Recreation Specialist Report

Analysis of Recreation, NM & National Scenic Byway, Trails, & Wilderness Resources

For:

Cedro Forest Restoration Project
Sandia Ranger District
Cibola National Forest & Grasslands
USDA-Forest Service

Prepared By: ROBERT T. HEIAR, District Recreation Staff Officer
and KERRY WOOD, District Trails & Wilderness Program Manager
Background Information

Cibola National Forest

The Cibola National Forest was the forest with the second most recreation use in New Mexico according to the National Visitor User Monitoring Survey (round 2) coming in just behind the Santa Fe NF. Round 3 NVUM data suggests that the Sandia Ranger District receives the highest recreation use on the forest, due to its proximity to metropolitan Albuquerque. The district manages lands in the Sandia and Manzanita Mountains. The Sandia Ranger District has been managed primarily for day-use developed recreation (picnic grounds and scenic overlooks), and trail use recreation in the last 20 years.

Manzanita Mountains

The Manzanita Mountains are the portions of the district south of I-40. Residential development is common adjacent to the forest boundary, including the communities of Albuquerque, Carnuel, and the East Mountain communities of Tijeras, Tablazon, Sedillo, Juan Tomas, Ramblewood, San Miguel Acres, Ponderosa Pine, Tranquillo Pines among others.

The landscape is predominantly natural appearing. Most of the developed recreation in the Manzanita Mountains is day use only, with the Cedro Peak Group campground as the only exception.

Trail use is the primary dispersed recreation use. There are 80 miles of National Forest System (NFS) trails in the Manzanita Mountains. Trails in the Manzanitas are primarily used for motor biking and mountain biking but also receives use from hikers and horseback riders. An additional 11.2 miles of roads are open for motorized use including full-size vehicles.

In addition to trails, a variety of other dispersed recreation activities occurs on the Manzanita Mountains including wildlife and bird watching. Motorized dispersed camping is permitted, but is not a common activity. Only bow hunting is permitted on the district, and there are hunting permits for bear, cougar, and deer. Firearms are prohibited on the entire district, except for use by tribal members under existing treaty rights.

The Manzanita Mountains contain lands that are withdrawn from public use by the US Departments of Defense and Energy. Collectively these withdrawn areas contain 19,605 acres.

Affected Environment

The Cedro project area contains a wide range of recreation opportunities and infrastructure including two developed picnic grounds (Pine Flat and Oak Flat), one developed group campground (Cedro Peak), one dilapidated developed recreation site (Deadman), six motorized dispersed camping corridors. There are approximately 80 miles of forest system trails accessed by nine trailheads (Cedro, Chamisoso, Coyote, Lower Pine, Mars Court, Oak Flat at picnic area, Otero Canyon, Pine Flat at picnic area, and Tunnel Canyon). There are also 14 miles of forest system roads within the area.

A majority of trails located within the project area are open to motorcycles as shown on the district Motor Vehicle Use Map. Approximately 11 miles of level 2 roads are open to all motorized use. Additionally, there are an undetermined number of unauthorized trails and roads
scattered across the landscape. The majority of use on the trail system is motorcycle and mountain bike with moderate hiker and equestrian use.

**Recreation Opportunity Spectrum (ROS)**

The lands within the project area are classified as Roaded-Natural, Semi-primitive Non-motorized, and Semi-primitive Motorized. Table 1 lists the lands classification. Each classification of the spectrum is described in the ROS Users Guide. Information pertinent to Roaded Natural and Semi-Primitive Non-Motorized is included below (ROS Users Guide 1982 USDA-FS).

Table 1: Project area ROS classification

<table>
<thead>
<tr>
<th>ROS Class</th>
<th>Acres</th>
<th>% Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roaded Natural</td>
<td>7674</td>
<td>41%</td>
</tr>
<tr>
<td>Semi-Primitive Non-Motorized</td>
<td>441</td>
<td>2%</td>
</tr>
<tr>
<td>Semi-Primitive Motorized</td>
<td>10808</td>
<td>57%</td>
</tr>
<tr>
<td>Total</td>
<td>18923</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Roaded Natural**

*Setting Characterization* - Area is characterized by predominantly natural appearing environments with moderate environments of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment conventional motorized use is provided for in construction standards and design of facilities.

*Experience Characterization* - About equal probability to experience affiliation with other user groups and for isolation from sights and sound of humans Opportunity to have a high degree of interaction with the natural environment Challenge and risk opportunities associated with more primitive type of are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and non-motorized forms of recreation are possible.

*Remoteness criteria* - An area designated within ½ mile from better than primitive roads, and railroads.

*Evidence of Humans Criteria* - Natural setting is culturally modified to the point that it is dominant to the sensitive travel route observer. May include pastoral, agricultural intensively managed wildland resource landscapes, or utility corridors Pedestrian or other slow moving observers are constantly within view of culturally changed landscape. There is strong evidence of designed roads and/or highways. Structures are generally scattered, remaining visually subordinate or unnoticed to the sensitive travel route observer. Structures may include power lines, micro-wave installations and so on.

**Semi-Primitive Non-Motorized**

*Setting Characterization* - Area is characterized by a predominantly natural or natural-appearing environment of moderate-to large size. Interaction between users is low but there is often
evidence of other users. The area is managed in such a way that minimum on-site control and restrictions may be present but are subtle. Motorized use is not permitted.

**Experience Characterization** - High but not extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.

**Remoteness criteria** - An area designated at least ½ mile but not further than 3 miles from all roads, railroads or trails with motorized use; can include the existence of primitive roads and trails if usually closed to motorized use.

**Evidence of Humans Criteria** - Natural settings may have subtle modifications that would be noticed but not draw the attention of an observer wandering through the area. Little, or no evidence of primitive roads and the motorized use of trails and primitive roads. Structures are rare and isolated.

**Semi-Primitive Motorized**

**Setting Characterization** - Area is characterized by a predominantly natural or natural-appearing environment of moderate-to large size. Concentration of users is low but there is often evidence of other users. The area is managed in such a way that minimum on-site control and restrictions may be present but are subtle. Motorized use is permitted.

**Experience Characterization** - Moderate probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Opportunity to have a high degree of interaction with the natural environment. Opportunity to use motorized equipment while in the area.

**Remoteness criteria** - An area designated within ½ mile of primitive roads or trails used by motor vehicles; but not closer than ½ mile from better than primitive roads.

**Evidence of Humans Criteria** - Natural setting may have moderately dominant alterations but would not draw the attention of motorized observers on trails and primitive roads within the area. Strong evidence of primitive roads and the motorized use of trails and primitive roads. Structures are rare and isolated.

**Salt Missions Trail NM State Scenic and Historic Byway**

**Historic Rout 66 National Scenic Byway**

The Salt Missions Trail Scenic Byway was designated as a NM State scenic and historic byway in 1994 and Historic Rt. 66 was designated as a National Scenic Byway in 2009.

Salt Missions trail follows old trade routes, rail beds, and footpaths that echo with the hazy activities of yesteryear. It starts at the junction of NM 337 and NM 333, in Tijeras Canyon, which links the Sandia and Manzano Mountains, and eastern New Mexico with the Rio Grande Valley.

Tijeras Canyon has long been an important travel corridor. It provided an east-west passage between the Sandia and Manzano mountains. Apaches traveled through the canyon to raid
communities along the Rio Grande, and later, Hispanic settlers used the canyon for timber and game, and as a trading route.

Between Tijeras and Moriarty, the byway shares the road with Route 66 National Scenic Byway. Now known as NM 333, the old route is commemorated on the signs of many modern businesses. Some original Route 66 architecture remains, but the spirit of Route 66 lives on in the many modern family-operated businesses along the old route.

NM 337 bisects the Cedro project area running a roughly south easterly direction from Tijeras. NM 333 skirts the northern edge of the Cedro project area paralleling Interstate 40 and nearly touching the most northern west corner of the project area west of the Tablazon community.

**Picnic Areas/Trailheads**

The following two picnic areas, which are collocated with trailheads, are within 25 miles from Albuquerque, New Mexico. In addition to picnic facilities, these areas also serve as trailheads for a variety of trails within the project area.

**Oak Flat**

Oak Flat Picnic Area and Trailhead lie one mile east of NM 337 along Oak Flat Road and are roughly at 7,600 feet in elevation. This area contains five reservation-only group picnic sites and the Oak Flat Connector trailhead.

The Oak Flat picnic sites feature four large fields perfect for sports like softball or soccer. Play around the picnic area or take a scenic drive or bike ride on the old South 14 highway, which connects with the facility.

The open field is surrounded by forests with oak, Piñon, Juniper, Ponderosa pines, and plenty of Yucca plants—New Mexico’s state flower.

Several hiking trails extend from the vicinity to nearby overlooks, but the most popular activity at Oak Flat is barbecuing.

Five picnic areas are available for reservations, surrounding four sports fields that are first come, first served. The fields are ideal for a game of softball or kickball, but be sure to bring your own ball and bases.

Picnic sites range in capacity from 60 (the Yucca site) on upward to 800 at the Oak Group site. The sixth picnic site, Pine, has recently been turned into a trailhead to service trails in the area. Although picnic facilities remain in the Pine site, it is no longer available for reservations by large groups.

Oak Flat Picnic Area is receives low-to-moderate use and is a reservation only site. It is seasonally closed from mid-October through mid-May.

**Pine Flat**

Pine Flat Picnic Area and Trailhead are located along NM 337 seven miles south of I-40. Pine Flat is one of several picnic areas on the Sandia Ranger District within close proximity to Albuquerque, making it a popular place for visitors to enjoy a getaway in nature. The picnic area is located in the Manzanita Mountains just 13 miles from Albuquerque at an elevation of about 7,500 feet. This area includes two group picnic sites available by reservation and several
individual picnic sites. Part of the parking lot is scheduled to be expanded and turned into an official trailhead to service trails in the area.

Trails of varying distances and difficulties surround the area. The 13-mile Pine Flats Loop Trail is open to hiking, biking and horseback riding. It begins in the picnic area and connects with multiple trails to make the loop. Some portions are challenging, but the trail goes through scenic areas with spectacular views.

Pine Flat Picnic Area receives low-to-moderate use and is collocated with the Pine Flat trailhead. Pine Flat is a seasonal picnic area and is closed from mid-October through mid-May.

**Cedar Peak Ground**

**Cedar Peak Group Campground**

Cedar Peak Campground is the only developed campground on the Sandia Ranger District. It is a popular place for large groups to access one of the greatest locales for mountain biking in the Cibola National Forest. The campground contains two group campsites that must be reserved in advance. This site receives low use and is seasonally closed from mid-October through mid-May.

The group campground is located in the Manzanita Mountains just 14 miles from Albuquerque at an elevation of about 7,400 feet. The campground is nestled in a Pinon pine and juniper forest, amid the arid, hilly landscape adjacent to the Cedar Trailhead.

The campground offers two large, fully accessible group campsites: Jay and Robin. Jay can accommodate up to 100 people and 27 vehicles; Robin can accommodate up to 150 people and 41 vehicles. Each site is equipped with grills and tables, some of which are covered by picnic shelters. Large campfire circles are also available. Accessible vault toilets are provided. Drinking water is not available at the campground.

**Other Developed Recreation Site**

**Deadman Group Use Area**

The Deadman group use area is located just off of NM 337 approximately one mile south of Pine Flat Picnic Area and trailhead. Deadman has been closed to the public for many years and is in advanced stages of disrepair. Facilities include an access road, parking lot, vault toilet, and a few remaining serviceable picnic tables.

**Motorized Dispersed Camping**

The 2006 Sandia Travel Management Decision Notice established six corridors and one defined location for motorized dispersed camping on the Sandia Ranger District. All of these areas are located within the Cedar Forest Restoration project area. These dispersed camping corridors are described as 40 feet from centerline and identified on the Sandia Ranger District Motor Vehicle Use Map (MVUM) as: 242DC1, 462DC1, 542DC1, 542DC2, 542DC3, and 542DC4. The defined location does not have a unique identifier but is defined as up to 100 feet south of centerline of FR242 and up to 150 feet either side of trail #05602. This 100 by 300 foot rectangle has been delineated with the recent installation of a steel pipe fence. These areas do not currently have any associated facilities; specifically there are no established or official fire rings within the areas.
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**Trailheads**

**Cedro**
Cedro is located adjacent to the Cedro Reservation Campsite alongside FS Rd 252. The trailhead contains two toilets but no other facilities. The nearest trail connection is Cedro Singletrack #05625.

**Chamisoso**
Chamisoso Trailhead lies adjacent to NM-337 on FS Rd 462 approximately 1.5 miles south of Interstate 40. The trailhead does not have any facilities besides a three panel informational kiosk and is primarily used by vehicles with trailers or vehicles off-loading dirt bikes and/or ATV’s. The nearest trail connection is the ATV Bypass # 05617.

**Coyote Trailhead**
Coyote Trailhead lies beyond the Chamisoso Trailhead further up (east) on FS Rd 462. The trailhead, constructed in 2010 has toilets, picnic tables with and without shade structures as well as a three panel information kiosk. The nearest connection is FS Rd 462 (maintenance level II).

**Lower Pine**
Lower Pine is located along the northern end of FS Rd. 462. There are no facilities except for a two panel information kiosk. The nearest trail connection is the Lower Pine trail #05606.

**Mahogany Trail/Juan Tomas**
Although not an official trailhead, the designated camping area (per the district MVUM) near the eastern district boundary along Juan Tomas Rd. is frequently used as a trailhead. Due to size, the area is used by equestrian users with large trailers. There are no facilities here and the nearest trail connections are the Mahogany trail #05602 and Bear Scat #05027.

**Mars Court**
Mars Court is the southernmost trailhead on the district and is located off Raven Rd approximately 1.2 miles west of NM-337. There are no facilities except for a two panel information kiosk. The nearest trail connections are Turkey Trot #05162 and FS Rd 530.

**Otero Canyon**
Otero Canyon is located along NM-337 approximately 4 miles south of Interstate 40. There are no facilities except for a two panel information kiosk. The nearest trail connection is Otero Canyon #05560.

**Tunnel Canyon**
Tunnel Canyon is located along NM-337 approximately 2.3 miles south of Interstate 40. There are no facilities except for a two panel information kiosk. The nearest trail connection is Tunnel Canyon #05145.
Trails

Trails within the Cedro project area (called the Manzanita Mountain Trail System, MMTS) provide for a variety of dispersed recreational opportunities. Use levels range from low to high depending on the area and day of the week (evenings and weekends being highest). Frequent users include experienced and novice motorcycle riders, mountain bicycle riders and to a lesser extent, equestrians, hikers and ATV riders. Elevations range from approximately 6,500 – 8,500 ft. allowing trails to remain free of snow for 9 to 10 months of the year. During months with measurable snow (December through March), a select number of trails at the higher elevations (near Oak Flat and Mars Court) are utilized for winter recreation including cross-country skiing and snowshoeing.

Motorized travel/recreation is permitted on trails (and roads) designated for their use per the district Motor Vehicle Use Map (MVUM) in accordance with 36 CFR 261.13. Currently National Forest System Trails in the project area (80.74 miles total) are designated for the following:

**Table 2: Current NFS Trail Use Designations for MMTS per MVUM**

<table>
<thead>
<tr>
<th>Trail Use Designation</th>
<th>Miles</th>
<th>% of trails</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Motorized</td>
<td>13.00771</td>
<td>16%</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>66.00551</td>
<td>82%</td>
</tr>
<tr>
<td>Motorized vehicles 50 Inches or less</td>
<td>0.821951</td>
<td>1%</td>
</tr>
<tr>
<td>Open to All Vehicles</td>
<td>0.908757</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80.74393</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

In providing “opportunities for a variety of year round recreational experiences consistent with guidelines established for maintaining viable wildlife populations and ecosystem health” (Cibola National Forest Land and Resource Management Plan), the MMTS is managed largely as a semi-primitive, motorized area. This is reflected in the ROS classifications, trail fundamentals, and travel management strategies.

**Table 3: Current Trail Fundamentals Allocation for MMTS**

<table>
<thead>
<tr>
<th>Trail Use Designation</th>
<th>Percentage of MMTS</th>
<th>Trail Class</th>
<th>Managed Use</th>
<th>Designed Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Motorized</td>
<td>16%</td>
<td>2</td>
<td>Pack and Saddle (Horse), Bicycle, Hiker</td>
<td>Pack and Saddle (Horse)</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>82%</td>
<td>2</td>
<td>Motorcycle, Pack and Saddle (Horse), Bicycle, Hiker</td>
<td>Motorcycle</td>
</tr>
<tr>
<td>Motorized vehicles 50 Inches or less</td>
<td>1%</td>
<td>2</td>
<td>All-Terrain Vehicle, Motorcycle</td>
<td>All-Terrain Vehicle</td>
</tr>
<tr>
<td>Open to All Vehicles</td>
<td>1%</td>
<td>2</td>
<td>FOUR-WHEEL DRIVE VEHICLE &gt; 50&quot;, All Terrain Vehicle, Motorcycle</td>
<td>FOUR-WHEEL DRIVE VEHICLE &gt; 50&quot;</td>
</tr>
</tbody>
</table>

In addition to NFST’s, there is an unspecified number and mileage of unauthorized trails within the project area. Often, informal trails are less “sustainable” than their formal trail counterparts,
because of the lack of professional design and construction associated with their creation (Wimpey & Marion, 2010). Their origin comes from a variety of sources including game paths, old roads, unintentional development/informal paths (created by cross-country travel) and in some cases purposely constructed (unauthorized construction). Additionally, informal trails are often indistinguishable from formal trails and may be a source of confusion among trail users.

**Sandia Mountain Wilderness Area**

The Sandia Mountain Wilderness Area is physically separated from the Cedro project area by US interstate 40. The Cedro Project does not propose any activities within the designated wilderness. Proposed mechanical thinning is 1.3 miles from the wilderness boundary at the closest point.

The United States Congress designated the Sandia Mountain Wilderness Area in 1978 and has a total area of 37,877 acres. Despite the fact that these mountains tower above the very nearby sprawl of Albuquerque and despite the fact that the trails of this Wilderness may be more heavily used than any other trail system in the state, Sandia Mountain Wilderness still provides an opportunity to get out of town but solitude may be difficult to find.

The area lies primarily on the western slope of the Sandia Mountains, but it crosses over to the eastern side at the north and south ends. Spruce and fir dominate the high country, with stands of mixed conifers just below. Many raptors migrate through these mountains in spring and fall, sharing their territory with a few mule deer and black bears. Accessible from the tram is the Crest Trail, which runs along 26.54 miles of the main ridge of the Sandias at an elevation averaging 10,000 feet.

There are 100 miles of trail in the Sandia Mountain Wilderness which is primarily used for day use recreation, from walks along flatter terrain to hikes on steep and rugged trails that access the higher ridges.

Sandia Mountain Wilderness Area is very easily accessible to the west from the city of Albuquerque, to the east from Sandia Crest Highway (NM 536), to the south from US Highway 40/Historic Rt. 66, and to the north from NM 165. Unique to the Sandia Wilderness is the bisection of the area by an aerial tramway. The Sandia Crest Tramway further increases public access to the wilderness.

To the east and northeast lies the Sandia Crest Highway, a national scenic byway and a substantial two-lane road that receives a considerable amount of traffic. The associated traffic noise is audible year-round in the Sandia Mountain Wilderness. Additionally traffic noise from US Hwy. 40 and urban noise from Albuquerque infiltrates into the wilderness year-round.

In general, Wilderness values and characteristics of the Sandia Mountain Wilderness diminish in direct correlation to distance from the Wilderness core. This is especially true as there are many off-site intrusions visible from higher vantage points, specifically the urban landscape of Albuquerque at the base of the mountain.

Along the Sandia Crest Highway, opportunities for solitude are encumbered by road noise and heavy visitor traffic to sites in close proximity to this highly traveled Scenic Byway.

**Wilderness Characteristics**

Wilderness character is not defined in the Wilderness Act nor is its meaning discussed in the legislative history of this Act. It is often best described as the combination of biophysical,
experiential, and symbolic ideals that distinguish wilderness from all other lands. The Definition of Wilderness from Section 2(c) of the 1964 Wilderness Act was used to identify four qualities of wilderness related to wilderness character (Landres, et. al, 2008).

The four qualities of wilderness are:

**Untrammeled:** The Wilderness Act states that wilderness is “an area where the earth and its community of life are untrammeled by man,” and “generally appears to have been affected primarily by the forces of nature.” In short, wilderness is essentially unhindered and free from modern human control or manipulation.

**Natural:** The Wilderness Act states that wilderness is “protected and managed so as to preserve its natural conditions.” In short, wilderness ecological systems are substantially free from the effects of modern civilization.

**Undeveloped:** The Wilderness Act states that wilderness is “an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation … where man himself is a visitor who does not remain” and “with the imprint of man’s work substantially unnoticeable.”

**Outstanding opportunities for solitude or a primitive and unconfined type of recreation:** The Wilderness Act states that wilderness has “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” This quality is about the opportunity for people to experience wilderness; it is not directly about visitor experiences per se.

These criteria are used to analyze the effects of the Cedro project; to determine if proposed actions would affect the wilderness characteristics of the Sandia Mountain Wilderness. Use of these criteria is consistent with Monitoring Selected Conditions Related to Wilderness Character: A National Framework (Landres, P. et. al. 2005).

**Existing Conditions**

**Picnic Areas/Trailheads** – Picnic facilities on the Sandia Ranger District experience their highest visitation from Memorial Day through Labor Day holiday weekends. Visitation spikes on the aforementioned holidays as well as Independence Day and during the Albuquerque International Balloon Fiesta held annually generally in the first week of October. The District experiences smaller, more localized, increases in use on Easter and Mother’s Day. Use of areas that provide trail access loosely follows trends associated with utilization of picnic facilities but is more consistent as well as dependent on weather and trail conditions.

Pine Flat and Oak Flat Picnic Areas lie within the project area. The picnic area portions of these areas are administratively closed annually from October 15 through May 15. An administrative closure allows public entry into the area however the site is not maintained for use during the administrative closure. As of 2013, during the winter months, trailhead portions of Pine Flat and Oak Flat will remain open for trailhead parking. It is anticipated that the picnic tables will see some use but will be minimal. Between November and April these areas receive very low use as picnic areas serving primarily as access points to trails and see substantial use by dog walkers. However, during the same months, the total use is low to moderate depending on weather conditions.
The timber stands inside these picnic areas are currently even aged with a primarily mature over-story. The mature age of the over-story has led to the identification and removal of a number of hazard trees in these sites over the past two years.

**Campground** – The Cedro Group Campground falls primarily in the scattered tree meadow and shrub brush Piñon/juniper vegetation types. Additionally the site is bound by persistent Piñon/juniper. Hazard trees have not historically been particularly problematic in Cedro Campground. Much of the vegetation is P/J which generally presents a very low probability of overhead hazards. The persistent P/J at the edge of the campground is of a high density.

**Other Developed Recreation Site** - The facilities in Deadman are in advanced stages of disrepair and the area has been closed to the public for many years.

**Motorized Dispersed Camping** - The seven locations authorized for motorized dispersed camping areas are located in Piñon juniper vegetation types. P/J does not generally present an overhead hazard problem but may occur from time to time. No hazard trees have been identified in these areas. Use of these camping areas is relatively low. Official fire rings do not exist within these areas so when use is occurring, campers are building fires in makeshift stone fire rings or no rings at all. This unregulated behavior led to multiple fire scars throughout the corridors degrading the recreation environment and experience.

**Trailheads** - Most trailheads in the project area include very few facilities with the exception of Coyote and trailheads collocated with Pine Flat and Oak Flat Picnic areas. Coyote trailhead is the newest trailhead of the system being built in 2010 and is generally in good repair although several instances of vandalism and problems with trash from bonfires at the trailhead has led to fewer trees within the site as well as the removal of all fire rings. While use is higher at the Chamisoso, Tunnel and Otero Canyon trailheads on the weekends, most trailheads receive somewhat equal use at non-peak days/times. The few facilities that do exist at trailheads are in somewhat good order.

**National Forest System Trails** - Trails within the project area as with other National Forest System Trails (NFST) have numerous origins such as legacy trails, roads converted to trails, user-created trails as well as trails designed and constructed by agency and/or volunteer staff (GAO, 2013). Presently, trail conditions vary from meeting, exceeding or far below agency standards. Segments of trail below standard are resulting in excessive soil and vegetation loss, tread widening and in some cases unsafe conditions. High levels of degradation are in conflict with the agencies direction for trails to adhere to National Quality Standards (FSM 2353.15).

Trail conditions can often be attributed to environmental factors such as trail grade and soil type (Marion & Leung, 2001). In the MMTS, trail segments with improper location and design such as fall-line trail (the natural line down which water flows), grades exceeding 8-10% and/or improper/lack of undulation often exhibit trail degradation regardless of use type. As further confirmation of the importance of these factors in trail sustainability in the MMTS, a number of trail relocations have been completed in recent years (on Gnasty #05057, West Ridge #05268 and Chamiso #05184 Trails for example) utilizing design and construction practices outlined in the Forest Service Handbook in conjunction with contemporary sustainable design principals contained in literature such as the International Mountain Biking Association’s book “Trail Solutions” (Train, 2004). While results of long term sustainability of these relocations is not known due to the timeframe they have existed, in the past two years (since being completed),
several severe rain events have significantly affected other trails in the area while little to no erosion has occurred on the relocated segments.

For the Cedro project, a number of trail segments in the MMTS have been identified as needing relocation as they are not comprised of location and design elements for long term sustainability. Further, these trail segments are currently exhibiting degradation.

**Table 4: Trail Segments Not Located/Designed for Long Term Sustainability (Shown on Project Map as “Trail Segment To Be Decommissioned”)**

<table>
<thead>
<tr>
<th>Trail Number</th>
<th>Trail Name</th>
<th>Miles of Trail</th>
</tr>
</thead>
<tbody>
<tr>
<td>05617</td>
<td>ATV BYPASS</td>
<td>0.114683</td>
</tr>
<tr>
<td>05184</td>
<td>CHAMISOSO</td>
<td>0.966777</td>
</tr>
<tr>
<td>05619</td>
<td>COYOTE</td>
<td>0.357463</td>
</tr>
<tr>
<td>05620</td>
<td>COYOTE-CHAMISOSO LINK</td>
<td>0.500395</td>
</tr>
<tr>
<td>05618</td>
<td>GAMBLE OAK</td>
<td>0.490713</td>
</tr>
<tr>
<td>05624</td>
<td>JACKALOPE</td>
<td>0.580313</td>
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<tr>
<td>05607</td>
<td>LOWER PINE</td>
<td>0.759976</td>
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<td>05632</td>
<td>MEADOW SINGLETRACK</td>
<td>0.311871</td>
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<tr>
<td>05637</td>
<td>OAK FLAT CONNECTOR</td>
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</tr>
<tr>
<td>05636</td>
<td>PINE LOOP</td>
<td>0.284521</td>
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<td>PINYON</td>
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<td>POKER CHIP</td>
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<td>05543</td>
<td>POWERLINE</td>
<td>0.182776</td>
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<td>05543</td>
<td>POWERLINE</td>
<td>0.349205</td>
</tr>
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<td>05605</td>
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**Existing Conditions – Unauthorized Trails**

The total number and mileage of unauthorized trails is unknown as they are only measured and documented when discovered/identified by agency staff or volunteers in the field. However, from the number of unauthorized trails recently documented within the system, several conclusions can be reached. Similarly to NFST’s, unauthorized trails within the project area are in wide-ranging condition and meet USFS standards at varying levels. While some unauthorized trails provide connections between NFST’s or unofficial access points (in many cases to residential areas), a number of unauthorized trails are dead ends or duplicates of other existing...
trails. In a small number of cases, trails have been purposely constructed to provide a higher degree of trail difficulty such as natural and built obstacles and features.

Unauthorized Trails & Use of Culverts

New Mexico Highway 337, especially the segment from the junction of FR 462 to the junction with FR 242, contains multiple blind corners. The entirety of this stretch is a no-passing zone with a speed limit of 40 mph. However, the average rate of speed is approximately 50-55 mph. Additionally it is not uncommon to see sport bikes reach 60-70 mph; nor is it uncommon to see vehicles pass while in the no-passing zone. This stretch is also popular for road bicycle riding even though the paved portion of the shoulder is narrow; creating additional challenging driving conditions.

Unauthorized trails currently exist with varying degrees of development and use through culverts under NM Hwy. 337 near the Tunnel Canyon and Otero Canyon Trailheads. The MMTS is bisected by NM Hwy 337 which runs north-south. No official pedestrian crossings currently exist for the public to cross this stretch of heavily traveled highway creating a disjointed trail system rather than a comprehensive one with connectivity from east to west. District trail and recreation managers surmise that unauthorized trails under the highway and through the culverts developed over time as an alternative method for trail users to crossover from one side to the other. Through the establishment of these unauthorized trails, the users have identified the culverts as a way to connect the eastern and western halves of the MMTS.

Desired Conditions

Provide road and trail system that includes a broad spectrum of opportunities while also enhancing resource protection through improved trail design, trail connectivity, removal of unauthorized trails and roads and limiting cross-country travel.

Forest thinning and related actions are integrated with recreation design to reduce future illegal cross-country, off-road vehicle travel upon project implementation. Road and trail corridors are thinned in such a manner as to contain traffic to the travel corridors and not invite cross-country travel by opening up large swaths of ground without barriers along the corridors.

Provide for high quality motorized dispersed camping opportunities while limiting the negative effects of fire by establishing/designating campfire rings and requiring their use.

Provide high quality campground and picnic grounds with adjacent trail opportunities, sufficient screening, reduced overhead hazards, and a vibrant uneven-aged forest canopy.

Mitigation Measures

Mitigation Measures for Protection of Trails, Recreational Roads and Recreation Sites in the Analysis Area

Recreational resources (includes trails, roads and recreation sites) in the Cedro analysis area are vulnerable to impacts from mechanical treatment, road construction and improvements, prescribed fire, and from human disturbance associated with these undertakings. Management activities should promote the protection, preservation and in many cases, the improvement of recreation resources.
To achieve the desired future conditions for recreation resources, coordination of mitigating activities with recreation staff prior, during and following treatments will be vital.

Schedule operations as to minimize the impact of closures on trails and developed recreation sites during the peak seasons.

Mitigation Measures for Mechanical Thinning Treatments near NFS Trails

All trails should be flagged prior to implementation of mechanical treatment. It is recommended that a buffer of vegetation should remain along both sides of trails but that hand-thinning following mechanical treatments (or possibly after fuelwooding) may be necessary. Due to the linear nature of trails, it will be necessary to designate (and mark/flag) locations along the trail in which machinery and fuelwood collection vehicles may cross.

All treatments within the boundaries of developed recreation sites should be coordinated with recreation staff. Generally treatments should be limited to hand thinning in order to limit ground disturbance within the sites. Mechanical treatments may be suitable if machinery remains on paved and hardened surfaces.

Mitigation Measures for Hand-Thinning Treatments near NFS Trails

Treatments can be allowed along trail corridors provided:

- Cutting is accomplished using hand tools only.
- Recreation staff designate/assist in designating leave trees.
- Materials removed from the site are removed by hand.
- No use of vehicles or other mechanized equipment within trail corridor.
- Materials are not left on the trail.

Treatments within developed site boundaries should be marked as “take-tree” to limit the amount of residual tree marking paint left in the sites following treatment. Trees outside the boundaries should be marked on the side of the tree facing away from the area for the same reason.

Developed recreation sites contain facilities within striking distance of “take” trees. In these circumstances highly skilled “Class C” type fallers should be used to limit the damage to the facilities within the sites.

Mitigation Measures for Thinning Treatments (mechanical and hand-thinning) near NFS Trails

At the completion of vegetative treatment (particularly prescriptions that involve removal of large quantities of trees, such as grassland restoration projects) there may be need to incorporate small scale trail relocations that more effectively utilize natural anchor points (such as trees and rock outcrops) and do not traverse meadows (as they often lack sufficient anchor points to effectively retain trail users (Farrell & Marion, 2001).

Mitigation Measures for Thinning Treatments on NFS Roads

Treatments (mechanized and hand thinning) adjacent or near to National Forest System Roads should emphasize prohibition/barriers to travel off official routes. This should be done in coordination with other specialists (including timber, fire, roads and scenery) prior to implementation of treatments and fuel-wooding.
Mitigation Measures for Fuel Wood Collection

Areas opened for fuel wood collection should utilize designated vehicle crossings (see as described in the Mitigation Measures for Mechanical Thinning near NFS Trails). Logs, trees or thinned material should not be dragged across or onto trails. Vehicles or other mechanized equipment are prohibited to utilize trails for travel unless coordinated with recreation staff.

If developed recreation sites are to be used for decking areas, the specific locations will be designated through coordination with recreation staff.

Mitigation Measures for Prescribed Burn Treatments

To ensure the protection of recreation resources during prescribed fire treatments, the following should be followed.

- Minimize use/construction of control lines where necessary. Rehab all line cut including re-covering with organic material and remaining slash.
- Vehicles/ATV’s should not be used on trails.
- Protect remaining vegetation along trail corridors.

Mitigation Measures for Road Construction and/or Utilization of Trails as Travel Corridors

Although travel on trails/trail corridors should be prohibited, in some cases utilization of trails will be necessary. Further, in some cases existing road beds will be reopened or the construction/occurrence of new roads will occur. In cases where trail designation following treatment exists, rehabilitation activities including ripping, seeding and blocking will be necessary to narrow trails to their target design parameters (in most cases 18” tread width). In the case that rehabilitation work is not feasible, some short length trail relocations will be necessary. All design/work will be coordinated with district archeologist. On roads in which no trail designation will occur post treatment, ripping, seeding and blocking work will be necessary.

Mitigation Measures for the Use of Livestock to Eradicate Noxious Weeds

Use of livestock has the potential to create several livestock paths that give the appearance of trails. Use of these animals must be limited to the extent that they do not create additional unauthorized trails.

Direct and Indirect Effects

The analysis area for direct and indirect effects on recreation is defined as the Cedro Forest Restoration project area. The time frame is 2–10 years based on the potential effects. However, nearly all of the effects are expected to last for the duration of operations, 2–4 years. This analysis area and time duration were selected because once the management action ceases, so do the majority of effects.

The analysis area for direct and indirect effects on Wilderness is all lands designated as wilderness within sections 15, 16, 17, 18, 20 & 21 of Township 10 North, Range 5 East. This analysis area was chosen because effects to wilderness characteristics would be limited to Wildernes within a reasonable distance from the project area. The Sandia Mountain Wilderness boundary does not coincide with the project area boundary. Only a very small portion of the project area is within two miles of the wilderness boundary.

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The timeframe for the direct and indirect effects analysis is the duration of the project — approximately 2–4 years. This analysis area and time duration were selected because once the management action ceases, so do the effects.

**Alternative A: No Action**

Alternative A proposes “No Action” in the Cedro project area and would not alter the current recreation opportunities. From a trail management standpoint, not relocating segments of trails will allow for continued erosion and negative effects on soil and water resources (Olive & Marion, 2009) as well as trail management objectives (FSM 2350.02) and National Quality Standards for Trails (FSH 2309.18, section 15). Many segments of existing trails are un-repairable due to grades exceeding USFS trail design standards (as well as generally accepted trail design specifications).

Not adding additional trail opportunities to the MMTS will limit the success of the overall system of trails by limiting vital connections and loop opportunities. Well-designed trail networks provide improved recreation experiences. When trail networks fail to provide visitors the access and experiences they require, users may create more unauthorized trails (Wimpey & Marion, 2010). Further, not restricting travel (except foot travel) will allow continued proliferation of unauthorized trails (and in many cases unauthorized construction) in the project area.

No action would continue to allow use of unauthorized trails through culverts as an unofficial connection between the eastern and western halves of the MMTS. Resource impacts associated with these unauthorized trails would continue. Furthermore, a concern exists that not managing the existing use of the culverts (after the agency is aware of this use) with appropriate safety messages and other mitigations could expose the forest to legal concerns.

**Alternative B: Proposed Action**

**ROS**

The vast majority of the project area (98%) is classified as both “Semi-primitive Motorized” (57%) and “Roaded Natural” (41%). The descriptions of relevant classifications are included above. All of the actions associated with the Proposed Action alternative falls within these classifications. Proposed actions in Alternative B will not affect the current ROS classifications.

The proposal to require use of an established fire ring for campfires in the motorized dispersed camping locations is consistent with the ROS classification. The existence and required use of fire rings is consistent with the Semi primitive motorized character as a “subtle” on-site control and restriction.

**Scenic Byways**

The project area is only visible from an extremely short section of Route 66 National Historic and Scenic Byway. It is possible that forest management activities, specifically smoke from planned ignition fire, will be evident from NM 333. However, these activities will be temporary and only visible from an extremely short segment of the national scenic byway.

The Salt Missions New Mexico State Scenic Byway bisects the project area. Management activities will be much more evident along NM 337 than along NM 333. Management activities will be apparent and visible from the roadway. There may be increased vehicle traffic for forest product removal. Smoke and evidence of planned ignition fires will be visible from NM 337. All
of these effects are temporary to last only during actual management activities of within the effects analysis timeframe.

**Closures**

**Picnic Area, Campground, & Trailhead Closures** - Implementation of this project may require temporary but complete closure of Cedro Campground, Pine Flat and Oak Flat Picnic Areas as well as various trailheads during active operations. These areas will be placed under a Forest Supervisor closure order restricting all public access within the defined area. These closures will be temporary, lasting only as long as deemed necessary to provide for the health and safety of the public.

A majority of the activities in the project area will occur between August 1st and March 1st. Impacts of activities on these picnic areas and the Cedro Campground will most likely be limited to August 1st through the season closing date of October 15th. Burning may occur starting with the monsoon season of July through September and continue through the fall and winter. Activities will be timed to reduce the impact to these sites as much as practicable but may still occur during the August-October window.

These timing restrictions are based on other natural resource considerations such as fire restrictions, Ips beetle, and wildlife concerns. Peak recreation season lasts from Memorial Day in late May through mid-October. This represents approximately five months of the year and would be too restrictive to prohibit management activities during the peak season. Measures will be taken to limit the impact of management operations during the latter part of the peak season when activities may occur.

While the above listed areas are temporarily closed during project operations, access will be restricted and the recreating public be will be displaced. However, this displacement will be temporary in nature and operations will be timed to minimize the impact of closures on the recreating public to the extent practicable. Operations may be scheduled to stagger the closures so the areas are not all closed at the same time. Efforts will be made to limit the extent of the closures.

The District provides alternative picnic opportunities along elsewhere on the District. These picnic areas are rarely full and should easily be able to accommodate the additional use from displaced users.

**Trail Closures** - Several trails are located in the project area. Some of these trails may need to be closed to the public at various times while operations are occurring to protect public health and safety. These closures will be temporary in nature and operations will be timed to minimize the impact of closures on the recreating public to the extent practicable. The above listed rational for effects related to picnic areas are adopted for trails.

**Vegetation Management**

Conducting uneven aged vegetation management inside the boundaries of picnic areas allows for higher species diversity and age class diversity of vegetation inside the picnic areas. Age class diversity is important to allow for natural replacement of the over-story canopy while easing the transition between age classes in the over-story. Developed recreation areas with a single age-class of shade trees often experience long periods of time between the death of the mature trees and when the younger cohort is mature enough to replace the shade. Although hazard trees are
uncommon in Piñon juniper, active vegetation management will provide an opportunity to remove trees with evidence that they may become an overhead hazard in the near future.

A thinner forest may impact recreation experience insofar as it alters the visual environment. A reduction in screening could lead to a reduced feeling of privacy within the picnic areas. Care will be taken to retain the existing underbrush screening between picnic tables in developed areas. A thinned forest may also lead to increased sight distances into the canopy which could lead to a reduced feeling of seclusion. Additional discussion on visual impacts can be found in the scenery specialist report.

Wilderness

The limited scope of this project is not expected to have any effect on the long-term ecological processes within the Sandia Mountain Wilderness. Additionally, the project area is not directly adjacent to the SMWA, with the two separated by Interstate 40; the possibility of direct impacts is severely limited. Ecological effects of the project are discussed in specific resource analyses within the EA and specialist reports for Wildlife, Water Resources, and Soils.

A short-term increase in air pollutants would be expected due to exhaust from trucks, skidders, harvesting equipment, and planned ignitions. These are temporary sources of emissions and particulate matter; they would occur in the context of larger sources such as vehicle use in Albuquerque and along Sandia Crest Highway, NM 165, and US 40 around the Wilderness periphery (Natural).

SMWA and the Cedro project lie in different watersheds therefore the use of herbicides in the Cedro project area does not pose a threat to the natural character of the SMWA. It is highly improbable that the localized application of liquid herbicides would find their way inside the SMWA. Any potential that may exist for these herbicides to be transported by rain would not be able to then transport them uphill from Tijeras pass into the SMWA.

Noise (Wilderness and Non-Wilderness)

Noise associated with harvest activity may be apparent to visitors within one or two miles of harvesting operations (Neitzel & Yost, 2003, p. 15). The distance is generally based on the average decibels produced by machinery and measured over distance from the specific source. The sound-to-distance estimate does not take into account the buffering effects of vegetation, wind, or topography; these would further reduce the sound (Timerson, 1999, p. 5; Claflin, 2008). Noise effects would be limited to the area surrounding harvest units and would be short-term in nature, limited to the duration of the vegetation management activities (Outstanding opportunities).

Assuming the maximum distance of two miles, it is possible that noise could be audible in a small corner of the Sandia Mountain Wilderness. However, it is important to note that all of the management activity would not occur at one time, rather over the duration of the entire project timeframe, drastically reducing the percent of the Wilderness area affected at any one time.

The effects on the existing opportunity for solitude resulting from mechanical noise would be short term and limited in scope due to the very limited amount of the Wilderness within a close proximity to the Cedro project. Effects from noise to solitude should be viewed in the context of the existing condition. Noise associated with Cedro operations would be very similar to other vehicle noise heard within this Wilderness, with the distinction being that the majority of the other sources of noise are permanent contributors (i.e. vehicle traffic along US 40). The Cedro
project would be short term in nature and would not persist, restoring existing opportunities for solitude at the close of operations (Outstanding opportunities).

Beyond the considerations its impact on the wilderness, noise associated with harvest operations may be apparent to visitors throughout the project area. The above listed rational also applies to the effects of this noise on recreation users outside of the wilderness area.

**Trails**

Implementation of trail reroutes will limit further erosion/loss of soil by incorporating sustainable location and design elements. Trail additions to the MMTS will allow for better recreation experiences through loop opportunities and connections and limit development of unauthorized trails. Removal of unauthorized trails and limiting cross-country travel will aid in limiting unauthorized construction and further degradation of resources and reduce confusion by reducing the number of unidentified trail junctions.

Creating official trails through the culverts under NM Hwy. 337 would establish a comprehensive connected trail system while substantially reducing the chances of trail users being struck by vehicles traveling at extremely high rates of speed. District recreation managers believe the chances of a trail user being involved in a vehicle collision while crossing the highway are far greater than their chances of being subjected to dangers of flash flooding.

**Limiting Cross-Country Travel**

The environmental conditions of the southwestern United States (soil, climate, vegetation, etc.) allow for easy establishment and perpetuation of unauthorized trails created by users traveling cross-country. The establishment of unauthorized trails within the project area, and throughout Sandia Ranger District, is primarily unintentional, as cross-country travel occurs multiple times over a single route. Likewise, once established, the existence of these unauthorized trails is perpetuated primarily through continued use for cross-country travel and not intentionally maintained (to remain open) by Forest Service management actions or unauthorized trail maintenance by members of the public.

The effects of unauthorized trails can be viewed in two ways, that of their environmental effects and of their social effects. Generally speaking these impacts are negative from both management perspectives.

**Environmental Effects**

As mentioned above in the existing conditions section, trail conditions can often be attributed to environmental factors such as trail grade and soil type (Marion & Leung, 2001). Trail segments with improper location and design such as fall-line trail (the natural line down which water flows), grades exceeding 8-10% and/or improper/lack of undulation often exhibit trail degradation regardless of use type.

By definition, unauthorized trails are not designed and are therefore extremely unlikely to exhibit the characteristics of sustainable trail design (Wimpey & Marion, 2011). The inverse however is much more likely to be true; unauthorized trails more often exhibit characteristics that contribute to degradation of natural resources. Unauthorized trails within the project area are in wide-ranging condition and meet USFS standards at varying levels.
Continuing to allow cross-country travel equates to continuing to allow the establishment of more unauthorized trails and the perpetuation of those that already exist (Wimpey & Marion, 2011). Since unauthorized trails are not designed to be sustainable, continuing to allow the existence and use of unauthorized trails (cross-country travel) will therefore have negative effects on the environmental conditions within the project area.

The proposal to restrict cross-country travel by all means except by foot will positively affect the environmental conditions within the project area. Motor biking and mountain biking are the primary uses of the MMTS and, to a lesser extent, equestrian and pedestrian use as well. Motorized vehicles are already restricted to the designated trail system pursuant to the 2008 Travel Management Decision and Motor Vehicle Use Map. Of the currently remaining allowable cross-country uses, anecdotal evidence suggests that pedestrian travel is the least likely to establish new or perpetuate existing unauthorized trails within the project area. Additionally the District believes that some form of cross-country should continue to be allowed within the project area; the logical choice is to continue to allow cross-country travel by foot.

Social Effects

Once unauthorized trails are established, it is difficult for users to distinguish between National Forest System Trails and unauthorized trails (Wimpey & Marion, 2011). Users wishing to stay on the NFS trails may find it difficult to navigate the spaghetti network of trails and find themselves disoriented or lost.

Limiting cross-country travel for all but pedestrian travel will assuredly alter the status quo recreation opportunity within the Cedro project area. However, restricting cross-country travel of particular user groups for resource protection is consistent with direction contained in the Forest Service Handbook and Manual, as well as, the ROS classification and the Cibola Land and Resource Management Plan. Additionally, it is a well-established practice throughout the US Forest Service including the Sandia Ranger District.

The Travel Management Final Rule was published in the Federal Register on November 9, 2005 and went into effect one month later. The Sandia Travel Management Decision was signed in 2008 prohibiting motorized cross-country travel on the Sandia Ranger District and establishing a motorized trail network within the boundaries of the Cedro Project Area.

While the Travel Management Rule specifically addresses cross-country travel by motor vehicles, the rational that it was based on can easily be applied to other forms of travel if they create the same type of resource problems.

The following are direct quotes from the travel management rule (36 CFR 212, pg. 68264). If one replaces “motor vehicle” and “motorized” with “bicycle” or “equestrian” one can see that the logic of restricting non-pedestrian traffic can easily be transferred to other forms of traffic that are causing similar natural resource degradation (emphasis added).

The clear identification of roads, trails, and areas for motor vehicle use on each National Forest will enhance management of National Forest System lands; sustain natural resource values through more effective management of motor vehicle use; enhance opportunities for motorized recreation experiences on National Forest System lands; address needs for access to National Forest System lands; and preserve areas of opportunity on each National Forest for non-motorized travel and experiences.
Motor vehicles are a legitimate and appropriate way for people to enjoy their National Forests—in the right places, and with proper management.

Restricting bicycles to National Forest System Trails is not a management concept unique to Sandia Ranger District. The Red Rock Ranger District of the Coconino National Forest in Sedona, Arizona restricts cross-country travel by bicycles as do the Gallatin and Lolo National Forests in Montana (Austin, 2013; Erickson, 2013; Stewart, 2013). Likewise, restricting or prohibiting the use of horses in specific areas is a recognized management strategy. This statement is supported by the fact that prohibiting or restricting the use of horses is established as an explicit special-order category and can be found at 36 CFR 261.58 (aa).

The small portion of mountain bikers and equestrians who enjoy primitive trail or cross-country travel experiences will be displaced. While equestrians may find alternate opportunities for cross-country travel in the Sandia Mountain Wilderness Area, mountain bikes are statutorily prohibited in wilderness. On a short term basis, mountain bike cross-country traffic may be displaced to areas of the Sandia Ranger District north of Interstate 40. However, the Placitas Area Trails Project and La Madera Forest Restoration Project will both include the same proposal to restrict cross-country travel by mountain bikers and equestrians. This will be discussed further in the cumulative effects section below.

Once unauthorized trails are established and allowed to persist for many years it can be extremely difficult to prevent trail users from continuing to use them. It is possible for this particular management challenge to be nearly impossible, especially if sufficient alternatives are not presented to satisfy the demand.

In this project, unauthorized trails leading through the culverts and under NM 337 is just such a situation. The overwhelming demand for connectivity between the east and west sides of the MMTS would make it nearly impossible to close off the unauthorized trail if it is not designated as an official trail. This is especially challenging considering the options if the district found a successful way to stop the use of the culverts. The demand for connectivity is so strong that trail users would then choose to cross NM 337 and chance life-and-limb by dodging traffic traveling at high rates of speed.

Establishing official trails through the culverts meets the desired condition of this project (trail connectivity) but it also creates a recreation management situation that is both reasonable and sustainable.

Planned Ignition Fire Impacts to Recreation

Smoke - Planned ignition burns to reduce fuel loads will produce smoke. This smoke has the potential to negatively impact the recreation experience of those recreating in close proximity to the burns. During the periods of time when smoke is in the air recreationists may be displaced. This impact will be temporary and only occur during active burning and shortly thereafter. The public will be notified prior to ignition via standard means of press release and signs.

Evidence of Fire - Following planned ignitions the visual aesthetics will be noticeably altered and may contribute to an altered recreation experience. Visual aesthetics are covered in the scenery specialist report.

Other considerations
Evidence of harvest operations may be evident to those driving for pleasure along NM 337. Harvesting equipment such as masticators may be seen in the area or in transport to and from the project area. The visual appearance of the forest will also change. Management of scenic resources is discussed in the Scenery report.

Area closures and management actions may limit unconfined recreation such as cross-country travel for wildlife viewing, hunting, and personal exploration. As with trail and picnic area closures, these closures will be temporary and limited to the time necessary to protect public health and safety. These temporary closures may displace these types of forest users for short periods. Additionally, the activity and sounds of management activities may disturb and displace some wildlife from the area. This displacement may alter the experience of visitors hoping to view wildlife during their visit. Wildlife is further discussed in the biological evaluation of this project.

**Alternative C: No Herbicide Treatments**

The exclusion of herbicide treatments does not substantially alter the direct or indirect effects of the proposed action on recreation resources as described above for Alternative B. Therefore, most of the effects of Alternative C are the same as Alternative B.

Without the ability to utilize herbicides more intrusive methods must be used to achieve the same results. The additional effects on recreation from these methods are minimal and described below.

- **Manual:** digging, clipping, pulling, or cutting with hand tools (shovels, chainsaws, hoes, or similar tools).
  - No additional effects
- **Mechanical:** mowing or other methods using heavy machinery.
  - Use of mechanized equipment will increase the sights and sounds of forest management. The short duration these activities do not create a significant effect to recreation resources.
- **Controlled grazing:** using sheep, goats, or cattle grazing to consume the tops of target plants thereby reducing their ability to disperse seeds and spread to other areas.
  - Use of livestock has the potential to create several livestock paths that give the appearance of trails. Use of these animals must be limited to the extent that they do not create additional unauthorized trails. If limited in scope, these paths will not develop presenting no effect to trail use or management.
  - The sights, sounds, and smells of the presence of livestock will slightly alter the recreation experience for some users and go unnoticed by others. The limited and localized use of livestock does not significantly affect the recreation experience.
- **Prescribed burning:** torching or burning target plants.
  - The added use of prescribed fire beyond fuel reduction treatments will increase the impact to recreation users. The additional treatments with fire will create more sights (burn scars, smoke) and smells (smoke) of fire activity. However, effects are limited in scope to the area adjacent to the burn and in time limited to a couple of days for...
smoke and a couple of months for burn scar visibility. These are not significant effects on the recreation resources.

- Cultural: planting or seeding, often immediately after treatments that expose bare soil, where there is a lack of native seed sources to re-establish desired plants.
  - No additional effects.

**Cumulative Effects**

The analysis area for cumulative effects on recreation and wilderness are the same as the respective analysis areas for direct and indirect effects. The analysis area for cumulative effects relating to cross-country travel is the entire Sandia Ranger District.

The time frame is the past (10 years), present, including ongoing activities and the foreseeable future (10 years; 2004–2024). This time frame was chosen because it is a reasonable length of time for measuring past effects and for projecting upcoming projects.

**Past projects**

The Cedro Relocations Phase 1 Project lies within the Cedro project area. Implementation of this project began in 2010 and includes relocation of several segments of trails. The relocation of segments of the Mahogany Trail #05602 (1.77 miles of relocations replacing 1.57 miles of trail) still remain as part of this project and are expected to be completed by fall of 2013.

The Manzanita Mountains Trail System Improvements Project lies within the Cedro project area. The project, will add/designate new trails (some unauthorized trails, some new construction) and implement relocations on existing trails totaling approximately 2.13 miles of non-motorized trail and 6.70 miles of trails open to motorcycles (approximately 0.29 miles of non-motorized trail will be decommissioned). Additionally, the project will implement upgrades to the Pine Flat trailhead.

The Talking Talons Trail Project will construct approximately 3.01 miles of non-motorized, interpretive trail (to the west of the Lower Pine Trailhead and north of Coyote Trail #05619) within the project area (in conjunction with the Talking Talons CFRP project).

Tablazon and Isleta CFRP projects are not forest restoration projects and did not include any recreation management activities as part of the projects. Additionally, these projects have very limited direct and indirect effects on recreation that are short term in nature.

**Future projects**

No additional projects are currently planned or are foreseen to be planned inside the Cedro project area.

The La Madera Forest Restoration Project will be a large comprehensive forest restoration project covering the Sandia Ranger District north of I-40. Planning for this project is anticipated to begin in FY’2014 with a signed decision and implementation in FY’2015. In addition to vegetation management, the La Madera project will propose recreation and trails enhancement activities. It is unlikely that implementation of Cedro and La Madera projects will overlap therefore limiting the chance of negative cumulative effects on recreation resources. La Madera and Cedro will not have overlapping project areas and will be separated by Interstate 40.
Cross-Country Travel

Following the implementation of the proposed restrictions to cross-country travel contained in this project, the Placitas Area Trails Project, and the La Madera Forest Restoration Project, cross-country travel with a mountain bike will be prohibited everywhere on the Sandia Ranger District. Likewise, equestrian cross-country travel will be prohibited everywhere on the Sandia Ranger District except within the Sandia Mountain Wilderness Area.

While this may have a negative cumulative (social) effect on mountain bikers hoping for a more primitive mountain biking experience the cumulative positive (environmental) effects of prohibiting such activity far outweigh the social concerns. Additionally, this project and the two future projects propose to establish a comprehensive, logical, and sustainable Forest System Trail network that meet the needs of a majority of trail users. Once complete, it is anticipated that the comprehensive trail network will substantially reduce the number of users who desire to travel cross-country on mountain bikes. Therefore, the cumulative (social) effect on mountain bikers is anticipated to be limited.

Cross-country travel will continue to be allowed by equestrians within the 37,877 acre Sandia Mountain Wilderness Area. By allowing this activity in the SMWA, the District is managing for the wilderness characteristic of outstanding opportunities for primitive and unconfined recreation. Providing this opportunity on approximately 47% the Sandia Ranger District (open to public entry) constitutes a significant opportunity to continue equestrian cross-country travel on the District. Additionally, equestrian travel is uncommon in many parts of the La Madera and Placitas project areas. Therefore, the cumulative (social) effect to equestrian users is anticipated to be limited.

No negative cumulative (environmental) effects are anticipated.
References


Appendix A: FSH & FSM Trail Management Policy

Forest Service Manual (FSM) & Forest Service Handbook (FSH) Policy Applicable to Trail Management


Objectives (FSM 2353.02):

- Provide trail-related recreation opportunities that serve public needs and that meet land management and recreation policy objectives.
- Provide trail-related recreation opportunities that emphasize the natural setting of NFS lands and that are consistent with land capability.
- Provide trail access for management and protection of NFS lands.

Policy (FSM 2353.03):

- Provide a variety of trail opportunities, settings, and modes of travel consistent with the applicable land management plan.
- Establish outstanding and qualified trails or trail networks as components of the National Trails System.
- Emphasize long-term cost effectiveness and need when developing or rehabilitating trails.
- Provide a trail system that is environmentally, socially, and financially sustainable.
- Designate trails for motor vehicle use, following the process identified in 36 CFR 212, Subpart B, and direction in FSM 7710.
- Ensure that all new or altered trails with a Designed Use of Hiker/Pedestrian that connect directly to a trailhead or currently accessible trail comply with applicable federal accessibility guidelines for trails and the FSTAG (FSM 2353.01a, para. 5-7; 2353.01b, para. 5-6; and 2353.01d, para. 1).

Administration of NFS Trails (FSM 2353.1)

Comply with the direction in FSH 2309.18, Trails Management Handbook.

Trail Management Objectives (TMOs) (FSM 2353.12)

Manage each trail to meet the TMOs identified for that trail, based on applicable land management plan direction, travel management decisions, trail-specific decisions, and other related direction, as well as management priorities and available resources.

Trail Fundamentals (FSM 2353.13)

Identify the five Trail Fundamentals for each NFS trail or trail segment based on applicable land management plan direction, travel management decisions, trail-specific decisions, and other related direction. Each Trail Fundamental is addressed in FSH 2309.18, section 14.
Recreation Specialist Report- Cedro Landscape Restoration Project

Recreation Opportunity Spectrum (ROS) (FSM 2353.14)
Use the ROS in trail planning, development, and operation (FSM 2310 and FSH 2309.18, Trails Management Handbook, chapter 10).

National Quality Standards for Trails (FSM 2353.15)
Apply the National Quality Standards for Trails in the planning, construction, maintenance, condition assessment, and management of NFS trails, in accordance with FSH 2309.18, section 15.

Trail Fundamentals (FSH 2309.18 section 14)
The Trail Fundamentals are five concepts that are the cornerstones of Forest Service trail management, including Trail Type, Trail Class, Managed Use, Designed Use, and Design Parameters.

For each NFS trail or trail segment, identify and apply the Trail Fundamentals in accordance with FSM 2353.13 and sections 14.1 through 14.5.

14.2 - Trail Class

The Trail Class is the prescribed scale of development for a trail, representing its intended design and management standards. Trail Classes are general categories reflecting trail development scale, arranged along a continuum.

There are five Trail Classes, ranging from the least developed (Trail Class 1) to the most developed (Trail Class 5):

1. Trail Class 1: Minimally Developed
2. Trail Class 2: Moderately Developed
3. Trail Class 3: Developed
4. Trail Class 4: Highly Developed
5. Trail Class 5: Fully Developed

- Use Trail Classes to identify the applicable Design Parameters for meeting the National Quality Standards for Trails.
- Class descriptors reflect typical attributes of trails in each class. Local deviations from any Trail Class descriptor may be established based on trail-specific conditions, topography, or other factors, provided that the deviations are consistent with the general intent of the applicable Trail Class.

14.3 - Managed Use

Managed Uses are the modes of travel that are actively managed and appropriate on a trail, based on its design and management.

14.4 - Designed Use
Designed Use is the Managed Use of a trail that requires the most demanding design, construction, and maintenance parameters and that, in conjunction with the applicable Trail Class, determines which Design Parameters apply to a trail.

14.5- Design Parameters

Design Parameters are technical guidelines for the survey, design, construction, maintenance, and assessment of a trail, based on its Designed Use and Trail Class.

1. Design Parameters reflect the design objectives for NFS trails and determine the dominant physical criteria that most define their geometric shape. These criteria include:
   A. Tread Width
   B. Design Grade

2. Local deviations from any Design Parameter may be established based on trail specific conditions, topography provided that the deviations are consistent with the general intent of the applicable Trail Class.

National Quality Standards for Trails (FSH 2309.18, section 15)
In accordance with FSM 2353.15, apply the National Quality Standards for Trails in planning, constructing, and managing NFS trails and related trail projects.

- The National Quality Standards for Trails establish desired outcomes for NFS trails managed at a full-service level.
- Take mitigating steps if conditions decline to the point where visitor’s health or safety is threatened. Examples include repairing the trail, portions of the trail, or associated trail structure or removing trail structures that are in disrepair and no longer needed.
- The National Quality Standards for Trails apply to NFS trails and associated trail structures.

National Quality Standards for Trails - Key Measure: RESOURCE SETTING

- The trail, use of the trail, and trail maintenance do not cause unacceptable damage to other resources.
Appendix B: Maps