the United States, used by over 200 million vehicles (Forman, 2000). These roads may influence habitat use within a one-mile wide area and are a significant source of mortality to many wildlife species. Secondary roads, such as most of the main roads located on public lands, total about 2,383,817 miles in the United States, and may influence an area about 656 feet wide (Forman, 2000). These numbers do not include smaller, back-country routes like those that are the focus of this analysis. These smaller routes offer much less direct mortality and often provide fewer of the other impacts associated with wildlife-road interactions. However, smaller back-country routes still provide fragmentation and disturbance effects that, when considered in association with the amount of primary and secondary routes in the United States, illustrates the value of unroaded core habitat and the risk of cumulative effects from routes of any type when they infringe upon many wildlife species and their habitats.

The planning area contains 7,892 miles of routes, or approximately 2.1 miles of route per square mile. It is estimated that about 1,679.2 miles of this occurs on public lands, which equates to roughly 2.06 miles of route per square mile. These types of route densities have the potential to influence numerous wildlife species. The value and diversity of habitats differs by land ownership, particularly when considering the cumulative impacts that have occurred on private land. These impacts include high-intensity agricultural use, land developments, infrastructure construction and maintenance, and other human impacts that are reasonably certain to continue to occur or increase as the local human population expands. These activities will continue to have cumulative impacts on the remaining habitat blocks that occur on the valley floor and highlights the importance of the adjacent public lands for providing quality habitat and security for numerous wildlife species.

It is reasonably certain that the desire for motorized recreation will continue to increase throughout the San Luis Valley and that much of this demand will be placed on public lands. For example, the number of registered ATVs in Colorado skyrocketed from 11,700 in 1991 to more than 62,000 by 2001 (Denver Post, 2003) and will most likely continue to grow. The direct, indirect, and cumulative effects of motorized and non-motorized routes on wildlife species and habitats on the public lands will continue to be influenced from the increased development and human uses on private lands. These activities limit the amount of habitat that is available for wildlife species on private lands and highlight the value of the adjacent public lands for maintaining viable wildlife populations.

The Current Use (No Action) Alternative A has the potential to be additive to the types of cumulative effects that influence wildlife species because motorized travel is at its highest and

could potentially expand into other sensitive habitat areas due to unrestricted travel regulations. Unrestricted travel will allow habitat fragmentation and disturbances to increase as the human population expands and other uses increase. For example, the BLM forecasts traffic increases and a corresponding reduction in core habitat for mule deer, elk, bighorn sheep, and pronghorn habitat. This is projected to occur across all subunits but will particularly be evident in the grassland, shrubland(s), piñon/juniper, and riparian habitat types. Winter range on public lands will remain unprotected, and increasing residential development in winter range on or near the valley floor will continue to impact the San Luis Creek, Limekiln, South Fork, San Luis Hills, and Alamosa River TMAs.

All action alternatives associated with this analysis limit the potential for negative cumulative effects on wildlife species and their habitats due to the limitations proposed on unrestricted cross-country vehicle travel. The new travel guidelines will reduce fragmentation and disturbance impacts where they are presently occurring and prevent them from increasing in the future as other human demands increase. The degree to which this occurs will vary by alternative. All action alternatives are expected to limit potential cumulative impacts so that the desired species groups are maintained on public lands. Overall access for hunting on public lands is not expected to be significantly affected although cross-country vehicular travel will be prohibited.

NON-CRITICAL ELEMENTS

FOREST MANAGEMENT

Affected Environment

The SLRA RMP identifies two types of commercial timberlands: 5,894 acres of operable commercial forest lands and an additional 12,482 acres of operable woodlands in the SLRA. The commercial timber lands were actively managed until about 1985. Commercial timber sales have not been offered since the early 1980s due to a depressed market for wood products and a lack of personnel. The drought that began in 1999 and continues today has caused widespread insect infestations that have affected most forest cover types. The most prevalent insects are the mountain pine beetle which has affected ponderosa pine and the Douglas fir beetle which has affected Douglas fir. These insect infestations have created opportunities for an increased emphasis on managing the commercial timber lands. One stewardship contract was awarded in 2004 and a second in 2005 that included salvage of trees that have been killed by insects. Additional commercial timber sales and/or stewardship contracts are likely to occur in the near future in response to the insect infestations. The use of firewood for heating homes is common and the BLM has maintained an active personal use firewood program.

Environmental Consequences

Current Use (No Action) Alternative A: Existing access for commercial timber lands and areas open to personal use firewood collection would remain unchanged. There are 40.8 miles of open motorized routes under this alternative through wooded areas where firewood collection can occur.

Proposed Action Alternative C: The Proposed Action Alternative C could impact forest management to a greater degree than the Current Use Alternative A. More routes would be designated as closed, non-motorized, limited to authorized users, or limited to seasonal use which could limit access to commercial timber lands. Access to commercial timber lands on routes designated as open to motorized use would be higher than the Minimum Access Alternative B, which would likely reduce project-level planning costs and result in less controversy associated with reopening closed routes for commercial timber sales. An increase in the routes designated as open to the public as compared to Minimum Access Alternative B may result in more damage to routes, such as rutting caused by public use, that would have to be repaired prior to hauling timber. There would be more opportunities for personal use firewood cutting under this alternative than under Minimum Access Alternative B but less than what is available under the Current Use (No Action) Alternative A (see Table 63). There would be 24.5 miles of open motorized routes through wooded areas where firewood collection can occur under this alternative.

Table 63: Comparison of Miles of Motorized Routes Available for Firewood Cutting

	Proposed Action Alternative C	**Current Use (No Action) Alternative A**	**Minimum Access Alternative B**	**Maximum Access Alternative D**
Miles of open motorized routes available for firewood cutting	24.5 miles	40.8 miles	18.5 miles	26.9 miles
Percentage of motorized routes available for firewood collection as compared to Alternative A	60%	100%	45%	66%

Minimum Access Alternative B: This alternative has the greatest potential impact to forest management. The reduction of routes open to motorized use would limit motorized access to some commercial timber lands. Routes designated as non-motorized or closed to the public under this alternative would remain available for administrative access to commercial timber lands (travel use category of Limited User) through project level planning. Utilizing routes designated as closed or non-motorized to access commercial timber lands maybe controversial and may make it more difficult to actively manage these lands. Closed or non-motorized routes used to access commercial timber lands would have to be restored to an appropriate condition which may be expensive and cost prohibitive. Damage caused to routes by the public may be reduced, which may allow these routes to be more easily maintained in a more suitable condition for hauling timber. Opportunities for personal use firewood collection would be the least under this alternative with 18.5 miles of open motorized routes through wooded areas where firewood collection can occur.

Maximum Access Alternative D: This alternative would be similar to the Current Use (No Action) Alternative A except that motorized access to commercial timber lands may be reduced a degree. It is not anticipated that this alternative would have an impact on accessing commercial timber lands since 90% of the reduction is from user-created routes. There is a reduction in areas available for personal use firewood collection from the Current Use (No Action) Alternative A but more areas are available than under Minimum Access Alternative B or Proposed Action Alternative C. There are 26.9 miles of open motorized routes through wooded areas where firewood collection can occur.

GEOLOGY AND MINERALS

Affected Environment

The San Luis Valley is a large north-trending structural depression that lies between the Sangre de Cristo Mountains to the east and the San Juan Mountains to the west. This depression is filled with 5,000 to 7,000 feet of alluvial fan gravel, volcanic debris, and interbedded basaltic flows of the Pliocene and Pleistocene undifferentiated Santa Fe and Alamosa formations. Quaternary stream deposits, pediment gravels, and alluvial fan materials mantle most of the valley floor, while a smaller part of the floor is overlain by dune deposits that are younger than most of the alluvium.

The San Juan Mountains are the largest erosional remnant of an expansive (9,000 square miles) volcanic field, the San Juan volcanic field, which covered most of the Southern Rocky Mountains in Oligocene and later. Throughout the San Juan Mountains the general volcanic sequence includes initial intermediate lavas and breccias that were erupted from numerous scattered volcanoes. These were followed by explosive ash-flow eruptions of quartz latite and low-silica rhyolite. In Early Miocene, the character of volcanism changed and basalt and minor rhyolite were erupted intermittently through the Miocene and Pliocene.

The first location of a mineral-bearing lode claim in Saguache County was made in Kerber Creek in 1880. Past mineral production in the county includes precious and base metals, uranium, and sand and gravel. Overall, Saguache County's mineral production is considered to be of moderate importance. Mineral production from 1880 through 1958 was valued at about $11 million. Reported mineral production came from seven mining districts and includes: Blake (Mirage, Cotton Creek), Cochetopa Creek, Crestone (Baca Grant, Eldorado), Crystal Hill, Embargo Creek, Bonanza (Kerber Creek), and Liberty (Music). Gold and silver was discovered along Burnt Creek in the late 1890s or early 1900s. The Sangre de Cristo Range is a structurally complex area that includes extensive outcrops of Precambrian crystalline rocks, Paleozoic clastic sedimentary rocks, and rare Tertiary intrusives. Mineralization occurs primarily in veins and fissures in the Precambrian rocks and as replacements and veins in the sedimentary rocks. No mineralization occurs in the valley-fill sediments.

Mineral production (2004) is limited to high-grade limestone and aggregate. The high-grade limestone is used for reclamation in the Bonanza mining district; the aggregate is used locally for road construction and maintenance. Large volumes of aggregate occur in recent alluvial activity. Most of the production is along major creeks and their tributaries.

Gem quality turquoise is produced at the King Turquoise Mine in Conejos County.

Landscape rock is produced. The Poison Gulch, Limekiln, and Ojito Common Use Areas (CUAs) are areas that have been authorized for removal of moss rock by hand for landscaping projects (individuals with permits). Individuals with permits can remove moss rock by hand (no mechanized or motorized equipment is allowed). Vehicles must stay on established routes.

Oil and gas exploration has been active in the San Luis Valley and along the west slope of the San Juan Mountains. One oil well (Kirby Petroleum, Kirby Jynnifer 1-9) drilled in 1985 about six miles northwest of Del Norte, Colorado, produced approximately 4,000 barrels of oil from a

Tertiary[14] sill in the Dakota Sandstone for a short period of time. . All oil and gas wells have since been plugged and abandoned. The most recent geophysical explorations (seismic surveys) were conducted in 2001 and 2004.

A portion of the Limekiln TMA, known as the Hathaway Stone Quarry area, has been proposed for a technical 4WD rock crawling route. This area is underlain by the Fish Canyon Tuff, a nonwelded latitic ash-flow sheet that is easily scratched, fractured, and broken when driven over by motorized vehicles.

Environmental Consequences

Consequences Common to All Alternatives: None of the alternatives would appreciably affect mineral exploration and mining activities. New routes to mining locations could possibly be built under the authority of locatable, leasable, or saleable mineral regulations in instances where access is needed for mining purposes but not available via the designated travel routes, provided that appropriate levels of environmental analysis are conducted. Rock hounding would only be slightly impacted by the closure of some routes to motorized use. Access to the landscape rock areas will not be affected.

Current Use (No Action) Alternative A: Motorized travel uses on existing routes would not be changed. Prospecting and mining activities would not be affected. Continued cross-country use of the Hathaway Stone Quarry area of the Limekiln TMA by modified 4WD vehicles will cause significant damage to the geologic resources that is underlain by the Fish Canyon Tuff.

Proposed Action Alternative C: This alternative would result in fewer motorized access routes than the Current Use (No Action) Alternative A and Maximum Access Alternative D because of closures and limitations. Overall, there would continue to be a large number of access routes available for geological and mineral investigations. Continued use of the Hathaway Stone Quarry area of the Limekiln TMA by modified 4WD vehicles will cause significant damage to the geologic resources that is underlain by the Fish Canyon Tuff.

Minimum Access Alternative B: This alternative would provide the fewest available access routes, but would not substantially affect the ability to explore for minerals. The Minimum Access Alternative B would result in less motorized access than the other alternatives because of the closure of some access routes, but sufficient motorized access would be available for geological and mineral investigations. Impacts to Fish Canyon Tuff in the Hathaway Stone Quarry area of the Limekiln TMA would not occur since this alternative would close the technical 4WD rock crawling routes.

Maximum Access Alternative D: This alternative would provide the highest number of available access routes when compared to the other action alternatives, but would not substantially enhance mineral exploration. There would continue to be a high number of access routes available for geological and mineral investigations. This alternative would not make a

[14] "Tertiary" refers to a geologic period in time.

major difference in the ability to authorize mineral development. This alternative would have the most impact on the Fish Canyon Tuff in the Hathaway Stone Quarry area of the Limekiln.

LAND STATUS/REALTY AUTHORIZATIONS/ACCESS

Affected Environment:

Land Status: The sizes of the public land parcels in the SLRA TMP area vary tremendously. Throughout the project area there are numerous small, isolated parcels ranging from 40 acres to several hundred acres. At the other end of the scale are the large, contiguous "blocks" of public land covering multiple square miles and containing thousands of acres. Access to these parcels is provided by the state, Federal, and county road systems. There are some scattered parcels throughout the project area that lack public access due to private land and the lack of legal or prescriptive access rights or nonexistent road access (especially in the Upper Saguache and the San Luis Creek TMAs).

The SLRA RMP identified two land tenure categories. Category I lands are those identified for disposal by sale, while Category II lands are identified for disposal by exchange or other methods. Due to the lack of legal access, the small isolated parcels scattered throughout the project area are considered not economical to manage and were identified for disposal under either Category I or II. All other public land not identified as Category I or Category II are to be retained.

There is a small real estate market for rural lands, including public land isolated parcels identified for disposal in Categories I and II. This situation has enabled the disposal of public lands that are difficult to manage, and to acquire from willing sellers privately owned in-holdings. These disposals and acquisitions have resulted in reducing land ownership conflicts and improving BLM administered land patterns and management potential. These changes in land ownership improve land management and travel opportunities by creating new access and providing connections to existing public lands that had not existed previously.

Realty Authorizations: BLM land use authorizations consist mostly of ROWs. The uses authorized include roads and highways, utility lines for both electrical and telephone service, fiber optic lines, communication sites, water pipelines, and irrigation ditch facilities.

Road ROWs include authorizations for 4WD "two-track" routes that provide access to electrical transmission lines, small single-lane "driveways" for individual land owners, more highly developed double-lane access routes for subdivisions, and the Federal, state, and county road systems.

Power line ROWs range from authorizations for small kilovolt service lines for single or multiple residences, to large kilovolt double wood-pole transmission lines, to the very large steel structured Western Area Power Administration (WAPA) transmission facility constructed through the middle of the planning area. Telephone and fiber optic ROWs include aerial and buried systems.

There are two communication sites which currently exist. One is the Zapata site and the other is the CO 7 Saguache Ltd Partnership (in the Limekiln TMA).

Access: Primary vehicular access to public land is provided by the Federal, state, and county road systems. Secondary vehicular access is provided by BLM's road system and the various road ROWs granted to private entities. A small number of public access easements have been acquired across private land.

There are numerous parcels of public land, both large and small, that do not have legal public access, and there are many areas where access is restricted due to extreme terrain and isolation by private lands.

Environmental Consequences:

The following statements are common to all alternatives:

- There would not be an impact to land status, realty authorizations, or access.
- The uses authorized under existing ROW grants will not be affected.
- BLM is required by law to provide "reasonable access" to private landowners.

There are three different situations regarding BLM roads. One is the road is totally on public land. The second is the road has public land at its beginning with one or more scattered private land in-holdings along its route. The third is the route begins on private land and then enters public land.

Current Use (No Action) Alternative A: The uses of existing travel routes would not be affected. No new public easements across private lands that would provide access to public lands that do not have legal access are proposed.

Proposed Action Alternative C: Some uses of existing routes would change the type of access (e.g., motorized, non-motorized, or mechanized). The proposed closure of existing motorized routes that do not have existing ROWs across private land in-holdings would substantially impact private landowners who have previously used public land to access their private land with motor vehicles. The uses authorized under existing ROW grants will not be affected under this alternative. Some new public easements are proposed across private lands to provide access to public lands that do not have legal access.

Minimum Access Alternative B: Some uses of existing routes would be changed under this alternative, affecting the type of access (e.g., motorized, non-motorized, or mechanized). The proposed closure of existing motorized routes that do not have existing ROWs across private land in-holdings would substantially impact private landowners who have previously used public land to access their private land with motor vehicles. The uses authorized under existing ROW grants will not be affected. No new easements that would affect access to public lands that do not have legal public access are proposed.

Maximum Access Alternative D: Some uses of existing routes would be changed under this alternative, affecting the type of access (e.g., motorized, non-motorized, or mechanized). Only a few existing motorized routes without ROWs across private lands would be closed under the Maximum Access Alternative D. These proposed closures would impact the private landowners

who have previously used public land to access their private land with motorized vehicles. The uses authorized under existing ROW grants will not be affected. New public easements across private lands that would provide access to public lands that do not have legal access are not proposed.

NOISE

Affected Environment

The travel management planning process looked at all existing GPS inventoried routes as of 2003. Previously relatively few BLM system routes existed. These were primarily identified in order to plan maintenance and a travel management planning effort had not been attempted. Some routes were user created but historic and others were relative recently created by motorized users. The full range of data on each routes history is not available. Therefore, each route began with the basic data collection and unknown history. Additional data for further analysis is not available. Additional analysis of routes for dispersed camping and parking for recreational purposes will follow the completion of this travel management planning process. It is agreed that this is a heavily used recreational area and more than just travel management planning is needed to address the impacts to natural resources. Much of this further analysis is indirectly related to roads, but more directly related to many types of disperse recreation.

An inventory identified a total of approximately 1,679 miles of BLM routes. There are 6,214 miles of non-BLM routes within the planning area boundary (private property, other federal land ownership, etc.) of which only 223.4 miles are within or adjacent to public land acreages (project area). These routes (6,214 miles) are not affected by decisions made by this plan and represent all other roads not associated with public land acreages mainly on the valley floor and out of the control of the BLM.

Ambient sound and noise levels vary greatly throughout the San Luis Valley Travel Management Planning area. Ambient sound includes the wind, noise originating from vehicles traffic on Federal, State, and county highways. Other noise sources include industrial activities, farming and ranching activities, aircraft over-flights, recreational targets shooting, and activities related to uses around residential areas. Many areas within the planning area are relatively quiet. The preponderance of these quiet areas is on public lands. Most of the public lands are more influenced by the noise from motor vehicles on roads and trails than any other source. The level of noise from traffic decreases with increased distance from the roadways, but sound can travel great distances in the Valley. The degree to which the sounds of traffic noise can be heard away from the highways is dependent on the nature of the local terrain and wind direction. BLM has very little ability to change the noise patterns on the non-federal lands. Visitors to the planning area can find varying levels of noise which may or may not affect their recreational experiences. A range of noise levels is available in almost every TMA.

Noise maybe partially defined as sound that has irritating characteristics which may annoy the listener or be unwanted/disturbing. This idea is unique to every individual. Several surveys have been conducted in other areas that point to the wide variation of acceptance of certain sounds as noise or non-disturbing. Several studies using a decibel meter show that an individual might hear an ATV (which is offensive to them), but the meter would not pick up sound greater

than the ambient background level. The amount of acceptable or offending noise is a personal subjective matter that cannot be quantified. Neither the Resource Management Plan nor the Special Recreation Management Area (SRMA) designations contain prescriptions outside of the custodial level. Since the RMP recreation section did not establish a prescription level the custodial standard is the default. IM2006-060 establishes guidance until the RMP is updated. The travel management plan is not a means to an end, but provides a partial solution based upon resource issues around a road. Resource issues cannot be completely addressed by travel management planning. It is difficult to determine noise pollution soundscape impacts and at what degree the noise becomes offensive. Studies indicate that the type of recreation an individual participates in generally indicates the levels of sound the individual finds disturbing or the level that is tolerable. The BLM could not find a study or survey which was definitive in an indication of the amount of volume of sound that is not or is acceptable in a quiet use area or any other area of various uses or to various users. A definition of a quiet use area which would be functional for the ID team's planning efforts was not provided.

TMAs with low levels of noise include McIntire-Simpson, Railroad Corridor ACEC, Rio Grande Corridor ACEC, San Luis Hills WSA, Upper Saguache TMA, Alamosa River TMA, RaJadero ACEC, Tracy TMA, and Los Mogotes. TMAs with higher levels of noise include Limekiln, Lower Saguache, San Luis Creek TMA, Villa Grove TMA, Zapata Falls SRMA, Blanca Wetlands ACEC, South Fork TMA, and Trickle Mountain OHV area.

The TMAs identified above have higher noise levels. These TMAs have the highest route densities utilized by motorized vehicles. This can vary from many cars and large trucks on paved roads to the occasional passage of a motorcycle on an isolated primitive road. Noise in some of the TMAs may be muted by the surrounding vegetation and topography. The San Luis Valley is somewhat like a large bowl. The public lands are below the Forested lands without the vegetation to block noise, but with the elevation that allows noise to reach several miles from the source which is many times located at lower elevations.

The noise on and from these non-Federal lands can be expected to increase as new subdivisions are created and as traffic on the major federal, state, county, and local roads increases. These increases primarily result from increasing rural residential development and recreational uses.

Some members of the public commented they would prefer to have quiet recreation opportunities for wildlife viewing, hiking, and enjoying the vistas. Different locations and TMAs would provide variable amounts of quiet areas depending on the type of outdoor experience and location. The public land visitor would find these lower noise areas where route density is low, such as those TMAs mentioned above.

Sound levels and noise can impact important wildlife species, especially big game, small mammals, and birds. Typical winter wildlife movement patterns are such that they would tend to move to lower elevation areas where there would be less snow than that found at the higher elevations. Snowmobile use would be limited to those areas that receive large amounts of snow under all of the action alternatives (see Appendix 6). The proposed winter snowmobile limitation is to provide snowmobile use on designated motorized routes and in the one open area near Villa Grove. There is some shooting which occurs on a year around basis as target shooting. The majority of the shooting noise would occur during the summer and fall when

wildlife and bird species are widely dispersed over their range and not overly subjected to stress from that type of noise. During winter and spring when wildlife is more concentrated, little or no shooting occurs, therefore not creating overly stressful conditions for the wildlife. Target shooting is isolated, intermittent, and a legal activity.

Visitors can find a variety of destinations with varying amounts of noise that may or may not affect their recreation experience.

Environmental Consequences:

Current Use (No Action) Alternative A: As long as the Current Use (No Action) Alternative A remains in effect, it is reasonable to assume that more routes would continue to appear. This situation would increase the total amount of noise generated by users and reduce the number of quiet areas.

Noise levels under this alternative will change in a variety of ways. Noise levels will increase, varying from slight increases in some areas (the TMAs with fewer routes) to major increases in others (such as the Trickle Mountain and Villa Grove TMAs). Most of the increases will come from recreational motorized vehicle use although some increases in noise levels will come from increasing development on adjacent private lands. Noise levels will experience a slow but gradual increase. A variety of noise levels will still be able to be found as not all TMAs will experience the same levels and types of increases.

Concentrated target shooting would continue in the Limekiln TMA where there is a BLM authorized shooting range (Rio Grande Sportsman) and noise levels from this source would continue to slowly increase. The levels of noise from target shooting would generally remain the same but could experience slight increases from increased levels of recreational use.

Proposed Action Alternative C: This Action alternative, like the other action alternatives, will limit motorized travel to a designated route network and eliminate cross-country motorized travel. This action alternative, like the other action alternatives when compared to the Current Use (No Action) Alternative A, will help lead to a significant curtailment in route proliferation, which in effect should result in a reduction in the production and distribution of noise. This reduction in noise production should help to offset the increase production of noise that will be experienced under all alternatives due to population growth. Noise levels can be expected to increase in some of the TMAs, while decreasing in other TMAs under the Proposed Action Alternative C. Lower levels of noise are anticipated in areas where routes are closed or are converted from motorized to non-motorized use.

Sharp decreases in noise levels resulting from decreased amounts of motorized vehicle use would be found in the following TMAs: Limekiln, Lower Saguache, and Los Mogotes. The remaining TMAs would generally retain current noise levels, with some route closures offset by overall increases in use levels.

The proposed closure of certain routes will result in decreased noise levels in the immediate geographic vicinity. Those routes that remain open will lead to increases in noise levels as use moves from the closed routes to the remaining open routes. There will be an increase in the

number and size of areas where low levels of noise are found, as well as some localized areas where noise levels will increase.

The amount of noise from concentrated target shooting area in the Limekiln TMA will continue and slowly increase. Noise from dispersed target shooting may increase in those TMAs nearest the local towns, as shooters look for suitable places to practice their sport.

Minimum Access Alternative B: Noise levels are expected to decrease noticeably from that described for the Current Use (No Action) Alternative A. The decrease would be slight in areas that are already relatively quiet and sharper in those TMAs with the largest amount of route closures. Noise levels in the Limekiln, Lower Saguache, Tracy, and Trickle OHV TMAs would drop sharply. Noise levels in the Villa Grove TMA would drop moderately. The overall increase in visitors would probably result in a low to moderate increase in noise levels on those routes that remain open and on adjacent Federal, state, and local lands. This would be caused by users of motorized vehicles shifting their use to those routes that remain open.

Concentrated shooting would remain generally the same as under the Current Use (No Action) Alternative A. This would result in high noise levels in the Limekiln TMA and noise levels from this source would continue to slowly increase. The levels of noise from target shooting in the remainder of the planning area would generally remain the same but could experience slight increases from increased levels of recreational use.

Maximum Access Alternative D: Noise levels are expected to decrease not as much as the other Action alternatives, but still experience significant decreases relative to the Current Use (No Action) Alternative A. These decreases in noise levels would be derived from the abandonment of the Current Use (No Action) Alternative A prescription allowing cross-country motorized travel. This decrease would be slight in areas that are already relatively quiet and sharp in those TMAs that receive a moderate to high amount of motorized use. This decrease in noise levels relative to the Current Use (No Action) Alternative A would come largely from the cessation of cross-country motorized use and to a lesser degree from route closures. TMAs like Lower Saguache, Los Mogotes, and San Luis Hills could see low to moderate increases in noise levels. The overall increase in visitors would probably result in low to moderate increases in noise levels on routes that remain open and on adjacent Federal, state and local routes.

Mitigation

The following mitigation measures would apply to all alternatives:

- Implement public information and education to encourage controlling noise levels while recreating.
- Enforce federal and state noise level standards pertaining to the operation of motor vehicles.

RANGE MANAGEMENT

Affected Environment

The SLRA includes 137 livestock grazing allotments. Many of these allotments contain interspersed state and private lands. BLM grazing permits allow specific ranchers or permittees to utilize these allotments for livestock grazing. These permits contain specific guidelines for use, such as livestock numbers and livestock type, as well as authorized seasons/periods of use. Grazing use is managed in compliance with specific Guidelines for Livestock Grazing in Colorado and managed to achieve Public Land Health Standards.

Grazing allotments contain numerous range improvements, such as fences, springs, reservoirs, and water catchments. Maintenance of these range improvements is the responsibility of the permittee. The use of motorized routes by ranchers/permittees to access range improvements as well as to control livestock movements is crucial for the rancher in managing livestock. The permittee must be able to access their allotment by motorized conveyance for maintenance of range improvements, livestock management, as well as for the moving of sheep camps. The BLM has permitted off-road (i.e., cross-country) use in the past, except where prohibited, to the public and permittee as long as resource damage did not occur. This action enabled the permittee motorized access and allowed sheep camps to be placed well away from heavily traveled routes. Some of the routes utilized by the permittees are only accessible by crossing private or state land and are not available for use by the general public. Designations on certain routes were made to provide administrative and permittee access in the action alternatives. Some routes were closed to the general public because the route serves little purpose other than to the permittee. Closure will occur if overuse poses a potential threat to sensitive resources. Permittees may utilize routes that are open to the public and those routes which are designated as limited user. The amount of motorized routes available to the rancher/permittee is greater than the amount of motorized routes available to the public.

The initial travel management meetings by the Interdisciplinary Team assessed feedback received from livestock operators who had identified routes they utilize. Feedback from these permittees was taken into consideration when evaluating each route. It was often difficult to precisely assess for what purposes these routes were needed and to assess whether routes are used weekly, monthly, annually, or infrequently by the permittee because of the inability to predict when a route is needed. The team attempted to address route redundancy in an effort to close routes that were not needed by the permittee. The amount of use by permittees and/or BLM staff is typically not sufficient to cause substantial impacts. Specific routes necessary for range management may be causing or contributing to erosion or other problems. Some routes that are frequently utilized, as well as some routes that are infrequently used by the permittee potentially pose problems in that their slope, location, and/or design may be causing problems that need to be corrected. Some routes that are being proposed for closure were considered for closure due to these attributes.

Environmental Consequences

Consequences Common to all Action Alternatives: The permittees' will be allowed motorized access to routes limited to administrative/permittee use from two weeks before to two weeks

after the grazing season for the purpose of managing their grazing operation. The action alternatives include provisions for special approval on a case-by-case basis for necessary usage at other times. An example would be to construct or maintain range improvements. Permittees would have access to those routes open to motorized use by the general public.

Routes designated as closed will be closed to the public and permittees.

Grazing does not preclude other uses from occurring, such as hunting, hiking, horseback riding, and/or biking. Conflicts or impacts can and do occur to the grazing operation as a result of the many use. These impacts take the form of gates being left open, fences being cut, or disturbance to livestock by high levels of activity. Livestock can sometimes cause impacts to other users as well. Areas which are more readily accessible to the public and receive higher levels of recreational use are usually those areas which result in higher numbers of conflict/impacts. The level of conflict between recreational users and the impacts to livestock/grazing based upon projected growth in population and outdoor recreational activities is expected to double in the next 20 years.

Current Use (No Action) Alternative A: Permittee access of the public lands for management of livestock would remain unaffected under the Current Use (No Action) alternative. This alternative consists of 1,376.5 miles of motorized routes.

Direct and Indirect Impacts: The Current Use (No Action) Alternative A is the least restrictive alternative for the grazing permittee in that it continues to allow for cross-country off-road vehicle use to manage livestock. The permittee could continue to access remote areas by motorized vehicle for livestock management purposes so long as resource damage did not occur.

Cross-country travel or OHV use would not be restricted to 300 feet from the edge of the route, thereby enabling sheep camps to be placed farther from established routes than under all the Action alternatives. This would have a positive indirect impact on the number of conflicts associated with recreation users and sheep guard dogs by allowing sheep camps to be moved to more secretive areas away from well traveled routes. The 300 foot policy may reduce the conflict by restricting public access to many of the routes limited to permittee/administrative and the policy would allow sheep camps off of the route.

Cumulative Impacts: Future public use of existing routes and user-created routes would be expected to dramatically increase in the next 20 years as the population continues to grow. A cumulative effect of increased user-created routes would be increased access for the public into more remote areas resulting in a possible soaring number of conflicts between livestock and recreationists. These conflicts could possibly result in economic loss for the permittee in reduced weight gains due to livestock stress, possible human inflicted death or physical harm to the operator's livestock and increased vandalism to range improvements such as fences or wells which could impact the rancher economically in repairs. TMAs containing higher densities of travel routes and motorized access would be most affected. Areas which now receive relatively low levels of motorized use would experience a substantial increase in conflicts as recreation use increases.

Proposed Action Alternative C: This alternative, like the other Action alternatives, eliminates motorized cross-country travel and thereby is significantly different in its effects than Alternative A, the Current Use (No Action) Alternative A. The proposed action in comparison with the No Action stops cross-country travel. This alternative proposes that 947.5 miles of motorized travel routes be available to the permittee (travel use categories of General, ATV and Limited User). This is a reduction of 31% compared to the Current Use (No Action) Alternative A. Motorized routes that would be closed to the public and the permittee would account for 417.9 miles.

Each route was evaluated by the Interdisciplinary Team to determine whether it was necessary for motorized access by the permittee for livestock management purposes. The team evaluated each route for route redundancy to determine if other routes in the vicinity could be used by the permittee for access to a particular range improvement, etc. If the team felt that there were other alternative access routes available for the permittee to use then the team recommended certain routes to be closed.

Direct and Indirect Impacts: The indirect impacts of the Proposed Action Alternative C compared to the Current Use (No Action) Alternative A would be substantially fewer conflicts between recreational users and livestock operations where routes are closed to public use.

Ranchers would need to place sheep camps within 300 feet of designated routes. This would have an indirect impact on the number of conflicts between recreational users and sheep operations as sheep camps would be more visible/accessible to the public resulting in an increase in the number of conflicts with sheep guard dogs aggressively protecting their flock unless these camps are placed on routes limited to permittee/administrative purposes. Routes limited to permittee and administrative uses would reduce this conflict. The proposal to close 31.7% of the established motorized routes should decrease incidents between guard dogs and recreation users depending upon the placement of the sheep camps relative to open or limited routes.

Cumulative Impacts: Those routes designated as open could receive impacts from increased recreational use resulting in an increase in the number of conflicts between livestock operations and recreation users. Increased conflicts between livestock and recreationists could result in economic impacts to the rancher's livestock operation via reduced livestock weight gains and resulting economic hardship in repairing range improvement projects such as wells and fences. An increase in the number of incidents associated with gates being left open and fences being cut would continue to rise on those routes designated open. Cattle could possible then mix with other herds causing more economic hardship to the rancher in time and money to separate mixed livestock herds. Incidents between recreationists and sheep guard dogs may increase, but would be dependent upon a number of factors, including precisely where camps are placed relative to closed, open, or limited routes.

The significance of these cumulative effects would be of a low intensity in that only a few individuals would be economically affected rather than a large population. This alternative would significantly reduce these cumulative impacts in comparison with alternative A which proposed leaving open many more roads. The direct, indirect, and cumulative impacts to livestock operations would be minimal and not of a significant impact as long as mitigation measures are followed.

Minimum Access Alternative B: This alternative includes 776.4 miles of designated travel routes that would be available to the permittee for motorized access (travel use categories of General, ATV and Limited User) in comparison with the Current Use (No Action) Alternative A. In comparison with all other alternatives, this alternative is the most limiting in motorized routes.

Direct and Indirect Impacts: The direct affects to range management are essentially the same as discussed in the Proposed Action Alternative C except that the extent of direct and indirect impacts would be substantially reduced on those routes closed to motorized use to the public. Fewer user/livestock conflicts would occur in comparison with other alternatives as this alternative proposes closing the maximum number of routes to the public.

Substantially fewer routes would be available to the public, which would reduce the number of user/livestock conflicts on routes designated as limited use. Those routes remaining designated as open to motorized travel by the public are expected to have increases in use due to the closure of other public routes. The remaining open routes are expected to increase user/livestock conflicts. The extent of these conflicts is expected to be minimal.

The 300 foot limitation as well as the route closures would have a direct impact on the administration of grazing permits, in that time and funding would be needed to educate permittees and insure they comply with these stipulations. These impacts are expected to be minimal.

Routes designated as limited to non-motorized travel would have a direct impact on the permittees livestock operation (travel use categories of Bicycle and Foot and Equestrian). Sheep camps and bedding grounds as well as any range improvements that were once accessible to motorized vehicles via these routes would not be accessible. Ranchers that utilized sheep camps along routes designated for closure would need to find alternative sites to establish new camps where motorized access is available. Permission could be granted to a permittee who has a specific motorized necessity to utilize the limited access routes or cross-country travel outside of their designated use period. The impacts are expected to be minimal.

Cumulative Impacts: This alternative enhances resource protection and caters less to public accessibility. Cumulative impacts to range management are not expected to be substantial. Similar cumulative effects would still occur on those routes or areas where recreational users and livestock continue to meet. Economic setbacks to the rancher would still occur as described above but less frequently than the other alternatives.

Maximum Access Alternative D: This alternative includes 1,065.3 miles of designated routes available for motorized access to the permittee (travel use categories of General, ATV, Motorcycle and Limited User). A total of 305.7 miles of routes would be closed to motorized access. This alternative provides for the highest level of motorized travel among the Action alternatives. The total number of routes available to the public for motorized use would be reduced by 23%.

This alternative provides the permittee more access to the public lands. Fewer routes are closed to motorized vehicles than under the Minimum Access Alternative B, as well as under the

Proposed Action alternative therefore allowing the permittee easier access for livestock management.

The direct and indirect affects associated with this alternative are essentially the same as in all other action alternatives. The quantity of direct impacts to the rancher and his livestock is comparable between alternatives.

Cumulative Affects: The cumulative effects described above would be expected to occur at a higher frequency between livestock and recreational users resulting in higher economic impacts to the rancher/operator. These impacts would be attributable to time and money spent in repairing vandalized range improvements and loss in livestock weight gains and/or death or physical harm to livestock that again would result in an economic loss to the rancher.

Mitigation

The following mitigation measures would apply to all action alternatives:

- Permittees will need to be advised of closed and limited user routes and the affect of the 300 foot rule on livestock operations.

- The range specialists will need to monitor the permittees to ensure that they are complying with stipulations pertaining to route closures and in placing sheep camps. Monitoring permittee route usage for each allotment should be part of BLM's range management program.

- A continuing effort will be placed upon public education for the purpose and need for closing gates. All gates should be signed with "Close the Gate" signs.

- Requests for relocation of sheep camps will be considered if it appears that there is a potential problem with conflicts between recreation users and sheep guard dogs due to the proximity of sheep camps to routes open to the public.

RECREATION

Affected Environment

The San Luis Valley is located at almost 8,000 feet surrounded by the majestic Sangre de Cristo Mountains to the East and the South San Juan Mountains to the West. This high mountain desert is bisected by the Rio Grande and is host to a variety of diverse landscapes with numerous rivers, lakes, mesas, and canyons that provide an abundance of recreation opportunities.

Still relatively geographically and culturally isolated from the remainder of Colorado and

New Mexico, historical values and uses from the earliest settlers helped shape the uses of the surrounding public lands.

As far back as 11,000 years ago, this area attracted people to its ancient rivers and lakes and abundant resources. This Valley was the Northern most outpost of the Spanish Empire in the late 1700s and the following centuries brought miners, cattlemen, and farmers to settle around the rich natural resources. These early settlers brought new forms of transportation and the creation of several historical paths, trails, and roads on public lands that are nationally significant today.

This Valley has seen more changes on the resources in the last 20 years than in the last 11,000 years of human habitation. Faster more reliable transportation and road network has made the San Luis Valley more accessible to the larger communities to the East and South of the Valley. More and more, new residents or temporary visitors for short or extended recreation make excursions into the San Luis Valley. This is primarily due to the growth of the Front Range communities such as Pueblo, Colorado Springs, Denver, and the surrounding suburbs, and the growing cities of Albuquerque, Santa Fe, and other cities to the South.

There are new changes to the natural and cultural resources as increased visitation occurs. There are varying degrees of needs and desires for many different types of recreation. Some of the more popular areas include the Rock Garden, Penitente Canyon, Witches Canyon, Sidewinder Canyon, Zapata Falls, and Blanca Wetlands. These areas now have almost continuous use and over the last 20 years there has been an increase in user conflicts, resource damage and vandalism.

The creation of new roads and trails may increase visitation in the more popular recreation areas. Some of these have been created by recreation visitors partaking in the motorized cross-country travel that is allowed under the SLRA RMP and as a result were not planned, engineered, or maintained. Some of the existing roads and trails now popular with more recent visitors (e.g., hunters, 4WD, OHV enthusiasts, mountain bikers, hikers, and equestrian riders) were once access for mining, range, oil and gas, rock quarries, and other commercial activities.

Traffic counter data collected over the last 5 years indicates that the SRMAs have a fairly high visitation rate for the San Luis Valley. Blanca Wetlands recorded 4,500 vehicles in 2004 and Penitente Canyon and Witches Canyon recorded approximately 20,000 to 30,000 vehicles. Zapata Falls SRMA typically has high use due to it's proximity to the Great Sand Dunes National Park and Preserve. Traffic counter data has shown up to 70,000 vehicle visits in one year. This is nearly ¼ of the total visitors passing by on the way to the Great Sand Dunes National Park and Preserve, which has visitor days totaling more than 300,000.

Existing Recreation Planning Guidance: Travel management planning is closely linked to recreation planning and management in the SLRA. This plan will tier to the existing policies and recreation management decisions in the SLRA RMP and other subsequent recreation and corridor management plans. The following is a list of the most current recreation planning guidance:

1. The BLM's Priorities for Recreation and Visitor Services (WO IB 2004-072, 2/27/2004

2. The Unified Strategy (WO IM 2007-043, 1/9/2007

3. Appendix C, Land Use Planning handbook (Release 1-1693, 13/11/2005

4. Interim recreation Guidance (WO IM 2006-060, 1/5/2006

Penitente, Zapata Falls, Rio Grande Corridor, and Blanca Wetland Habitat Area are identified as SRMAs designated in the SLRA RMP dated 1991. The SRMA designation is for recreation management purposes and identifies areas where recreation activities are more prevalent and management activities will focus on experiences for recreation outcomes. This identification does not carry additional restrictions on OHV use. Some of the more substantive plans and management factors are described below as some of the SRMAs have overlapping designations with Areas of Critical Environmental Concern (ACECs):

The Rio Grande River Corridor Proposed Plan: This plan identifies the current river corridor as a SRMA where management emphasis is on intensive recreational activities while protecting the free flowing nature of the river and its associated wildlife values. These activities include float-boating, canoeing, fishing, hunting, and sightseeing, as well as other forms of associated additional tourism that might occur. The Proposed Action Alternative C recommends portions of the river eligible for "Scenic" classification, and another portion eligible for "Wild" classification. Recommendations for these classifications were made to Congress, and to date, no action has been taken to designate this river as Scenic or Wild.

Los Caminos Antiguos Scenic and Historic Byway: The Byway was designated by the State of Colorado in October 1991. The Byway partners (approximately 20 partners made up of Federal, state, private business, local, and regional government) is a 501(c)(3) organization with a board of directors and an independent executive director. The Byway, which stretches 129 miles from Alamosa to the New Mexico/Colorado border in the Southern part of the San Luis Valley, travels through backcountry public land.

Recreational Opportunity Spectrum (ROS): The SLRA RMP identifies ROS classes for the San Luis Valley that helps identify different interim recreation environments. Each class defines settings and opportunities and is a tool to assist BLM in planning for recreation management.

The following interim recreation opportunities exist in SRMAs for the San Luis Valley:

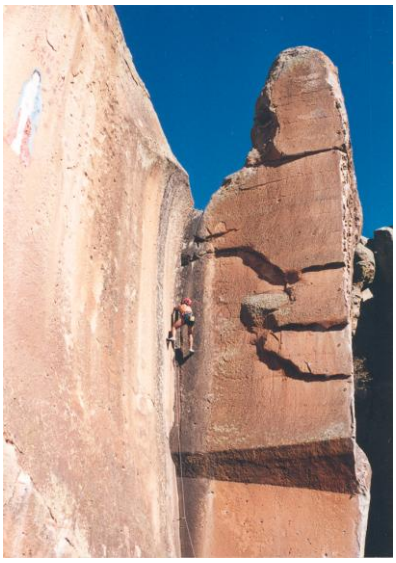
Table 64: Recreational Opportunity Spectrum in Existing SRMAs

SRMA Name	Classification	Acres
Blanca Wetlands	Roaded Natural	9,140
Cumbres and Toltec Area	Roaded Natural	5,141
Elephant Rocks Area	Rural	1,852
Penitente Canyon	Roaded Natural	1,808
	Semi-Primitive Motorized	3,498
Rio Grande Corridor	Semi-Primitive Motorized	6,170
San Luis Hills WSA	Primitive	10,888
Zapata Falls	Roaded Natural	4,581
ATV Open Areas	Rural	260.1

Planning efforts are to begin in 2007 for the McIntire/Simpson property. A ROS category will be assigned based upon the outcome of the analysis.

See Appendix 20 for map locations of ROS categories.

Recreation Niche: Another important recreation planning tool is to determine the recreation niche or distinctive features or qualities for a geographic area and management goals that help to preserve those qualities. The San Luis Valley planning area possesses several distinctive features and attractions that define its recreation niche.



This area is internationally known for the following unique recreation opportunities:

- The Los Caminos Antiguos Historic and Scenic Byway
- The Silver Thread Scenic Byway
- Sport Rock Climbing and Mountain Biking at Penitente Canyon
- Zapata Falls Interpretive Trail
- Old Spanish Trail
- Rio Grande Corridor

This area is regionally distinctive for:

- Extensive connectivity of BLM managed public lands and Forest Service.
- Major migratory bird and waterfowl corridor.
- Rio Grande Box Canyon recreation and watchable wildlife opportunities.
- The Old Spanish Trail.
- Blanca Wetlands, an extensive wetlands complex used for hunting, fishing, and bird watching.
- Penitente world class rock climbing and mountain bike opportunities.

Regional Scale Analysis: Another important aspect of niche identification and recreation assessment is to identify the existing recreational road and trail opportunities found within the regionally affected area. The regionally affected area was identified and recreation opportunities were analyzed within the San Luis Valley.

Numerous motorized and non-motorized opportunities were found outside the travel planning area. It is important to consider whether other areas are providing the same types of recreation. This helps to define the distinctive products that are provided within the San Luis Valley area and those not found within the market area.

Road and Trail Assessment: Qualifying and quantifying the benefits of a recreational travel network are inherently complex. Preferences and attitudes about what is fun, what benefits are

derived, and why people are engaging in those activities vary by individual, group, and even community. Most of the roads and trails for the San Luis Valley have historical use identified with them. This could be for purposes of gathering plants, animals, and using trails to connect communities and resources. This is especially critical in an area like the San Luis Valley where most of the residents still use public lands for subsistence (including the collection of plants for medicinal purposes or making traditional crafts such as dyes for wool and other uses). A growing population of visitors and people looking for recreation opportunities has begun to shape the public lands of the San Luis Valley as GIS data collection has shown a number of user created routes.

Recreation routes within the public lands were inventoried and analyzed. This analysis attempted to make un-biased recommendations concerning motorized and non-motorized recreational activities. Several key concerns were considered: potential user conflicts were evaluated; an evaluation of motorized impacts on non-motorized activities; the need for quality and quantity of motorized routes without undue impacts to the resources; attempted to locate and develop use areas; each sub-unit goals and DFCs were reviewed in an effort to meet those listed; and every effort was made to find a compatible open areas.

Most of the routes in the planning area were identified as moderate or high value for recreation, based upon a particular recreation attraction for the route. It became clear that many of the parallel routes, spur routes leading to private lands, and spur routes leading to range improvement were of little or no recreational value and could be eliminated with minimal impacts to recreation users and maximum benefit to other resources such as plants and wildlife. These recommendations were utilized in the development of the four alternatives for this TMP.

Recreation Management and Implementation: Appropriate recreation management is essential to adequately implement the decisions made in this TMP. The recreation guidelines and BLM's *OHV National Management Strategy for Motorized Off Highway Vehicle Use on Public Lands* provide direction for proper management. Some of the more important points include: educating recreationists; providing clear and consistent maps, signing routes, developing brochures; increasing partnerships with user groups and volunteer efforts; increasing on-the-ground presence; developing support facilities in appropriate locations; and developing recreation plans, capacity models, and adaptive management that will ensure that the DFC goals and the Public Land Health Standards are achieved.

Some of the more important characteristics for a good travel system for recreationists include: developing appropriate staging areas, parking lots, and trailheads; locating routes that access desirable features, overlooks, and recreation areas; providing loop opportunities rather than routes that dead-end; locating routes that will be maintained, and sustained; that offer a full day's recreation; and providing routes that offer different 4X4 levels.

Other Travel Related Issues

Target Shooting: Recreational target shooting is a popular activity on public lands within the San Luis Valley project area. Target shooting is allowed on public lands in conformance with all state, local, and federal laws associated with possession and/or use of firearms. Target shooting is an activity allowed on public lands in a dispersed and undeveloped manner. BLM's recreation

program does not have the authority to operate and/or manage formal target shooting ranges. Any formal request or community need for a target shooting range is handled by a land disposal or under the provisions of the Recreation and Public Purpose (R&PP) Act. Through the Interdisciplinary Team process, areas were not identified, designated, or opened as specific shooting areas. There were not any specific areas of concern due to the fact that there is a private rifle range shooting area adjacent to the Limekiln TMA that is used for this purpose. Each route was evaluated for recreational uses including recreational shooting, and where it was identified it was recorded and considered as a dispersed activity.

Off-Route Parking, Camping, and Game Retrieval Policy: The BLM under any action alternative will allow off-road motorized travel for parking and camping in Area #1 provided resource damage does not occur, unless the area has specific travel restrictions such as ACEC, WSA, or within an OHV designation area. Areas such as Blanca Wetlands and the Rio Grande Corridor have overlapping SRMA and ACEC designations. The Rio Grande Corridor and Blanca Wetlands, Elephant Rocks, Trickle Mountain, RaJadero, Los Mogotes, Cumbres and Toltec Railroad Corridor, and San Luis Hills ACEC's maintain the special restrictions. These restrictions include parking and camping in designated areas only and motorized game retrieval off designated roads is not allowed. Travel is limited to existing or designated routes only. The San Luis Hills WSA does not allow motorized access.

The number of visitors to the project area has increased in the last two decades due to overall population increase. There is significantly more pressure for use of the public land and the number of user-created roads and trails. The BLM is concerned about the number of roads that are being created under the current SLRA RMP designation of open (i.e., allowing cross-country travel) and the resource damage associated with this activity. Dwindling financial resources make it difficult for the BLM to continue with the area designation allowing motorized cross-country travel. A new plan is needed to help maintain recreation experience for all types of recreationists, while being protective of the sensitive resources.

Off-Route Mountain Bike Use: Mountain bikes are allowed to travel cross-country except within a special restriction designation areas such as ACECs or WSAs. Mountain biking can contribute to soil erosion, damage to riparian areas, conflicts with wildlife and other recreationists. Mountain bike use has been included in this analysis as a recreation activity that will be managed and monitored along with all other types of recreational use.

Recreation Trends

BLM does not have hard data attached to the roads and trails regarding use levels and comprehensive visitor use studies are not available (other than traffic counters in some locations). To make determinations by alternative for projected recreation uses, secondary data gathered from San Luis Valley local resources helped to determine use on public lands. The recreation uses, trends, and growth were gathered from the Recreation Management Information System (RMIS), the Longwoods Study, and other San Luis Valley Resources such as the

Development Resources Group, the Great Sand Dunes National Park and Preserve, Chambers of Commerce, and local business owners.

Visitation numbers are estimated to be approximately 1.5 million vehicles traveling on Highway 160 yearly although this area is still relatively remote. It has been estimated by the Longwood's Study that approximately 1/3 of these travelers are stopping to visit the San Luis Valley. This same study lists Penitente Canyon SRMA, Zapata Falls SRMA and Blanca Wetlands SRMA as some of the major tourist attractions. The most reliable source of data from the Great Sand Dunes National Monument and National Park and Preserve show that up until the drought and forest fires in 2002, the San Luis Valley was seeing a steady increase in visitation to the surrounding natural resource attractions. Between 2002 and 2004, there was a decline of visitors, with 2005 showing a slight increase. The major cities and towns of the San Luis Valley that may show an economic benefit from the recreation activities on surrounding public lands are Alamosa, Monte Vista, Del Norte, and Saguache (although this does not eliminate other small communities in the San Luis Valley). According to the 2002 Comprehensive Economic Development Strategy (San Luis Valley Economic Development District), Alamosa and Rio Grande Counties receive the largest share of income from tourist sales and services (such as food stores, wholesale trade, furniture, apparel, general merchandise, drug stores, and miscellaneous retail store products) with Alamosa at 58.9% and Rio Grande at 26.8%. Alamosa County has the largest lodging capacity with Rio Grande and Mineral Counties following.

The overall population of the San Luis Valley is growing slowly each year by 1.5%. In 2000 this was half the rate of the growth for the rest of Colorado (3%). The largest decade gains in population per county included Mineral County (48.9%), Saguache (28.1%) and Rio Grande (15.3%). Significant growth occurred specifically in the areas of South Fork (68.2%), Blanca (43.8%), Crestone (32.7%), La Jara (21%), and Center (20.6%). Slow growth or loss occurred in Antonito (-0.2%), San Luis (-7.6%), Monte Vista (-1.9%), and Saguache (-1.0%). The San Luis Valley's Hispanic population represents the highest percentage in Colorado at 46.5%. Conejos and Costilla Counties have the highest percentages of the Hispanic population (58.9% and 67.6% respectively) where most of the history, culture, and traditions of Spanish settlement have remained intact. The median age follows the nation's median age of 35.3, which is one year older than Colorado's median age. The population of people who are 62 years and older who reside in the San Luis Valley is 15.3% and the Colorado state percentage totals 9.7%. The fastest growing segment of population is between the ages of 45-54 with a 68.4% growth in just one year. It can be expected that the growth of the population is contributing to the overall growth of recreation activities on public lands in the San Luis Valley. (San Luis Valley Development Resources Group, 2002.)

The San Luis Valley hosts two colleges located in Alamosa: Adams State College and high altitude setting, and Trinidad State Junior College. Adams State College enrolls approximately 2,500 students per year and an additional 10,000 students in extended studies. A majority of the students are from other parts of Colorado (46%), while those from the San Luis Valley represent approximately 34% of the enrollment and students from out of state represent approximately 20% of the enrolled student population (2002 Comprehensive Economic Development Strategy-San Luis Valley Economic Development District).

The San Luis Valley provides a host of recreation activities that follow the nation's top activities (see Table 66). This does not preclude other activities and there are some activities that recreationists engage in locally that are not listed on the national study. For instance, extreme 4WD jeeping has been an activity that has grown in popularity in the last 10 years. The following is a national list of the top activities on public lands (Longwood Study, 2004):

Table 65: Top Activities on Public Land

Rank	Activity	Percent of Population
1	Viewing/Photography of Natural Scenery	55.1
2	Driving for Pleasure	53.4
3	Visiting Historic Sites	46.7
4	Viewing/Photography of Wildflowers/Vegetation	42.5
5	Viewing/Photography of Wildlife	41.9
6	Bicycling	39.0
7	Day Hiking	33.4
8	Bird Watching and Photography	33.3
9	Visiting a Wilderness/Primitive Area	33.2
10	Camping in Developed Area	25.4
11	Motorboating	24.4
12	Warm water Fishing	22.9
13	Mountain Biking	20.9
14	Visit Prehistoric or Archaeological Sites	20.6
15	Driving Off Road (4WD, ATV, Trail Bike)	17.5
16	Camping in a Primitive Area	15.4
17	Coldwater Fishing	13.1
18	Backpacking on Foot	10.8
19	Horseback Riding (all types)	9.8
20	Rafting	9.7
21	Canoeing	9.5
22	Downhill Skiing	8.3

Public lands account for approximately 12.1% of the total lands of the San Luis Valley. In many cases those lands are adjacent to other Federal lands such as the U.S.D.A. Forest Service and NPS. When taken together, the federal lands in the planning area make up over 50% of the total land mass.

The Great Sand Dunes National Park and Preserve information, used as an index to visitor origins, indicates that 64.5% of the visitors are from Colorado, 11.6% from Texas, 4.6% from New Mexico, 4.1% from foreign countries, 3.6% from Missouri, 2.8% from Oklahoma, 2.7% from Kansas, and even smaller percentages from California, Illinois, and other states. Texas, Oklahoma, and Kansas are the primary visitor base on the western end of the San Luis Valley and while the primary visitor base for Conejos and Costilla Counties is from New Mexico.

The BLM RMIS estimates that Zapata Falls is one of the most visited areas within the project area, recording approximately 79,000 visits annually, while Penitente Canyon is estimated to have approximately 25,000 to 50,000 annual visits. Other popular destinations such as Witches Canyon and Rock Garden experience fairly high levels of visitation (up to 5,000 to 10,000 people per year). The relatively high use seen in these latter two areas is probably due to increased use in Penitente Canyon, the result of which has been the displacement of local rock

climbers to these other two areas which offer rock climbing opportunities. The San Luis Hills WSA experiences close to 1,300 visitors per year and the nearby Rio Grande Corridor can probably expect to see similar visitation numbers. Not all BLM sites are monitored. Areas of potentially high recreation use including SRMAs are monitored each year for significant changes in visitation by using traffic counters, campground and day use receipts.

It is certainly possible that a number of these visitors have visited one or more of these sites while in transit to other recreation destinations. For instance, due to the proximity of Zapata Falls SRMA to the Great Sand Dunes National Park, it is expected that Zapata Falls day use area could very well expect to have similar number of visits that the Great Sand Dunes National Park might expect. The RMIS indicates roughly 70,000 visits occurred at Zapata in 2003. Over the last five years this number has grown by roughly 9%.

National trends can be significantly different from what may be happening regionally or locally. Drought situations or natural disasters can change how and where people use their public lands. The San Luis Valley trends can take several years to catch up to the nationwide trends. Previous to the summer of 2005, there had been a drop in use along the Rio Grande Corridor area where visitors raft, canoe, and kayak. This decline was primarily to drought conditions. Last year there was an increase in the number of visitors with a renewed interest in rafting in the Rio Grande Corridor area and areas further north toward the town of Creed. The Penitente Canyon is expected that sport climbing will stay the same or rise.

Proximity of Public Lands to San Luis Valley Communities

All of the San Luis Valley SRMAs and the Rio Grande Corridor are located in fairly remote areas. The San Luis Valley is made up of several small communities that serve as jumping off points to different BLM SRMAs. The communities closest to Zapata Falls and Blanca Wetlands that may have direct impacts from changes to travel management would include the town of Blanca and Ft. Garland in Costilla County, and Alamosa, Mosca, and Hooper in Alamosa County. Penitente Canyon is located in Saguache County and the changes proposed in travel management are expected to have the most impacts to Del Norte, Center, or Monte Vista (located in Rio Grande County). There are many other BLM areas that will be affected by the travel management decisions in this plan. Their visitation levels are relatively low, their use is rather dispersed, and/or they are very remote, the effects of the decisions are not expected to have significant effects on any of the surrounding communities. The expectation that there may not be any significant effects to the SRMAs closest communities could be due to the fact that many of these communities do not provide some of the products that recreationists may find in larger cities, as a result the economic an social impacts to the small communities remain low or unchanged.

Environmental Consequences and Mitigation

Current Use (No Action) Alternative A: The routes available in this alternative offer high levels of motorized recreational use but offer limited non-motorized uses.

This alternative would allow continued uses of the existing open and inventoried roads and trails, and open cross-country uses in Area 1 (389,279 acres). Any road or trail that is open and

inventoried would remain open. It is reasonable to determine that new permanent routes would be created if users are allowed to continue cross-country travel. The following is a list of current non-motorized and motorized access:

- 1,328.7 miles of motorized recreational access.
- 223.4 miles of non-BLM (primarily county roads) providing motorized access.
- 84.3 miles of non-motorized recreational access

There would be 29.1 miles of designated mountain bike routes (included in the number of miles of non-motorized recreational access).

The OHV trends under the Current Use (No Action) Alternative A are expected to continue in each of the Extensive Recreation Management Areas (ERMAs). It is expected that there will be a rise in ATV use across public lands as indicated by national trends. A review of Colorado Division of Parks and Outdoor Recreation OHV registrations shows an increase in registrations processed from 1990/91 of 11,744 to 130,784 in 2007/08 which is an increase in 17 years of 1,114%. The annual increases during this period vary from 4% to 33%. It is expected that user-created routes will continue to appear with the anticipated increase in OHV use in Area #1 that allows for cross-country motorized travel.

The Rio Grande Corridor and Blanca Wetlands, Elephant Rocks Trickle Mountain, RaJadero, Los Mogotes, Cumbres and Toltec Railroad Corridor, and San Luis Hills ACECs maintain the current special restrictions. The ACEC restrictions include parking and camping in designated areas only and no motorized game retrieval off designated roads. Travel is limited to designated/existing routes only. The Current Use (No Action) Alternative A anticipates increased use. Unmanaged off-road use within close proximity to the SRMAs is expected to increase and could potentially change the recreation characteristics of the adjoining SRMAs. Visitation to the Penitente Canyon for climbing is expected to rise slowly and follow the national trends. Penitente Canyon is noted for its diverse mountain bike opportunities in addition to Climbing. Trails include single track to 4WD routes. Biking trends in the San Luis Valley indicate that there may be increased use on the more technical trails as well as additional use on the 4WD roads and moderate trails.

Visitation to the Blanca Wetlands and the San Luis Hills WSA would be expected to increase under the Current Use (No Action) Alternative A due to trends that indicate driving for pleasure and photography are among the top recreation activities nationally. Visitation to the Rio Grande Corridor can expect to increase. The visitation trends are subject to environmental conditions, such as drought. In the past, rafting, canoeing, and kayaking have been reported to have seen a decrease in use. The number of visitors floating the river in 2005 was up as there was a significant amount of spring run-off. If drought patterns continue, it is expected that use will drop. If the San Luis Valley begins to come out of drought visitation is expected to increase. There may be additional user-created roads to access the river. As use increases and more and more visitors are seeking solitude, there may be potential issues with trespass along the river as visitors move to other areas of the river to launch boats or camp. Zapata Falls, due to its proximity to the Great Sand Dunes National Park and Preserve, is expected to experience increased visitation.

The rock crawling area for the Limekiln TMA near the Hathaway Stone Quarry is included as part of this TMP and identifies 7.65 miles of rock crawling routes under the Current Use (No Action) Alternative A with loop routes that allow for jeeps with modified suspensions to rock crawl. This sport is increasing in popularity. This sport is significantly different than the 4WD drivers who prefer to travel roads and view scenery with some limited level of challenge. The Hathaway Stone Quarry Area is gaining in popularity. It probably has not reached its peak in terms of visitors. Word of mouth is bringing more people each year, with people coming from Arizona, California, New Mexico, Oklahoma, and Texas. There are additional groups that come from Mississippi and Florida as well as from Colorado Springs, Pueblo, and Gunnison. Current gatherings at the Hathaway Stone Quarry site for Rock Crawling reported 28 participants and spectators. This area is open from May until November each year (approximately 36 weekends per year) and a typical weekend event can usually attract 4-6 rock crawling vehicles and at least 10 spectators. These events happen over the weekends and are most popular during long weekends when visitors plan on a 3-4 day weekend. The only other site for Rock Crawling in the San Luis Valley is approximately 75 miles from the Hathaway Stone Quarry on Mount Blanca (called the Como Lake Trail). Visitors from out-of-state interested in rock crawling would not stop at the Como Lake Trail, as it does not provide the degree of challenge that the Hathaway Stone Quarry Area does. The Como Lake Trail is used more by the local residents with stock or medium suspension vehicles for day use (although it is not uncommon to see these vehicles sometimes camped at the top of the Como Lake Road). Without the Hathaway Stone Quarry Area, the participants of rock crawling with heavier suspensions would move on to other locations such as Farmington, New Mexico, Penrose (near Colorado Springs), the Carnage Trail in Salida, or onto Montrose (where there are a significant amount of BLM rock crawling opportunities). Visitors with rock crawling vehicles tend to stay in Monte Vista, Alamosa or camp at the trailhead for 1-2 nights with the Hathaway Stone Quarry rock crawling routes in place, and then stay for another day to drive the Como Lake Trail on their way to other locations. Roughly half of these recreationists bring large travel trailers or motor homes for accommodations. It is not uncommon for a group as large 25-30 people and vehicles to travel from Arizona, Nevada, or many of the aforementioned places to spend 3-4 days in the valley to participate in rock crawling. There are approximately 360 participants using the area as dispersed recreation based upon 10 visitors per weekend. Three large events per season with 90 participants each are planned by the local enthusiasts. This brings the estimated total participation to 630 individuals per year. Once this area has become officially designated and recognized it is possible that these numbers would double on the weekend, thereby reaching 20 vehicles each weekend. This would raise the yearly totals by 200. Eighty percent of these visitors and participants are non residents. Twenty-five percent of the non-residents are from out of state and approximately 75% come from the areas of Colorado Springs, Pueblo, and Gunnison.

The San Luis Valley has many areas that are accessible by highway vehicles or OHV. Almost all areas are affected by vehicular noise. There are only limited opportunities beyond the SRMAs for solitude for non-motorized recreation such as hiking, horseback riding, and mountain biking. The Current Use (No Action) Alternative A by continuing to allow motorized cross-country travel provides for limited non-motorized recreational. This is in contrast to all of the action alternatives which do not allow cross-country travel and which only allow motorized travel on designated open routes. Motorized recreation under the current management situation (i.e., Current Use (No Action) Alternative A) has increased dramatically within the Limekiln,

Elephant Rocks, and Upper Saguache ACECs. The Current Use (No Action) Alternative A by allowing motorized cross-country travel generally does not address, manage, or regulate the number of user-created routes. The Rio Grande Corridor has had increased pressure from noise, dust, and traffic from increased OHV use, which is due the private land development adjoining the public lands and the general increased OHV use. The Current Use (No Action) Alternative A does not provide any specific motorized loop routes to enhance Roaded Natural types of recreation activities.

Overall, this alternative provides a high number of motorized access routes. It does little to address the many factors that could maintain recreation reduce conflicts and impacts to other users, and the resources. Many of the routes left open are dead end routes or have similar parallel routes. It does not adequately provide for loop routes, adequate parking or staging areas; routes are not placed in sustainable locations and desirable recreational areas for diverse visitors are not incorporated in a travel system. This alternative does not appropriately cover all aspects of a well planned travel system.

Summary: The Current Use (No Action) Alternative A fails to provide a diverse recreation opportunity for non-motorized and motorized activities and does not fully address multiple uses.

Proposed Action Alternative C: This alternative would provide for moderate levels of motorized recreational use and opportunities for non-motorized recreational use under an improved planned travel system than what exists under the Current Use (No Action) Alternative A.

- 650.9 miles of motorized recreational access (travel use categories of General and ATV).
- 223.4 miles of non-BLM (primarily county roads) providing motorized access.
- 387 miles of non-motorized recreational access (travel use categories of Bicycle, Foot, and Equestrian, and Limited User)

There would be 64.7 miles of designated mountain bike routes (included in the number of non-motorized recreational access). This would be a 71% increase in the number of miles from the Minimum Access Alternative B.

This alternative would designate 678 fewer miles of motorized routes than the Current Use (No Action) Alternative A. The loss of approximately 51% of the motorized mileage reduces the quantity of motorized routes, but provides a more logical layout for loops which are specifically desired by recreationists. The routes that are designated for closure are primarily short spurs, parallel routes, and old range improvement and oil and gas access roads that dead end. Much of the lost mileage is offset by improvements to the travel system (route conversions, i.e., those routes that have been converted from motorized to non-motorized use). This alternative provides for loop routes, adequate parking, staging areas, routes located in better locations (i.e., locations that are selected for better environmental protection or safe recreational experience), and improved motorized and non-motorized opportunities to help reduce conflicts between motorized and non-motorized activities. The greatest mileage decrease in motorized routes would take place in the Alamosa River TMA, with a reduction of approximately 126.3 miles (53%) as compared to Current Use (No Action) Alternative A. The area with the second greatest reduction in motorized routes is the San Luis Creek TMA. There would be approximately 56.3

miles (70%) overall reduction of motorized routes for this area when compared with the Current Use (No Action) Alternative A.

This alternative only slightly reduces access to dispersed vehicle-based camping sites and other vehicle related activities.

The Proposed Action Alternative C would provide non-motorized recreation opportunities by providing 302.7 more miles (359%) of dedicated non-motorized access than the Current Use (No Action) Alternative A. The Alamosa River TMA would gain approximately 8.8 miles of non-motorized routes (currently has none) and the Trickle Mountain OHV area would gain approximately 7.6 miles (65%) of non-motorized routes. The Proposed Action Alternative C would be compatible with the ROS categories.

The rock crawling area in the Limekiln TMA, near the Hathaway Stone Quarry identifies 6.43 miles of rock crawling access routes with loop routes for technical "rock crawling" (see Appendix 7B). The proposed rock crawling activity access, loop routes and connecting routes remain intact. Two short cuts, LK23120 and LK23121 are closed. The route and loop routes made up of LK23125 and LK23124 are closed due to the sensitive nature of the rock and a nearby cultural site. A minimum of four areas that contain loop routes are provided for this activity. It is possible that recreationists will continue to seek other areas to participate in rock crawling activities instead of the Hathaway Stone Quarry. For example, the rock crawling participants and associated visitors will continue to use the Como Lake Road.

Summary: Relative to the Current Use (No Action) Alternative A, this alternative provides a designated route system that has been specifically designed to provide for the motorized public as well as non-motorized visitors and improves the San Luis Valley transportation system on public lands. These improvements to recreational opportunities are made while concurrently improving the level of environmental protection.

Minimum Access Alternative B: The routes available in this alternative offer more non-motorized recreational use than the other alternatives, but limited motorized uses. This alternative would allow continued uses of some of the existing open and inventoried roads and trails, but would not allow open cross-country uses in Area #1 (389,279 acres). The following is a list of non-motorized and motorized access:

- 400.3 miles of motorized recreational access.
- 223.4 miles of non-BLM (primarily county roads) providing motorized access.
- 443.4 miles of non-motorized recreational access

There would be 46.1 miles of designated mountain bike routes (included in the number of non-motorized recreational access).

This alternative will place the greatest emphasis on protecting sensitive resource values (such as riparian, wildlife, and vegetation), would reduce the amount of open routes for motorized travel, and increase the amount of non-motorized travel. "User-created" routes, a number of parallel routes, and routes causing resource damage would be closed to motorized use. This alternative would designate 569.3 fewer miles of motorized routes than the Current Use (No Action)

Alternative A. The mileage loss takes place predominantly in the Alamosa River TMA. There is a reduction of 158 miles from the Current Use (No Action) Alternative A to the Minimum Access Alternative B. This TMA includes the RaJadero ACEC, the Mogotes ACEC, and the Cumbres and Toltec Railroad Corridor ACEC. The area with the second greatest reduction would be the Tracy TMA, where there is a 90.3 mile reduction of motorized routes. There are other additional areas that would have a reduction of motorized routes. They are widely dispersed throughout the project area.

The loss of approximately 928 miles of the motorized mileage substantially reduces the amount of motorized use. This would potentially cut motorized use by 70% from the Current Use (No Action) Alternative A. This may cause impacts to other motorized areas and may increase user conflicts by concentrating motorized uses on the remaining routes. This alternative would substantially reduce dispersed motorized car-camping and other vehicle related motorized recreation activities as well as OHV uses.

The Minimum Motorized Access Alternative would designate 359.1 additional miles of non-motorized routes than the Current Use (No Action) Alternative A. Most of the mileage increase would come from the conversion of existing motorized routes to non-motorized uses. The gain in non-motorized mileage would slightly increase opportunities for hiking, horseback riding, and mountain biking. The largest increase in the non-motorized routes is in the Trickle Mountain OHV Area, with an increase of 6.9 miles (63%). The second largest area that would have an increase in non-motorized routes would be the Alamosa River TMA where there would be an increase of 4.2 miles (currently none) of non-motorized routes from the Current Use (No Action) Alternative A.

This alternative is compatible with the ROS categories for all the sub-units.

For the Limekiln TMA, the rock crawling area near the Hathaway Stone Quarry identifies 1.29 miles of rock crawling access routes under the Minimum Access Alternative B without loop routes for technical “rock crawling” (see Appendix 7A).

Summary: The Minimum Access Alternative B would reduce the number of routes available for motorized access. Most of these routes do not have loop connections, are spur routes, and lead to areas where there is no outlet. Closing a large portion of the routes still leaves many adjacent routes open within the vicinity of closed routes. Almost all areas will still be affected by the sounds of motorized visitors. It is expected that there would only be slightly more opportunities for solitude for visitors who prefer non-motorized recreation opportunities such as hiking, horseback riding, and mountain biking.

Maximum Access Alternative D: The routes available in this alternative offer more motorized recreational use than the other action alternatives but limit non-motorized uses. This alternative would allow continued uses of most of the existing open and inventoried routes, but eliminate open cross-country uses. The following is a list of non-motorized and motorized access for the Maximum Access Alternative D:

- 892.8 miles of motorized recreational access.
- 223.4 miles of non-BLM (primarily county roads) providing motorized access.

- 257.2 miles of non-motorized recreational access.

There would be 67.4 miles of designated mountain bike routes (included in the number of non-motorized recreational access). This would be more than double the miles from the Current Use (No Action) Alternative A.

This alternative will place emphasis on 4X4 recreation and motorized travel. This alternative differs from the Current Use (No Action) Alternative A in that it is a planned travel system. The Maximum Access Alternative D would designate approximately 492.5 more miles than Minimum Access Alternative B. The increase in the amount of motorized mileage would maintain the recreation for visitors who prefer motorized uses and helps to reduce user conflicts and safety issues by dispersing motorized use, providing more loop routes, and increases the vehicle-based camping and other vehicle related recreation activities. There would be a decrease in the amount of motorized routes as compared to the Current Use (No Action) Alternative A. Due to the more dispersed nature of motorized use, there may be an increase in visitor conflicts between motorized and non-motorized visitors. The Alamosa River TMA would have the largest decrease in motorized routes by 57 miles (24%). The next largest decrease in motorized routes would be in the Tracy TMA with 54.5 (48%) miles of reduction as compared to Current Use (No Action) Alternative A.

The Maximum Motorized Access Alternative would designate 172.9 additional miles of non-motorized recreation routes than the Current Use (No Action) Alternative A. The greatest amount of this increase would take place in the Limekiln TMA, where there would be an increase in non-motorized recreation routes by 4.4 miles (94%). The next highest increase in non-motorized routes would be in the San Luis Creek TMA with an additional 2.9 miles (47%).

This alternative is compatible with the interim ROS categories.

The areas that may see an increase in solitude for non-motorized visitors are more likely to be affected by the sounds from motorized visitors because this alternative still leaves many adjacent routes open within the vicinity of closed routes.

The rock crawling area near the Hathaway Stone Quarry in the Limekiln TMA, identifies 7.27 miles of rock crawling access routes under the Maximum Access Alternative D with loop routes that allow for jeeps with modified suspensions to “rock crawl” (see Appendix 7C). The Hathaway Stone Quarry Area is increasing in popularity. A moderate level of access 7.27 miles of open routes may support 12-15 vehicles. It is still possible that people will continue to find other areas to participate in this activity in addition to the Hathaway Stone Quarry. The participants and associated visitors may continue on to the Como Lake Road during their stay. It can be expected that roughly 12 vehicles would participate in this activity. There would be approximately 432 participants per weekend using the area as dispersed recreation. Three large events per season with 90 participants would be planned by local enthusiasts. The total annual participation would be 522 participants and spectators.

Summary: The Maximum Access Alternative D would reduce non-motorized access. This alternative provides for additional motorized routes. It omits some of the factors that provide for

high quality motorized recreation. It provides instead for an increase in the mileage of open non-motorized routes.

Effects Common to all Alternatives

During the Interdisciplinary Team process, special consideration was given to leave open to the extent reasonable (i.e., taking into consideration other needs, as well as statutory requirements, the need to protect sensitive resources) all routes that connect to designated Forest Service roads and trails (creation of loops).

Off-Route Parking and Camping: Motorized vehicles are allowed to drive to 300 feet off the road for dispersed recreation, provided there is no resource damage. ACECs, WSAs, or areas with OHV plans completed have special restrictions in place. The distance that motorized vehicles can drive off existing routes for parking and camping would be limited to a single perpendicular distance of 300 feet from the edge of the route (no parallel travel at a distance of 300 feet to a route). The Rio Grande Corridor and Blanca Wetlands, Elephant Rocks, Trickle Mountain, RaJadero, Los Mogotes, Cumbres and Toltec Railroad Corridor, and San Luis Hills ACECs maintain the current special restrictions. ACEC restrictions include parking and camping in designated areas only and no motorized game retrieval off designated roads. Travel is limited to existing routes only.

Game Retrieval Policy: Motorized game retrieval would not be permitted on public lands in the San Luis Valley.

Rock Climbing: The majority of rock climbing in the San Luis Valley is focused around Penitente Canyon and Limekiln area. There is not expected to be a change in this activity as the routes to the developed parking area remain open under all alternatives.

Hiking: This activity occurs in every TMA and is not restricted to trails. There may be a slight change in hiking recreation. In the Minimum Access Alternative B and Proposed Action Alternative C there is a possibility that visitors will experience a decrease in the sights and sounds from humans due to limited motorized access. It is expected that the change will be minimal and not enough to warrant a change in the interim ROS category.

Cross-Country Skiing: Cross-country skiing is open across public lands throughout all alternatives.

Equestrian Use: Equestrian use is open throughout all alternatives anywhere on public lands except at Blanca Wetlands where foot travel is restricted due to wildlife concerns.

Snowmobiling: Snowmobiles will be limited to designated open motorized routes (see Appendix 6). Snowmobiling would be allowed off designated motorized routes in one area near Villa Grove of the

San Luis Creek TMA. A closed area exists in the same general location which limits this type of use for all alternatives due to the Gunnison sage-grouse.

Blanca Wetlands: Restricted from February 15 to July 15 for all travel activities to protect nesting birds. During the open season (from July 15 to February 15), all forms of travel are allowed on main system roads. The service routes only allow foot travel, horse travel, and mountain bikes during the open season. Motorized travel is not allowed on the service routes during the open season.

Changes to travel management policies state-wide in Colorado are expected to have some impacts to rural areas such as the San Luis Valley. Adjoining National Forest and public lands on the western slope and the Front Range are in the process of evaluating their travel management plans. Any changes to the adjoining FS or public lands may have caused motorized and non-motorized users to seek similar activities on other public lands, thus displacing them. This may have caused an increase in motorized and non-motorized users in the San Luis Valley. Informal field visits with recreationists have indicated that ATV and mountain bikers have looked for new areas to participate in these activities given the perceived growing density of these activities on adjoining public lands. Population growth could have contributed to new users here in the San Luis Valley given the increase in these activities on all public lands.

Cumulative Effects for Recreation: Road systems can have a significant social affect on recreationists and how they experience the landscape. The planning area contains 7,892 miles of routes, or approximately 2.1 miles of route per square mile. It is estimated that about 1,679.2 miles of this occurs on public lands, which equates to roughly .5 miles of route per square mile. Adjacent areas to the public lands can provide a large number of routes on private land (as surrounding lands are subdivided and developed), Federal, and State Lands.

The Current Use (No Action) Alternative A has the highest motorized travel potential due to unrestricted travel regulations. This has the potential to compound noise, dust, and influence the attractiveness/sense of place for recreationists as many routes go to the same locations. This can continue to have cumulative effects on areas that have fewer roads if they are in areas with a high density of roads.

All action alternatives have the potential to improve recreation access and activities because new travel guidelines will provide loop connections, reduce dead-end routes and spur routes, and provide better recreation for visitors who prefer motorized and non-motorized adventure. This will vary by alternative as some alternatives provide more open roads than others. All current restrictions that apply to ACECs, WSAs, and areas with OHV plans will remain in place.

TRANSPORTATION

Affected Environment

The existing BLM route network consists mostly of low standard native surface routes that are linked to county, state, and Federal highways. The majority of existing routes were established to access and serve specific purposes, including such activities as mining, grazing, timber, wood cutting; construction and maintenance of power transmission, telephone lines, construction of flood control "check dams", irrigation ditches and pipelines; and for completing "chaining"

operations, wildfire suppression, as well as many routes created legally by users in the last 20-25 years under the current prescription that allows motorized cross-country use. The landownership pattern has changed, with BLM acquiring lands that had previously been privately owned. Some routes were developed with BLM involvement while others were not. Many routes were developed for intermittent or temporary access and were not designed or constructed to carry high traffic loads and sustained amounts of use.

Some of the routes have been in existence for fifty to sixty years, based upon research involving old maps and aerial photos. Most of these routes were originally designed to serve the functional needs of a relatively small number of people. Many of these routes have been improved over the years to accommodate changes in the types of vehicles and to respond to the growing route usage for a variety of recreational purposes.

BLM routes serve both functional and recreational needs, but in recent times there has been a much higher emphasis on the latter than existed fifty years ago. Routes are still needed to access power lines, build and maintain fences for grazing, etc. Routes are needed for serving a wide variety of recreational needs in accordance with the multiple use mandates of FLPMA.

One of the first steps in the planning process in preparing for the SLRA TMP was to conduct a thorough inventory of the all of the existing routes. This inventory utilized global positioning satellite (GPS) and GIS technologies to accurately locate and characterize the routes. Virtually every route was driven, ridden, or walked to record and characterize them. Other less accurate means were used to capture the routes in areas that could not be physically reached for utilizing GPS, including aerial photo interpretation and the transference of existing transportation data from other reliable sources.

The travel way classifications used in Table 66 describe the physical characteristics of the routes in terms of width, surface, and the type of traffic they are intended to accommodate. The routes were classified to characterize them in terms of designated uses by the variety of travel uses. The travel uses classification system used conforms to the standards adopted by the Colorado Natural Resources Group, except for the non-BLM class. These categories were developed specifically to address routes that do not fit within the standard Colorado Natural Resources Group classification system.

Table 66: Existing Routes Travel Way Classes

Travel Way Class	Class Description	Mileage
Class 3	Light duty maintained - dirt	87.6
Class 3b	Light duty maintained - graveled	10.1
Class 4	Primitive Road	866.5
Class 5	Primitive 4WD	401.5
Class 5x	Extreme Jeep	1.6
Class 6a	ATV	8.6
Class 6b	Single track - motorized	0.002
Classes 6d & 6e	Single track - non-motorized	36.1
Class 7	Closed Road	42.8
Total		**1,454.802**

Routes impact soils, vegetation, water, air quality, wildlife habitat, and other resource values. Poorly designed and maintained routes promote erosion that degrades streams and wetlands with associated reductions in fish habitat and productivity. The construction of new routes increases the impacts to soils and watersheds by exposing more areas of bare soil that are subject to erosion.

The frequency and intensity of work required to maintain a given route is directly related to the overall physical makeup of the route (e.g., soil type, slope, vegetative cover, aspect), as well as the amount and type of traffic. Routes with high levels of traffic, and routes that are used for modes of travel that cause high amounts of disturbance to the traveling surface, require more maintenance than routes with low levels of use and/or routes that are used for low impact modes of travel. All of these factors were considered in analyzing and comparing the environmental impacts and required maintenance needs of the travel management alternatives.

The BLM maintains an average of 70 miles annually of the BLM system routes as designated on the official BLM Transportation Map within the San Luis Valley public lands. All of these routes are Travel Use Class (General), and include Class 3, 3b, and 4 travel ways (see Table 67). Scheduled maintenance consists of using heavy equipment to blade the surface, reconstruct water bars, and clean drainage turnouts. Seventeen miles of these routes are maintained annually by BLM, while others are only maintained every two or three years. Examples of routes receiving annual maintenance include the main access routes into areas such as Blanca Wetlands Habitat Area, Poncha Loop, and Greenie Mountain Road. Examples of routes that are maintained every two or three years include Cabin Draw, Poison/Dry Gulch Loop, and Ra Jadero. The average annual cost of scheduled maintenance in the San Luis Valley planning area, including equipment contracting and contract administration costs, is approximately $21,000.

BLM performs maintenance and improvements of roads by other means in addition to scheduled maintenance, including deferred maintenance and capital investment programs, and in conjunction with individual project activities such as fuels reduction projects, wood products sales, and fire suppression. Some route maintenance is performed by authorized holders of BLM permits.

The planning area contains only a few developed trails. The inventory contains approximately 36.5 miles of non-motorized single track routes. Thirteen and four tenths miles, are constructed single track foot and horse trails. The other 22.8 miles consist primarily of travel routes created by cattle/mountain bikers/horseback riders/timber harvest roads that are used by visitors as single track trails. The construction, maintenance, and improvement of trails is primarily accomplished through volunteer efforts by organizations and groups affiliated with various uses (e.g., horseback riding, rock climbing, ATV, and motorcycle riding) with minimal use of BLM appropriated funds.

All of the action alternatives would implement route designations that would require the expenditure of BLM funds from various sources to perform the tasks commensurate to the needs of the alternative. Such tasks include:

- Education of the public through media sources, school presentations, and other forms of public information.

- Providing management presence and enforcing travel designations.
- Installing and replacing travel management signs.
- Maintaining existing routes.
- Reconstructing or improving existing routes.
- Retro-fitting or converting routes (reducing widths of existing travel ways to fit designated travel uses, such as converting a jeep route to a bicycle trail).
- Installing and maintaining closure devices (e.g., gates, boulders, earthen berms).
- Decommissioning abandoned routes.
- Constructing and maintaining trailhead facilities including kiosks with maps, brochures, etc.
- Preparing travel maps and brochures.
- Monitoring and evaluating use and implementing needed travel management changes such as design, signage, or additional restrictions of levels of use, season of use, or types of use.

Appendix 21 displays the estimated implementation costs for each alternative. The cost for implementation of the Proposed Action Alternative C is estimated to be $875,587, the cost for the Minimum Access Alternative B would be $1,091,645, and the cost for the Maximum Access Alternative D would be $731,515. These costs include signage, reclamation, labor, seeding, seed bed preparation, signs, posts, hardware, scarification/ripping, tank traps, rock boulders used as parking barriers, and ditch deepening.

Environmental Consequences:

Common to All Action Alternatives: All motorized travel would be limited to designated routes (except for the two areas designated as open). Bicycles and mechanized vehicles would be limited to motorized, mechanized, motorcycle, bicycle, and ATV routes, except some routes designated as closed or limited to permittee or administrative which are signed open for mechanized users.

Current Use (No Action) Alternative A: The existing network of routes would remain virtually unchanged. The use of motorized vehicles would continue to be limited to existing routes in the ACECs and WSA and cross-country travel would continue in Area #1. Impacts to resources and existing routes would gradually increase as recreational use increases at the rate of the population growth and at increased rates where other BLM Field Offices and Forests implement more restrictive motorized uses moving those users to the San Luis Valley. Impacts to the transportation system would increase with this increased public use, requiring more scheduled maintenance costs and rehabilitation/reconstruction costs, making this potentially the most expensive alternative. Immediate need for additional route construction or maintenance would not result. Maintenance would continue at minimal levels by permittees, BLM, and volunteer groups through grants and other outside funding sources. Routes that have serious resource damage or conflicts would be closed through emergency measures as allowed by 43 CFR 8340.

Proposed Action Alternative C: Most routes that have resource damage or conflicts would be mitigated, limited, or closed to minimize those problems. Maintenance costs (due to fewer

routes being left open, only 68.8% of those currently in use) would fall between the Minimum Access Alternative B and Maximum Access Alternative D. Several existing route segments are proposed for modification to bicycle and ATV routes to avoid private lands and provide loop rides by using existing routes.

Minimum Access Alternative B: Most routes that have resource damage or conflicts would be closed or limited in use to minimize those problems. Maintenance costs would be lower than the Current Use (No Action) Alternative A due to fewer routes being open (56.4% of those currently in use) for recreational use. Enforcement of closures could result in increased need for law enforcement. Additional law enforcement will not be available without additional funding.

Maximum Access Alternative D: Fewer routes that have resource damage or conflicts would be closed or limited in use than the other action alternatives. Additional maintenance will remain unscheduled as current and potential funding will be inadequate to maintain all open routes. Relative to the Current Use (No Action) Alternative A, this alternative only leaves open 77.5% of the routes currently in use under the Current Use (No Action) Alternative A. It is reasonable to expect that this alternative will be commensurately less expensive to implement than the Current Use (No Action) Alternative A.

Mitigation

The following mitigation measures would apply to all action alternatives:

- Provide education of the public through media sources, school presentations, and other forms of public information.

- Develop maps, brochures, and kiosks displaying the designated route system and the recreation opportunities.

- Develop agreements with volunteer groups and individuals to provide maintenance and construction.

- Develop a monitoring plan to monitor use levels and route conditions to determine a maintenance schedule and prioritize routes that provide primary access to public lands, where amount of use is heaviest or where the potential for sensitive resource damage is greatest.

- Survey and design routes for relocations/reconstructions to assure proper design standards to minimize impacts to soils, water, and wildlife. Limit or close any routes that cannot be restored to a useable condition.

Deferred maintenance and capital improvement funds may be acquired through BLM to maintain and/or improve routes. Grants are available through the Colorado OHV registration program, Great Outdoors Colorado, Federal Highways' TEA-21, and other similar programs for route improvements and maintenance. Alamosa, Conejos, Rio Grande, and Saguache Counties provide annual maintenance for their roads that provide primary access. Coordination would be accomplished with the particular county road and bridge department on segments of their county roads that have been identified with resource concerns.

Braided portions of routes need to be reviewed and the appropriate drainage structures installed or other improvements made. The unused or redundant braided portions should be posted closed and/or reclaimed. Stream crossings would be evaluated to determine the appropriate type and amount of hardening that may be needed to provide a firm crossing that would minimize the amount of sediment created by vehicles and horses that cross running water.

VISUAL RESOURCES

Affected Environment

The San Luis Valley is widely known for its outstanding scenic qualities and impressive diversity of features such as rock formations, flora, fauna, and water features. This area is one of Colorado's most scenic places with seven of Colorado's 14,000 foot peaks on public lands, one of the four Sacred Mountains, and a diversity of vegetation, wildlife, and cultural elements that make this landscape a special scenic place.

These features help distinguish areas of high scenic importance in comparison to areas of lower scenic importance. Areas such as Penitente Canyon, Zapata Falls, Sangre de Cristo Mountains, and the San Luis Hills contain many of these outstanding scenic features that visitors and local residents value as part of the characteristic landscape.

This area has several special designations including the Los Caminos Antiguos Scenic and Historic Byway, the Rio Grande Corridor, Penitente Canyon, Blanca Wetlands Habitat Management Area, Zapata Falls, and the San Luis Hills WSA. Outstanding scenic qualities were part of the designation criteria or were the principal factor in their special designation. Preserving the scenic qualities of these areas is of primary concern for the economic improvement of the surrounding San Luis Valley communities due to the importance of heritage tourism.

Most of the impacts to any existing visual resources are from user-created routes, changes in landform color and texture (vegetation manipulation), facilities, development (both residential and commercial), and vandalism. Some of the BLM routes were developed from ancient trails and historical use from the first explorers; others were created in the last 100 years by ranchers or mining. A, large portion were created under existing BLM management policies that generally allow unrestricted cross-country motorized use valley-wide.

Visual resources are mapped using Variety Class or the characteristic features of a particular landscape, sensitivity levels or people's concern for the scenic quality of a landscape, and distance zones which determine the distance from which a landscape is being viewed from a particular location. The result is class levels that help determine objectives for the landscape. The San Luis Valley Visual Resources Objectives are shown in Table 68 and identified on the map in Appendix 22 as the following classifications:

Table 67: Visual Resources Classifications

Classification	Acres	Description
Class I	0	Areas most valued for outstanding visual resources. This class is assigned to special areas where the management requires maintaining a natural environment essentially unaltered by human activity. The San Luis Valley does not have any Class I areas.

Table 67: Visual Resources Classifications		
Classification	**Acres**	**Description**
Class II	138,204	Areas highly valued for visual resources. This class is assigned to areas where viewers value the natural environment and the landscape is maintained so that human activities are subordinate to the characteristic landscape. The areas along the foothills in the San Luis Valley, the San Luis Hills WSA, Penitente Canyon, and public lands adjoining RGNF boundaries fall into this category.
Class III	293,305	Areas moderately valued for the scenery, these lands may contain human alterations on the landscape. This area includes a large portion of the San Luis Valley floor and the foothills adjoining the Class II landscapes.
Class IV	75,555	Areas of minimal concern for the scenery. These are areas in the San Luis Valley that remain among private land development and along La Jara Creek in the southern part of the Valley.
Class V	2,356	Areas where visitors feel other values upon the landscape take precedence over the scenic values. This class is only at the base of Blanca Peak where there have been moderate alterations to the vegetation. This category does not exist elsewhere in the Valley.

Environmental Consequences

The number of routes established by users during the last 20 years on public lands has led to impacts to the visual resources. Most of the roaded areas can be seen from most points in any TMA. There are areas within the Penitente TMA, the Rio Grande Corridor, and the foothill areas on the west side of the Valley where routes are less dominant due to varying terrain features. Due to the elevation gain on either side of the valley floor; many of the routes are noticeable on all BLM lands in the foreground, middle ground and background. The route leading to Zapata Falls has a significant impact to the landscape in the foreground and middle ground due to the change in color contrast and on the ground facilities. Unrestricted travel over the last decade is evident across all landscapes and throughout all Visual Resource Classifications.

Current Use (No Action) Alternative A: This alternative would continue to allow existing impacts to visual resources, especially in the foothills of the San Luis Valley, the WSA, Penitente Canyon, and public lands adjoining RGNF due to ongoing unmanaged cross-country travel. The impacts to visual resources have caused some moderate changes to the characteristic landscape. There are some areas devoid of vegetation, which has led to stark changes in landscape color and texture. These changes can be expected to increase as visitor use increases. It is estimated that a significant amount of user-created roads and trails have appeared in the last 10 to 20 years due to the open travel management policy. The same trend can be expected to continue. The short term impacts to visual resources are likely to significantly increase due to the continued allowance of cross-country motorized travel. Many of the routes are difficult to close, have caused resource damage, and impacts will continue until this can be properly addressed.

The SLRA RMP identifies strict protection of 2,640 acres of a 22-mile stretch of the Rio Grande River Corridor and the Cumbres & Toltec Scenic Railroad covering approximately 3,824 acres. The Rio Grande Corridor has received a significant amount of impact in the form of resource damage from off-road travel and user-created routes even though the ACEC designation for this

area has travel restrictions that do not allow off road travel. It is expected that these impacts will increase.

The Cumbres and Toltec Railroad Corridor has received a moderate amount of impact, because it is less accessible by OHVs. This area has been able to maintain a more characteristic landscape than the River Corridor. The Blanca or Como Road is visible from middle ground and background from the valley floor. Impacts related to current management are expected to remain the same due to terrain limitations. Zapata Falls and Blanca Wetland Habitat Management Area have been able to maintain their scenic values, with the exception of Penitente SRMA, which has seen an increase in visitation and user-created ATV, equestrian, and mountain bike trails which have caused some changes on the characteristic landscape.

Viewers may notice deterioration to the visual resource condition in the SRMAs and TMAs that do not have travel restrictions in place. Viewers may see a proliferation of routes that would affect the visual resources valley-wide as there may be little chance for routes to rehabilitate or revegetate if vehicles, OHVs, and mountain bikes continue to use non designated routes.

The BLM allows interim off-road travel, parking, camping, or game retrieval in Area #1 on public lands provided resource damage does not occur. Areas which have specific travel restrictions such as ACECs, WSA, or within an OHV designation area contain travel restrictions. Areas such as Blanca Wetlands and the Rio Grande Corridor have overlapping SRMA and ACEC designations. The Rio Grande Corridor, Blanca Wetlands, Elephant Rocks, Trickle Mountain, RaJadero, Los Mogotes, Cumbres and Toltec Railroad Corridor, and San Luis Hills ACEC's maintain the special restrictions. These restrictions include parking and camping in designated areas only. Motorized game retrieval off designated roads is not authorized. Travel is limited to existing routes only. The San Luis Hills WSA does not allow motorized access. These designations have helped maintain the Visual Resources for the most part-but off road travel can occur anywhere and has the potential to have the greatest effect on steep slopes, critical viewing angles, or in close proximity to heavily used roads and trails.

Proposed Action Alternative C: This alternative would dramatically improve the condition of the visual resources across public lands as compared to the Current Use (No Action) Alternative A. Viewers may continue to see more impacts than the Minimum Access Alternative B. Decreasing the amount of motorized routes (primarily concentrating on the routes that go to similar destinations, small spur routes, and user-created routes) along with the elimination of motorized cross-country travel (common to all the action alternatives), will improve the visual resources. It is expected that revegetation and rehabilitation will take many years, and will not likely make much of a difference for visual resource impacts in the next 10 years. It is possible that some of the routes would revegetate sooner and some routes will be targeted for re-vegetation during project implementation. It is expected that re-vegetation, rehabilitation, and route closure efforts will require increased law enforcement to ensure that resource damage does not continue and gives closed routes opportunities to revegetate. Re-vegetated routes would eventually become less evident on the landscape and will help improve the condition of the visual resources and decrease cumulative impacts. Viewers may notice improvements to the visual resources in TMAs that do not currently have travel restrictions.

The cumulative impacts to visual resources from the Proposed Action Alternative C are less than the Current Use (No Action) Alternative A.

Minimum Access Alternative B: Compared to the Current Use (No Action) Alternative A, the Minimum Access Alternative B would improve the condition of the visual resources. Six hundred miles of routes would be vegetated or converted to non-motorized use. These closures, when paired with the elimination of motorized cross-country travel (common to all the action alternatives), would significantly decrease the cumulative impacts for visual resources. These converted routes would include adjacent routes that go to similar destinations, spur routes, and user-created routes. It is expected that revegetation will take many years, and will not likely make much of a difference in the visual resource impacts in the next 10 years. It is possible that some of the routes would revegetate sooner and some routes will be targeted for revegetation during project implementation. The visual impact from the routes (primarily a change in color and texture to the landscape) would diminish as vegetation begins to grow. It is expected that law enforcement and other measures would be needed to appropriately close routes to ensure that resource damage does not continue and that the routes remain closed in order for rehabilitation to occur. This alternative may have the greatest improvement to visual resources as compared to any of the other alternatives. Viewers may notice most of the improvements to the visual resources in TMAs that do not have travel restrictions.

Maximum Access Alternative D: This alternative would have additional impacts to the visual resources than the Minimum Access Alternative B and Proposed Action Alternative C, but less than the Current Use (No Action) Alternative A. This alternative would have 892.8 miles of motorized recreational access (travel use categories of General, ATV, and Motorcycle). This alternative would impact the Class II and Class III areas, which have a higher sensitivity to routes on the landscape than in Class IV and V. There would still be a decrease in the cumulative effects on visual resources given that this alternative closes routes that go to similar destinations, user-created routes, and eliminates motorized cross-country travel. It is expected that it will take years for most areas to revegetate and rehabilitate unless the road or trail is otherwise targeted for a specific project. It is expected that the visual resources would improve more than the Current Use (No Action) Alternative A. Due to the number of routes left open, viewers may not see a dramatic improvement to the visual resources. It is possible that some improvements would be noticeable in SRMAs and in individual TMAs.

Effects Common to All Alternatives: Motorized vehicles are allowed to drive up to 300 feet off the road for dispersed recreation, provided there is no resource damage in Area #1. The distance that motorized vehicles can drive off existing routes for parking and camping would be limited to a single perpendicular distance of 300 feet from the edge of the route (no parallel travel at a distance of 300 feet to a route). The Rio Grande Corridor, Blanca Wetlands, Elephant Rocks, Trickle Mountain, RaJadero, Los Mogotes Cumbres and Toltec Railroad Corridor, and San Luis Hills ACEC's maintain the special restrictions. ACEC restrictions include parking and camping in designated areas only. Motorized game retrieval off designated roads is not authorized. Travel is limited to existing routes only. Motorized game retrieval will not be authorized on public lands in the San Luis Valley.

Cumulative Effects for Visual Resources: Road systems can have a significant affect on visual resources by changing the line, form color, and texture of a characteristic landscape. Adjacent

areas to the public lands can provide a large number of routes on private land (as surrounding lands are subdivided and developed), Federal, and State Lands which can impact the visual resources for a viewshed.

The Current Use (No Action) Alternative A has the highest motorized travel potential; the greatest potential to change the characteristic landscape from a pristine one to a heavily modified landscape due to unrestricted travel regulations. This has the potential to compound the unnatural lines, form, color, and texture of many "intact" landscapes that still remain. A large majority of the San Luis Valley landscapes still represent the characteristic landscape that has very little to no modifications. This alternative allows unrestricted travel compounded by adjacent land development or roads. There is a possibility that the public land landscape natural appearance may be lost.

All action alternatives have the potential to improve visual resources as new travel guidelines will help eliminated any changes to the line, form, color, and texture of these intact landscapes that have little to no unnatural lines. These action alternatives will help to improve visual resources in areas that have a large amount of roads. The eventual reduction in these roads will help rehabilitate the visual resources on the landscape. This will vary by alternative as some alternatives provide more open roads than others. Current restrictions that apply to ACECs and WSAs will remain in place.

Mitigation

The following mitigation measures would apply to all alternatives:

- Any new routes (including loop routes) will meet the VRM objectives for the area and will incorporate topography, form, line, color, and texture of the landscape when designing the route.

- Any rehabilitation work on roads and trails will meet the VRM objectives for the area and will incorporate the topography, form, line, color, and texture of the landscape.

LAW ENFORCEMENT

Affected Environment

Problems with unauthorized or illegal motorized use on the public lands administered by the San Luis Valley Public Lands Center and respective field offices are numerous and growing. The law enforcement program associated with this type of use focuses on education, compliance checks, and issuing written warnings and violation notices. The ability of the law enforcement program to increase compliance with existing motorized use regulations is dependent upon two primary factors:

Only one law enforcement officer (ranger) is stationed in the San Luis Valley Public Lands Center Office at Monte Vista, Colorado. A single ranger is responsible for enforcement activities in the San Luis Valley and a portion of the Front Range around Trinidad. The ranger must handle mineral, land and realty, grazing, recreation, wild horse and burro, and other program violations in addition to enforcing motorized use violations.

Motorized travel is permitted cross-country and on all existing public lands in Area #1 except during critical winter range wildlife closures, and is limited to existing routes in Areas #2 and #4 through #10 (ACECs) under the BLM's motorized regulations. The exceptions are those areas where motorized access has been restricted by activity plans. Routes are assumed to be open to OHVs unless posted as closed. Many unofficial user-created travel routes have been legally created over the years in those areas that allow cross-country travel under the open area designation. Visitors can and do regard these user-created motorized routes as open routes under the management plan. The ACECs, the Rio Grande Corridor, and Trickle Mountain OHV plan have restricted travel to those routes which are designated as open, other routes being closed or limited to administrative uses. The user-created routes are not authorized and under all alternatives will be closed.

The motorized regulations are difficult for the public to understand and for BLM to enforce. This difficulty faced by the public is due to inconsistent area designations that in most of the project area allows for cross-country motorized travel, but in other areas limits motorized use to existing routes.

Environmental Consequences

Current Use (No Action) Alternative A: The Current Use (No Action) Alternative A would allow the continued proliferation of user-created routes. Law enforcement personnel would continue to operate under travel management regulations that limit their ability to effectively enforce and stop the damage occurring to public lands from unregulated cross-country motorized travel and the continued proliferation of user-created routes.

Common to All Action Alternatives: The primary benefit for law enforcement in switching to a designated route system is that rangers will know the routes that are available and their designated uses and having a designated, signed, and mapped route system which will make it easier for law enforcement to write citations that will hold up in court. Compliance has been observed to increase when the message gets out that the citations are being written and that they are being upheld by the magistrates.

The limitation of motorized use within 300 feet of a motorized route will reduce the total area subject to patrol. The total area of dispersed motorized recreation uses will be restricted to within 300 feet of designated motorized routes. Enforcement will be required to search out users who have driven down closed or limited routes. Additional enforcement will be required for those who create additional routes 300 feet beyond the end of a designated motorized route.

The snowmobile restrictions will increase the workload to insure that snowmobiles remain on designated motorized routes. The effort required should be reduced as the public becomes familiar with and accustomed to the additional regulations.

Restrictions due to critical winter range closures will require assistance from recreation and wildlife specialists to post and notify the public of seasonal closures. The additional regulations will provide a means for improved enforcement with the existing manpower. It is expected that with a designated route system in place, with literature/maps available to the public, there should be an increase in voluntary compliance and enforceability.

The rangeland management specialist and technicians should be able to provide assistance on those routes limited to permittee and administrative purposes. Coordination and education with the permittees will be essential. Permitted dates of use will be necessary to ensure the appropriate use of routes limited for grazing purposes.

The development of horse gates will have little affect on workload of enforcement in the near future, but as subdivisions increase and additional homes with horse owners are built, this stipulation and enforcement efforts may cause additional workload.

The two open areas could reduce enforcement if they are used by nearby communities for ATV, motorcycle, and OHV play. Additional nearby focus for enforcement maybe necessary should the public choose to leave these open areas and begin to play in nearby restricted areas.

The elimination of motorized cross-country game retrieval will clarify enforcement issues. It has been rarely possible to determine if someone was legally off designated routes to retrieve game and the potential privilege was often abused under the current management policy (i.e., Current Use (No Action) Alternative A). Patrol on motorized routes would rarely provide an opportunity to enforce or check for compliance with this authorized use. The enormous size of the area (i.e., no restrictions on motorized game retrieval) to be covered by the ranger made it virtually impossible for law enforcement to patrol solely for this purpose. Tracks beyond the 300 feet by ATV, OHV, or any other motorized conveyance under any of the Action Alternatives will be cause to investigate for potential violation. ATV and/or OHV motorized game retrieval will be unauthorized off of designated motorized routes.

The cumulative affect of the travel management system will be enforceability of the transportation plan with the same level of patrol as additional patrol is not going to be possibile. Successful enforcement combined with education will greatly improve compliance with travel regulations. Funding levels do not suggest that an additional ranger could be hired. Other BLM staff will need to provide assistance in patrol and notification of potential violations. Additional educational efforts will be necessary to assist the public with adjustment to the new regulations. The public could be educated to provide assistance by policing public recreational users who disregard the route management system and new regulations.

Proposed Action Alternative C: The Proposed Action Alternative C would implement a designated route travel management system that would improve the ability of law enforcement personnel to enforce motorized restrictions. The Proposed Action Alternative C would initially create a greater need for compliance and law enforcement actions but this would improve as users become familiar with the new travel management system.

Minimum Access Alternative B: The Minimum Access Alternative B would implement a designated route travel management system that would improve the ability of law enforcement personnel to enforce motorized restrictions. This alternative would require the most law enforcement presence, since the number of routes that are designated for OHV, ATV, or any other motorized use would be substantially reduced. This could lead to overcrowding and increased user conflicts, increased violations of OHV use on non-motorized routes, and increased attempts to establish illegal routes.

Maximum Access Alternative D: The Maximum Access Alternative D would implement a designated route travel management system that would improve the ability of law enforcement personnel to enforce motorized restrictions. This alternative would initially create a greater need for compliance and law enforcement actions but this would improve as users become familiar with the new travel management system. A lower level of law enforcement presence should be needed compared to the Minimum Access Alternative B and the Proposed Action Alternative C in the long term since more routes would be available for motorized use.

PALEONTOLOGICAL RESOURCES

Affected Environment

Paleontology is a branch of geology dealing with prehistoric life through the study of fossils. Fossils are the remains and traces of once-living organisms, preserved in rocks of the Earth's crust. Scientific study of Pleistocene fauna in association with archaeological materials constitutes the major thrust of paleontology. A permit is not required for amateurs to casually collect common invertebrate and plant fossils for noncommercial personal use. Fossil collecting activity is limited in the San Luis Valley because of the general rarity of exposed fossil bearing formations.

Potential Impacts of Travel Management: Paleontological properties can be impacted in several ways depending on their proximity to existing travel routes.

- Routes may provide access to paleontological resources for unauthorized collectors.
- Uncontrolled off-road vehicle use can pose a threat to paleontological resources because of the relative ease in accessing remote areas.
- Many existing routes are not adequately maintained thereby resulting in the potential for increased erosion-related impacts to paleontological resources.

Travel management can offer protection of paleontological resources through control and management of areas that are accessible by vehicle and this would reduce access for illegal collecting activity.

Paleontological Resource Inventory: An overview/non-detailed inventory of paleontological resources was contracted by the BLM with the Denver Museum of Natural History (now the Denver Museum of Nature and Science) in 1983. This report emphasizes existing localities and the likelihood of additional fossil material being discovered in given localities. Paleontological resources were organized within a classification system based on rarity of occurrence and scientific significance.

Table 68: Paleontological Resource Classification System

Classification	Description
Class 1-a	Areas with fossils of scientific interest that are either exposed or are very likely to be discovered during detailed fieldwork.
Class 1-b	Other areas with a high potential for scientifically significant fossils.
Class 2	Areas with evidence of fossilization, but the presence of fossils with scientific value has not

	been established and discovery is not anticipated.
Class 3	Areas with little likelihood for the presence of fossils of scientific use or importance.

There are no Class 1-a designations in the San Luis Valley and a high percentage of the fossil-bearing formations are designated as Class 2.

Information related to paleontological resources was provided by agency specialists and used extensively during the route evaluation process and will be used to identify those areas that require special attention, monitoring, or mitigation. Paleontological properties have not been formally evaluated for status within the National Landmark System.

Paleontological Resource Monitoring: A monitoring program will be instituted to monitor known significant paleontological resources intersected by travel routes in order to determine if travel related impacts are occurring.

Environmental Consequences

Current Use (No Action) Alternative A: Motorized use will continue to increase on existing routes and the establishment of additional user-created routes would continue. Potential impacts to inventoried and undocumented paleontological resources would increase due to the increased establishment of user-created routes, possibly into areas where significant paleontological resources occur.

Proposed Action Alternative C: A designated travel system would result in a significant reduction of available motorized routes. The potential impacts to identified significant paleontological resources would be decreased due to the lower number of routes that are open to the public. The closure of a high percentage of user-created routes, as well as the elimination of motorized cross-country travel would reduce potential impacts.

Minimum Access Alternative B: The potential impacts to paleontological resources would be fewer than the Proposed Action Alternative C due to the smaller number of motorized routes designated as open or limited. The potential impacts to identified significant paleontological resources would be decreased due to the lower number of routes that are open to the public under this alternative as compared to the Current Use (No Action) Alternative A. The closure of a high percentage of user-created routes, as well as the elimination of future motorized cross-country travel would reduce potential impacts.

Maximum Access Alternative D: The potential impacts would be higher than the Proposed Action Alternative C due to the greater number of motorized routes designated as open or limited. The potential impacts to identified significant paleontological resources would be decreased due to the lower number of routes that are open to the public as compared to the Current Use (No Action) Alternative A. The closure of a high percentage of user-created routes, as well as the elimination of future motorized cross-country travel would reduce potential impacts.

Mitigation

The following mitigation measure would apply to all alternatives:

- The BLM will immediately take action to protect the resource from further damage if a significant paleontological resource is experiencing adverse impacts resulting from the use of a route through closing the route, rerouting traffic, or emergency treatment of the site to protect the resource from further damage.

FUELS MANAGEMENT

Affected Environment

The fire seasons of 2000 through 2006 have been extremely difficult and challenging for the San Luis Valley land management agencies. An outcome of the 2000 fire season was a national fire plan that included investing in projects to reduce the wildfire risks to communities. Since 2002, the San Luis Valley BLM Field Offices (Saguache, Del Norte, and La Jara) have treated a total of 10,424 acres with the use of mechanical methods or prescribed fire. All treatments are within the SLRA. Future fuels reduction/forest health restoration treatments are planned. These treatments may include prescribed burning as well as mechanical treatments such as hydroaxe, hand thinning, forest product harvest (firewood, Christmas trees, transplants, etc.), and timber harvest/salvage in vegetation types ranging from piñon and juniper forests to ponderosa pine/mixed confer forests.

Environmental Consequences

Consequences Common to All Alternatives: Access to treatment areas is adequate, especially since most of the treatments are near subdivisions. Current and future access has been achieved via routes on public land or through routes on private, county, or state land. New routes have not been built and are not planned for access to the treatment areas. Those routes that are designated for administrative use under all of the action alternatives would be available for fuels treatments. In the rare case that adequate access is only by a route that has been closed and blocked off, it could be temporarily reopened and improved during the treatment for administrative use only and then closed immediately following the completion of the treatment. This type of activity would be subject to additional environmental analysis.

FIRE MANAGEMENT

Affected Environment

The San Luis Resource Area Valley project area was included in the development of the San Luis Valley Bureau of Land Management Fire Management Plan approved in 2004. The San Luis Valley BLM Fire Management Plan includes identified fire management units (FMUs). The following FMUs are found within the San Luis Valley planning area:

- Mishak and La Garita Lakes Blanca Wetlands Complex;
- Zapata/Urraca/San Luis Valley Ranches;
- Rio Grande River Corridor;
- McIntyre/Simpson Properties;
- Mogotes/State Highway 285;

- La Jara and Hot Creek;
- Alamosa River;
- Rock Creek-Greenie Mountain-Cat Creek Interface Buffers;
- South Fork-Del Norte-Monte Vista-southward to Rock Creek;
- Saguache southwest-La Garita-Rio Grande County Line;
- McIntyre Canyon northeastward to Bonanza (Kerber Creek Drainage) between Spring Creek and Alder Creek;
- Eaglebrook Gulch Road southwestward to the Hayden Pass Road including BLM Wilderness Area surrounding Steel Canyon and Lime Canyon;
- Crestone Area;
- Flat Top, Piñon Hills to New Mexico State Line, west to where Country Road 16 meets the BLM and angles southwesterly to the Colorado/New Mexico State Line;
- Flat Top–public lands between Los Mogotes and Capulin;
- Ra Jadero Canyon/Hot Creek-between La Jara Creek and Alamosa River;
- Chiquito Peak between Alamosa River and Cat Creek;
- Greenie Mountain;
- Saguache-Trickle Mountain; and
- Eaglebrook-Hayden Pass.

Each FMU relates to management direction, concerns, and issues. These are all specific to resource protection actions, constraints, and wildland fire use opportunities for resource benefits applicable to each FMU. Specific details related to fire management can be found in the San Luis Valley Fire and Fuels Management Plan, available in the San Luis Valley Public Lands Center, Saguache Field Office, La Jara Field Office, and the Del Norte Field Office. Fire Program Analysis (FPA), a congressionally mandated fire program where the five Federal wildland firefighting agencies will work together, may modify the existing FMU boundaries.

Environmental Consequences

Current Use (No Action) Alternative A: This alternative would not affect existing fire management actions or practices as related to suppression, wildland fire use or prescribed fire. The continued cross-country travel, user-created routes, and route densities would probably lead to additional human-caused fires. Some number of additional human caused fires would occur with the continued increasing user-created routes estimated to be 437 to 672 miles of routes during the life of the plan.

Proposed Action Alternative C: This alternative would provide a slight benefit in reducing potential human-caused ignition sources. This alternative would reduce motorized access routes (including those routes with limited user access) by 429 miles compared to the Current Use (No Action) Alternative A with the existing routes today. It would create a greater benefit (fewer

human caused fires) over the life of the plan when 437 to 672 miles of additional routes will not be created as is projected in the Current Use (No Action) Alternative A. It would eliminate an additional 437 to 672 miles of expected user-created motorized routes which would be expected to occur over the life of the plan. This reduction in motorized access would reduce potential for human caused ignition sources including abandoned campfires, smoking, fireworks, exhaust systems, and exhaust sparks. This alternative, like the other Action Alternatives, will ban cross-country vehicular travel, which is likely to reduce fires caused by exhaust pipe sparks or via the contact of dry vegetation with catalytic converters. Historically, motorized travel routes have had the highest concentration of human caused wildland fire ignitions due to the ease in which they allow for public access.

This alternative will not adversely effect fire suppression response time as emergency vehicles will continue to have authorized access to all areas during suppression response actions. Routes that are physically blocked would be unavailable for fire response. Those routes that become overgrown with vegetation could delay future suppression response as suppression forces may need to access the incident by means other than a full-sized motor vehicle.

Prescribed fire operations would not be impacted. Existing and closed motorized routes are usually considered for fire control features, when available. Restricted routes used as prescribed fire control features would be rehabilitated upon project completion. Non-restricted routes used as control features will occasionally require minor improvement, providing a limited level of maintenance.

Minimum Access Alternative B: This alternative provides the highest potential reduction for human-caused fire occurrence. This alternative would eliminate 600.1 miles of motorized travel routes (including those routes with limited user access) as compared to the Current Use (No Action) Alternative A. It would eliminate an additional 437 to 672 miles of expected user-created motorized routes which would be expected to occur over the life of the plan. Reducing motorized travel routes to this extent would correspondingly reduce human-caused risk factors and fire occurrence by limiting the ability of the public to access remote areas. Suppression resources would be expected to provide response primarily within remaining roaded areas that would result in improved access to fewer areas to reach potential human-caused fire starts. Improved response time to an incident will usually result in quicker containment, lower fire complexity; fewer acres burned, and lower suppression costs.

Prescribed fire operations would not be impacted. Existing and closed motorized routes are usually considered for fire control features when available. Restricted routes used as prescribed fire control features would be rehabilitated upon project completion. Non-restricted routes used as control features will occasionally require minor improvement, providing a limited level of maintenance.

Maximum Access Alternative D: This alternative decreases motorized access routes (including those routes with limited user access) by 311.2 miles as compared to the Current Use (No Action) Alternative A. It would eliminate an additional 437 to 672 miles of expected user-created motorized routes which would be expected to occur over the life of the plan. The additional mileage would correspondingly decrease human risk factors associated with additional travel routes available to motorized vehicles. Potential human-caused ignition sources include,

but are not limited to, abandoned campfires, smoking, fireworks, exhaust systems, and exhaust sparks.

The motorized access under this alternative would provide less motorized access to the public and would be expected to result in a commensurate decrease in human-caused fires. Prescribed fire operations would not be impacted. Fire suppression response would not be affected. Existing and closed motorized routes are usually considered for fire control features when available. Restricted routes used as prescribed fire control features would be rehabilitated upon project completion. Non-restricted routes used as control features will occasionally require minor improvement, providing a limited level of maintenance.

SOCIO-ECONOMIC

Affected Environment

Aggregation: The San Luis Valley is an aggregation of five counties where the impacts of decisions made in this TMP would occur. This analysis will deal with these counties as if they were one economic unit which is a convenient and reasonably accurate economic assumption but which is a generalization. Though the five counties are not the same, they are sufficiently similar and sufficiently economically interrelated to use this generalization for clarity, brevity, and efficiency. When necessary the specific data from individual counties will be shown.

Population: The San Luis Valley had a 2002 population of 45,869. The population has expanded 25% since 1970 at an average annual rate of 0.7%. Since 1990, the rate has increased to 1.2%. In comparison, since 1970 the nation has expanded at the same rate of 0.07% while the State of Colorado has expanded at a far more rapid rate of 2.2%. The 2002 populations of each county were:

Alamosa	15,146
Conejos	8,399
Costilla	3,622
Rio Grande	12,206
Saguache	6,496

The San Luis Valley preserves a deep Hispanic history and tradition. The total 2002 population was 46% Hispanic while most notably Conejos and Costilla Counties have Hispanic populations of 59% and 68% respectively. (Data source for above: Economic Profile System created by the Sonora Institute with funding and the cooperation of BLM).

Employment: The number of jobs recorded in the San Luis Valley in 2002 was 24,924, a jump of 12,162 over the 1970 figure. Between 1970 and 2002, employment increased at an average annual rate of 1.5%. The economy is well balanced with major employment sectors that dominate the region being agriculture/fishing/hunting 11%, retail trade 12%, educational services 12%, and health care/social services 12%.

Income: Personal income from 1970-2002 grew at an inflation adjusted annual average rate of 2.7%, which almost matched the national average of 2.6% but was far slower than the Colorado

rate of 4.1%. Inflation adjusted average earnings per job rose from $23,413 in 1970 to $25,509 in 2002. This compares to a national average of $40,758 and state average of $41,337. Per capita income is the total income of an area divided by its population. In the San Luis Valley the 2002 per capita income was $21,650 compared to an inflation adjusted $11,388 in 1970. The region is still relatively "income challenged" even though growth has been substantial relative to the 2002 Colorado rate of $33,723 and the national rate of $30,906.

Recreation Related Income: The two economic sub-sectors that are most affected by the decisions in a TMP are retail trade and accommodation/food services, which make up approximately 12% (2,990 jobs) and 7% (1,745 jobs), respectively. Any change in recreation that affects money flowing into the San Luis Valley affects business revenue. Changes in business revenue affect the number of jobs and the personal income. Jobs and personal income in a region affect its population.

Recreation Expenditures: Information that describes the level of visitor use is extremely scarce given the dispersed nature of the recreation that occurs. Few estimates are available showing the current level of use of routes that will be affected by possible route closures or expansions. The Hathaway Stone Quarry and the Como Lake Trail on Mt. Blanca are rock crawling areas which are exceptions. It is estimated that 450 visitors participate annually in rock crawling in these areas.

Specific expenditure data is not available for rock crawling. Expenditure data is available for 4-wheeling. This information comes from a 2001 report entitled "Economic Contribution of Off Highway Vehicle Use in Colorado" prepared for the Colorado Off-Highway Vehicle Coalition. Non-resident overnight 4-wheelers are reported to spend $922.54 per day per household of 2.7 persons or $341.68 per person. Resident 4-wheelers on day trips spend $151.46 per household or $56.09 per person. Residents spend $339.24 per household or $125.64 per person on over night trips.

It is possible based upon these numbers, to estimate that expenditures of rock crawlers equal about $70,000 annually using the estimates of visitor use in the rock crawling areas and where they live (see recreation section). Expenditures of $56,000 coming from rock crawlers from outside enrich the San Luis Valley and are probably responsible for the existence of one or two jobs.

Rock crawling which is growing rapidly in popularity. It still represents only a very small percentage of the off-highway vehicle recreational community. The OHV recreational sectors including motorcycles, ATVs, 4WD vehicles, and snowmobiles far exceed the level of participation attributable to "rock-crawling". Specific data for these other OHV recreational uses in this planning area are not available, however their economic contribution to the local economies can be individually and cumulatively expected to far exceed the contribution made by rock crawling.

Environmental Consequences

Common to All Action Alternatives: Sufficient travel or recreation related information is not available to quantify how the totality of decisions might affect the socio-economics of the San

Luis Valley. It is considered likely that the current population, employment, and income projections would largely remain unaltered. Sufficient information only exists to estimate the impacts of decisions made for the Hathaway Stone Quarry.

Current Use (No Action) Alternative A: Changes in population, employment, or income trends are not projected since recreation-oriented decisions which depart from the norm have not been assumed. Population would continue to grow at the current 10 year growth rate of 1.25% per year reaching 50,461 in 2010. Employment would continue to grow at the current long term growth rate of 1.5% per year, reaching 28,076 jobs in 2010. Employment in the two recreation sensitive sectors, retail trade and accommodation/food services, would make up 12% (3,369 jobs) and 7% (1,965 jobs) of total employment, respectively.

Income per job would increase at the long term growth rate of 2.8% per year to $31,568 in 2010. It is estimated that rock crawling would bring in 600 visitors and approximately $90,000 per year. $72,000 would flow into the San Luis Valley economy sustaining approximately two to three jobs. No change in population is expected from a change of this magnitude.

Proposed Action Alternative C: The Rock crawling routes are available for the proposed purpose under this alternative. There would be a gain of $72,000 to the Valley and approximately two to three jobs would be sustained.

Minimum Access Alternative B: The Rock crawling routes are closed under this alternative. There would be a loss of $72,000 to the Valley and approximately two to three jobs would not be sustained in the Valley.

Maximum Access Alternative D: Rock crawling would bring in 525 visitors and $82,000 annually. $65,000 would enter the San Luis Valley economy, probably sustaining approximately two to three jobs.

IMPLEMENTATION

This TMP has been developed to identify the travel network that is being proposed for implementation by the BLM in the San Luis Valley. Once the DR has been entered for this TMP, BLM will develop an implementation plan to discuss how the travel network will be implemented and will include any necessary monitoring, mitigation, route maintenance and plan maintenance. The travel network, DFCs, management objectives, and mitigation measures identified in this TMP will be carried forward to the implementation plan and discussed in more detail.

ADDITIONAL INFORMATION

PUBLIC PARTICIPATION

March 1, 2004: Meeting with Christine Canaly, San Luis Valley Ecosystem Council, Aaron Clark, The Wilderness Society, Rosalind McClellan, Rocky Mountain Recreation Initiative, and Vera Smith, Colorado Mountain Club, to discuss planning, contract, input opportunities for upcoming planning effort.

March 18, 2004: Front Range Resource Advisory Council (RAC) presentation of travel management planning effort and potential schedule. Many presentations were given to the RAC. Additional contacts were made with special interest group representatives who were attending the RAC meetings or were with RAC members who represented special interests. Examples of these contacts are: Colorado Off-Highway Vehicle Coalition, Gene King, SeEtta Moss, Audubon Colorado and Arkansas River Audubon, and International Mountain Bicycling Association, Josh Osterhoudt.

March 30 through June 18, 2002: Notice of Intent to Prepare the San Luis Valley Travel Management Plan and Amend the San Luis Resource Area Resource Management Plan published in the Federal Register.

May 18, 2004: Front Range Resource Advisory Council (RAC) presentation of initial schedule. Resource Advisory Council (RAC) appointed Sub-Committee to coordinate with planning efforts.

May 17, 2004: Contacted newspapers and radio stations regarding notices of upcoming meetings for scoping of the travel management planning and SLRA RMP amendment in the San Luis Valley.

May 17 through 20, 2005: Sent out 87 letters concerning upcoming Public Scoping Meeting for those identified as being interested including those who had expressed an interest during the initial contact stages and as suggested by the RAC members.

May 25, 2004: Public Scoping meeting in Center, CO

May 27, 2004: Public Scoping meeting in Del Norte, CO

June 1, 2004: Public Scoping meeting in Saguache, CO

June 3, 2004: Public Scoping meeting in Antonito, CO

These Public Scoping meetings resulted in the attendance of 43 individuals and groups who submitted 69 written comments.

June 4, 2004: Meeting with a group representing special interests composed of Christine Canaly, San Luis Valley Ecosystem Council, Aaron Clark, The Wilderness Society, Rosalind McClellan, Rocky Mountain Recreation Initiative, and Vera Smith, Colorado Mountain Club

June 25 through June 28, 2004: Sent out letters to grazing permittees concerning their needs.

June 28, 2004: Met with San Luis Valley Ecosystem Council representative.

August 2, 2004: Sent out Cooperating Agency draft Agreement to Saguache County.

August 10, 2004: Consultation with DOW Officers on their areas of concern.

October, 2004: The RGNF has a quarterly scoping newsletter which is sent to a mailing list of 445 individuals and groups. An additional mailing is made every quarter and has contained the information on the process and offers the public an opportunity to participate in the process. This newsletter advises the public of the status of the process.

October 11 through November 28, 2004: Consultation with RAC Sub-Committee Chairman, Michael Bush, on interviews and data gathering by the Sub-Committee.

November 3, 2004: Power Point Presentation on the San Luis Valley Travel Management Planning Effort to the RAC.

November 4, 2004: Michael Bush, Chairman, RAC Sub-Committee, provided additional interview information.

December 1, 2004: Radio Interview with KRZA for the Travel Management Planning Effort to inform the Public of Status and Issues.

December 1, 2004: Met with the Saguache County Commissioners and provided update and issues. Discussion of RS2477 relationship to travel management planning.

January 5, 2005: Gave update of the Planning Status and Process to the RAC.

January 5 through February 5, 2005: Coordinated with San Luis Valley Ecosystem Council on data.

January 21, 2005: A newsletter was sent to the interested public's mailing list of 87 interest groups and individuals to provide the status of the TMP process.

February 3, 2005: Meeting with Christine Canaly, San Luis Valley Ecosystem Council.

February 9, 2005: Meeting with RAC Sub-Committee seeking concurrence and modification of process and aspects of Travel Management Planning Process. Included, DFCs by TMA, TMA boundaries, DFC, Management Objectives, and Route Analysis Process

March 2, 2005: Provided a RAC update of process status.

April 16, 2005: Gave a Power Point Presentation to the Colorado 4X4 Jeep Club in Montrose, Colorado on the San Luis Valley Travel Management Planning Process and their opportunity for involvement.

April 19, 2005: Provided a Status and Process Update to the San Luis Valley Joint County Commissioners meeting.

May 3, 2005: Provided Brief Update to RAC of Status of Travel Management Planning Process.

May 4, 2005: Field Trip to Review some of the conflicting issues and resource damage from a lack of Travel Management.

May 5, 2005: Sent 91 letters to interested publics list of upcoming public meetings. This was the updated list from the previous scoping meeting and those sending in comments or requesting to be on the mailing list or to be considered an interested public. Prepared and distributed posters for at least three locations in every community in the Valley.

May 9, 2005: Articles sent to newspapers for announcement of Public meetings.

May 10, 2005: Interview with the local newspapers on Travel Management Planning, purpose, and potential outcome. Additionally, local radio stations (including KRZA, KGIW, KALQ, and KSLV were notified and carried public service announcements of the upcoming public meetings.

May 16, 2005: Follow-up scoping at Alamosa to review TMAs, potential route designations for each route in the TMAs, the developed alternatives, Management Objectives by Alternative, DFC by TMA, and to gather comments on the proposed actions common to all action alternatives.

May 18, 2005: Follow-up scoping at Alamosa to review TMAs, potential route designations for each route in the TMAs, the developed alternatives, Management Objectives by Alternative, DFC by TMA, and to gather comments on the proposed actions common to all action alternatives.

May 20, 2005: Follow-up scoping at Alamosa to review TMAs, potential route designations for each route in the TMAs, the developed alternatives, Management Objectives by Alternative, DFC by TMA, and to gather comments on the proposed actions common to all action alternatives.

The result of the Public Scoping meetings was attendance by 55 individuals and groups with 77 submitting comments or feedback forms.

June 2, 2005: Met with Conejos County Commissioners to discuss alternatives and gain their input.

June 6, 2005: Met with interested public on route issues.

June 6, 2005: Met with representatives of the Blanca Peak 4X4 Club to discuss travel management and the proposed 4WD route in Lime Kiln TMA.

July 6, 2005: Provided update of EA status to RAC.

July 27, 2005: Met with interested public on route issues.

August 3, 2005: Meeting with the San Luis Valley Ecosystem Council and others to review their Proposed Action Alternative C and discuss how the BLM used their input.

September 7, 2005: Updated RAC on Status of environmental assessment for the alternatives in the travel management planning process.

PERSONS/AGENCIES CONSULTED

Front Range Resource Advisory Council
Colorado Division of Wildlife
Rio Grande National Forest
Costilla, Alamosa, Saguache, Rio Grande, Conejos, County Commissioners

BLM STAFF INVOLVED

Peter Clark	Center Manager
Brian Garcia	Fuels Management/Wildlife Biologist
Melissa Garcia	Wildlife Biologist
Diann Gese	Geologist
Dave Gilbert	Fisheries Biologist
Randy Ghormley	Wildlife Biologist
Jim Jaminet	Fire Management Officer
Jeremiah Martinez	Natural Resource Specialist
Sue Miller	Wildlife Biologist
Bill Miller	Realty Specialist
John Murphy	Program Lead Forester
Kelly Ortiz	Outdoor Recreation Planner
John Rawinski	Soil Scientist
Philip Reinholtz	Hydrologist
Jim Rhett	Associate Center Manager
Chris Robbins	Rangeland Management Specialist
Chuck Romaniello	Sociologist

Steve Sanchez	Natural Resource Specialist
Melissa Shawcroft	Rangeland Management Specialist
Doug Simon	GIS Coordinator
Gary Snell	Range Management Program Lead
Vince Spero	Archaeologist
Mark Swinney	Resource Advisor/Project Lead

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