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Environmental Assessment

MANAGEMENT OF SOUTH COLONY BASIN

San Carlos Ranger District
San Isabel National Forest
Custer County, Colorado

T24S, R73W, Sections 11,12,14,15 & 16

View up South Colony Creek to Crestone Needles, Sangre de Cristo Range, San Isabel National Forest, Colorado. Submitted June 1920, by W. I. Hutchinson, *U.S. Forest Service Headquarters History Collection*

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SUMMARY

The San Carlos District of the San Isabel National Forest is proposing changes to current regulations, vehicle access, and recreational uses of the South Colony Basin area. South Colony Basin is located approximately 12 miles southwest of Westcliffe, CO. The following actions are being considered for implementation:

- Close the South Colony jeep road to vehicle travel approximately 2.5 miles below the current terminus of this road.
- Construct a parking area, toilets, and camping facilities near the proposed road closure point at the lower stream crossing.
- Prohibit campfires within ½ mile of Lower and Upper South Colony lakes.
- Restrict camping within ½ mile of Lower and Upper South Colony lakes to "designated campsites" only.

These actions are needed to protect the physical and biological environment surrounding the lakes, streams, trailheads, and routes to the nearby peaks from the steadily increasing levels of recreation use in South Colony Basin.

The Forest Service also evaluated the following alternatives:

- *Alternative A* – The Forest Service's current regulations and management activities in South Colony Basin would continue unchanged. The South Colony road would remain open for vehicle travel to the existing road closure at the upper stream crossing. No trailhead facilities would be constructed and there would be no new restrictions on camping or campfire use.
- *Alternative B* – is the proposed action described above
- *Alternative C* – implements the restrictions on camping and campfire use described in the proposed action above, but keeps the South Colony road open for vehicle travel to the existing road closure at the upper stream crossing. Trailhead and camping facilities would be constructed near the current road terminus.

After a formal 30-day period for additional public review and comment, the San Carlos District Ranger will decide which of these alternatives best balances recreational opportunities with protecting the natural environment in South Colony Basin.

INTRODUCTION

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action or alternative actions. The document is organized into four parts:

- *Introduction:* The section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also summarizes how the Forest Service informed the public of the proposal and the public's response.
- *Comparison of Alternatives, including the Proposed Action:* This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes possible mitigation measures.
- *Environmental Consequences:* This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource area. Within each section, the affected environment is described first, followed by the effects of the No Action Alternative that provides a baseline for evaluation and comparison of the other alternatives that follow.
- *Agencies and Persons Consulted:* This section provides a list of preparers and agencies consulted during the development of the environmental assessment.
- *Appendices:* The appendices provide maps and/or more detailed information to support the analyses presented in the environmental assessment.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the San Carlos Ranger District Office in Canon City, Colorado.

Background

South Colony Basin and the surrounding 14,000-foot peaks, unequivocally receive a higher amount of recreation use than any other area in the Sangre de Cristo Range. Trailhead register data indicate 4,000-4,500 persons visit the small (1500 acre) upper basin at the head of the South Colony drainage during the summer season. In the early 1990s, recreational use was estimated at *only* 2,500-3,000 persons per season.

On average, 40-50 persons are in the basin on a typical summer weekday, with 90-150 persons on typical weekends. One holiday weekend, the number of visitors counted by Forest Service personnel exceeded 400. Over 80% of these visitors intend to climb one of the surrounding peaks. Hunting, fishing, riding ATVs, and 4-wheel driving are the

primary recreational motivations for less than 10% of the visitors in South Colony Basin. Over 50% of the visitors have primary residences in the Denver metro area, followed by residents of El Paso County.

Since 1997, the Forest Service has worked in partnership with Rocky Mountain Field Institute, Colorado Fourteeners Initiative, Colorado Outward Bound, and other educational and environmental service organizations to reconstruct trails and climbing routes within the basin, stabilize eroding alpine slopes (created by user-created trails), inventory and restore undesirable campsites and social trails. To date, $500,000 (of mostly non-federal funds) and 40,000 volunteer hours have been spent restoring long-term recreation impacts in South Colony Basin. These trails, climbing routes, and stabilized slopes will require regular maintenance to protect our investment in these restoration treatments. The routes are standing-up to current levels of use, but will likely deteriorate if recreation use continues to increase at the present rate.

Funding opportunities through private foundations for continued trail maintenance and slope restoration are very limited. Forest Service funding for trail maintenance has been "flat" for the past several years and is not expected to see major increases for the foreseeable future. Available funding for Forest Service backcountry patrols, performing enforcement and education of regulations and etiquette, has similarly been strained.

Nearly 100 primitive campsites have been inventoried along the road and in the upper basin. Many of these campsites are expanding in size and in area denuded of ground cover. Evidence of human feces can be found around the trailhead and popular campsites.

The timberline forests around Lower Colony Lake are showing signs of over-use from firewood gathering. Most of the dead lower branches have been broken-off live trees near campsites. There are very few dead standing trees (wildlife habitat) near the upper basin camping areas. Consequently, campers are cutting and attempting to burn gnarled old Bristlecone pines and Subalpine firs that appear to be dead, but are in fact still green. In contrast the productive forested areas of the lower basin have significant amount of dead timber available for campfires.

During the late 19th century, a wagon trail was built to the mines and exploration pits above Lower Colony Lake. The current road was constructed in the 1950s to access a mining claim on the east flank of Broken Hand Peak. The last ½ mile below the mine was often blocked by avalanches until mid-July and did not allow for off-road parking areas or adequate turnarounds. The press of summer traffic would frequently jam this last section of road, creating problems for vehicles trying to enter or exit. In 1995, the Forest Service closed the last ½ mile of the South Colony Road to motor vehicles (except for emergency access). The road closure gate was installed just above the upper stream crossing. The wide spots in the road near the closure point were enlarged to accommodate about 30 vehicles. The purpose of this closure was to create a safe and efficient turnaround and provide adequate parking.

With time, weather and traffic, the South Colony road has become an extremely rough boulder strewn road. Most vehicles "hit bottom" at least a couple times while traversing this 5.5-mile jeep road. Vehicles routinely suffer minor frame and body damage on this road. Driving this 4-wheel drive road is a rough 70 - 80 minute trip each way. The road

has gotten rougher over the years. Roughly 50% of the visitors park their vehicles at the bottom of the mountain, or ½ way to the top, and walk the remaining distance to the lakes.

Proposed Action

The Forest Service is proposing the following changes to regulations, vehicle access, and recreational uses of the South Colony watershed:

- Close the South Colony jeep road to vehicle travel approximately 2.5 miles below the current terminus of this road.
- Construct a parking area, toilets, and camping facilities near the proposed road closure point at the lower stream crossing.
- Prohibit campfires within ½ mile of Lower and Upper South Colony lakes.
- Restrict camping within ½ mile of Lower and Upper South Colony lakes to "designated campsites" only.

Purpose and Need for Action

The proposed action responds to the goals and objectives outlined in the Pike and San Isabel Forest Plan, and helps move South Colony Basin towards desired conditions described in that plan. Specifically, the purpose of this initiative is to:

- Maintain South Colony Basin in a natural and untrammeled condition while accommodating human uses.
- Offer recreational opportunities within a natural setting that enhance the visitor's outdoor experience; including opportunities for challenge, self-reliance, and risk.
- Provide for public health and safety commensurate with the backcountry setting.
- Minimize the costs for maintaining roads, trails and trailhead facilities.

This action is needed, because the physical and biological environments surrounding the lakes, streams, trailheads, and routes to the nearby peaks are being degraded by steadily increasing levels of recreation use in South Colony Basin. Backcountry use in the upper basin is exceeding Forest Plan standards for "crowding" every summer weekend and some weekdays. The number of backcountry campsites surrounding the upper trailhead parking area and in the upper basin has nearly doubled since 1994. Live vegetation is being used for firewood, human waste is not being controlled and disposed of properly, and the road that provides access continues to decline.

Escalating urban populations along Colorado's Front Range will continue to boost recreation use at popular backcountry areas, including South Colony Basin. While much has been done over the past decade to restore the environment, reconstruct trails, and

adapt campsites to withstand more use, this concerted level of restoration activity cannot be sustained indefinitely. Management actions must also address limiting the overall numbers of visitors and/or modifying the visitor's activities to lessen impacts to the environment.

Public Involvement

One of the first steps in the scoping process for this South Colony Basin Management proposal was to identify members of the public who could be affected by this proposal, or who might have an interest in the decisions made for this proposed project. A list of individuals, groups, organizations, and agencies who were notified of the proposed project and invited to comment on it, may be found in the project files located at the San Carlos District Office.

Scoping letters were sent to these individuals and organizations during March 2006, notifying them that these changes in management were being proposed for the South Colony Basin. The nature of the decisions to be made and the issues involved were discussed in this correspondence.

Notification of this proposed route stabilization project was included in the Schedule of Proposed Actions for the Pike and San Isabel National Forests. These schedules are mailed quarterly to the approximately 400 individuals and organizations that have asked to be included on this mailing list. The Scoping Letter was also sent to the following 5 public media outlets:

- Pueblo Chieftain
- Colorado Springs Gazette
- Wet Mountain Tribune
- Crestone Eagle
- KRCC radio Colorado Springs – a PBS associate with translator stations in the Wet Mountain and San Luis Valleys.

Articles or Editorials discussing the proposed management changes for South Colony Basin appeared in the March 20 and April 13 editions of the Wet Mountain Tribune. On April 7, an article in the Crestone Eagle outlined management issues related to public access into the northern part of the expanded Great Sand Dunes Park, and to the 14,000-foot peaks surrounding South Colony Basin. The Colorado Springs Gazette published an article about the proposed restrictions in South Colony Basin on October 13.

On July 24, Paul Crespin presented the proposed management changes for South Colony Basin to a public meeting of the "North Entrance Study Group" in Crestone, CO.

Letters, e-mail comments, and transcribed phone conversations were received from over 70 individuals and organizations in response to this proposal. These public comments, scoping letters, and meeting notes are part of the project file for the Management of South Colony Basin. The project file is located at the San Carlos Ranger District Office, 3170 Main Street, Canon City, CO 81212.

Using comments from the public, other agencies, and team members, the interdisciplinary team developed a list of issues to address.

Issues

The Forest Service separates issues into two groups: significant and non-significant. Significant issues are defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues encompass those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)…" The interdisciplinary team identified five significant issues raised during scoping. These issues include:

Issue #1: Making access to South Colony Basin less convenient may deflect recreation use with the associated recreation impacts to other areas.

Making access to South Colony Basin less convenient, may cause more peak climbers to access the Crestone Peaks from the west side of the Sangres through the Cottonwood or Spanish Creek drainages. Deflecting recreation use to the west side of the Sangres will create resource and trespass problems. These drainages have only informal trail systems that will not support increased use, without causing damage to the environment. Access to these west side drainages involves crossing private property, where no public easement or trailhead facilities exist.

The Baca Grande Water and Sanitation District has source water intakes in Cottonwood Creek, Spanish Creek, Willow Creek, and the South Crestone Creek hydrologic basins. Diversion of recreation use from the South Colony access could transfer some of the sanitation problems to the west side drainages, potentially affecting the community's health and safety.

Closing an additional 2.5 miles of the South Colony Road to vehicle use may encourage more climbers and campers to access Humboldt Peak through North Colony Basin. North Colony Basin is a comparatively pristine basin with only an intermittent trail at its upper reaches, few established campsites, and excellent opportunities for solitude. Increasing recreation use could disrupt these opportunities for solitude and create more impacts to the relatively pristine environment of North Colony Basin through the establishment of new user-created campsites and trails.

Closing an additional 2.5 miles of the road to vehicle use might actually encourage **more** backcountry camping around the lakes. Currently the road is closed only 1.3 miles from the lower lake. Many climbers currently consider the short distance to be gained by backpacking into the lakes is not worth giving-up the comfort of car camping. If climbers must throw-on a backpack to get within "striking distance" of the peaks, they might just decide to camp as close to the start of the summit routes as possible.

The location of the proposed new trailhead / campground at the lower stream crossing will be in habitat that is generally inhabited by a larger number of bears (versus the current trailhead / camping area). This may lead to an increase in bear – human conflicts.

Issue #2: Loss of motorized recreational opportunities.

The 2.5-mile segment of the South Colony Road that is proposed for closure offers a moderately challenging four-wheel drive experience for most visitors. There is concern that the Forest Service is proposing to sacrifice motorized recreation opportunities to solve overuse problems in the Wilderness.

Issue #3: Loss of easy day-trip opportunities.

Closing an additional 2.5 miles of the South Colony road eliminates the opportunity for easy short trips into the lake basin. The proposed action will lengthen day-trips into the lake basin from about 3 miles currently, to 8 miles round-trip from the proposed trailhead at the lower stream crossing. The proposed action would further limit opportunities to enjoy this spectacular alpine basin to only those who have the time, desire and physical ability to walk the added distance.

Issue #4: Lengthening the hiking distance into South Colony Basin may heighten safety risks for climbers.

Climbers camping at the proposed new lower trailhead would need an extra 1 to 1 ½ hours to reach the summits of the surrounding peaks. This may expose more climbers to safety hazards from afternoon lightning storms, and an increase in the number of overdue climbers, which could potentially result in more calls for Search and Rescue assistance. Also, the extra distance may cause some climbers to pack-in less climbing hardware than they might have previously, thereby increasing the potential for risk by climbers not having sufficient climbing or safety gear.

Issue #5: Additional camping and fire regulations around South Colony Lakes may diminish the camping experience.

Requiring the use of designated campsites and prohibiting campfires around South Colony Lakes may diminish the opportunity for unconfined recreation and the sense of freedom from the constraints of society.

ALTERNATIVES CONSIDERED

This chapter describes and compares the proposed action and alternatives considered for this South Colony Basin Management proposal. It includes a description and maps of the alternatives selected for detailed analysis.

Decision Framework

Given the purpose and need described above, the deciding official reviews the proposed action and the other alternatives in order to make the following decisions:

1. Which of the alternatives best balances recreational experiences and opportunities with protecting the natural environment in South Colony Basin?
2. Does the potential displacement of campers, climbers, and motorized travel from South Colony Basin cause significant or unacceptable impacts in other areas?
3. What are the costs and practicability of implementing each of the alternatives?
4. How to best provide for public health and safety commensurate with the backcountry setting?

Alternatives - selected for detailed analysis

Alternative A - Current Management

The Forest Service's current regulations and management activities in South Colony Basin would continue unchanged. The South Colony road would remain open for vehicle travel to the existing road closure at the upper stream crossing. No trailhead facilities would be constructed and there would be no new restrictions on camping or campfire use. Road maintenance would continue, as would reconstruction of the trails and climbing routes in South Colony Basin.

Alternative B – The Proposed Action

The Forest Service is proposing the following changes to regulations, vehicle access, and recreational uses of the South Colony watershed:

1. **Close the South Colony jeep road (Forest Road #120) to vehicle travel approximately 2.5 miles below the current terminus of this road.** The proposed road closure point would be located about ½ mile west of the Rainbow Trail junction, and immediately before the first stream crossing. Closing the road above the first stream crossing will involve maintenance of the road drainage structures, removing non-functioning culverts, and ripping the flanks of the road

where possible. The roadbed above the closure point would remain open for emergency vehicles, and foot and horse access to South Colony lakes.

2. **Construct a vehicle parking area, toilets, information kiosk, footbridge, and camping facilities near the proposed new closure point.** The proposed parking area would be located immediately east of a closure gate at the first stream crossing, and designed to accommodate about 40 vehicles. The parking area will be surfaced with on-site cobbles and gravels. A planned footbridge across South Colony creek would provide walk-in access from the parking area to 15-20 constructed campsites on the west side of the stream crossing. An additional 4-6 campsites would be located on the east side of the creek near the parking area. These campsites would incorporate a raised tent platform, fire pit, and access trail. Toilets would be installed near the parking and camping areas. An information kiosk displaying a map of the basin, regulations, and backcountry etiquette would be installed near the parking area.
3. **Establish regulations that prohibit backcountry campfires within a half-mile of Lower and Upper Colony lakes.** This regulation would be posted at the trailhead and upon entering the ½ mile perimeter below the lakes.
4. **Establish regulations to prohibit backcountry camping within a half-mile of Lower and Upper Colony lakes, except at "designated campsites".** These "designated campsites" would be identified by an unobtrusive numbered marker post. This regulation will be posted at the trailhead and upon entering the ½ mile perimeter. Campsite locations would also be indicated on the map at the trailhead information kiosk.

Alternative C – An Alternative Action

The Forest Service is proposing the following changes to regulations and recreational uses of the South Colony watershed:

1. **The South Colony jeep road (Forest Road #120) would remain open to vehicle travel to the existing closure gate at the upper stream crossing.** The roadbed above the current closure point would remain open for emergency vehicles, and foot and horse access to South Colony lakes.
2. **Construct toilets, information kiosk and camping facilities near the current closure point. The existing parking areas at the upper stream crossing, accommodating approximately 30 vehicles, would remain unchanged.** Approximately 8-10 primitive campsites would be constructed on the south side of the upper stream crossing, utilizing the existing dispersed camping areas. An additional 10-12 campsites would be located on the north side of the creek and up to 150 yards west of the north side parking area. These campsites would incorporate a raised tent platform, fire pit, and access trail. Most of these sites will be a 20 to 150 yard walk-in from the parking areas. Toilets would be installed near the parking and camping areas. An information kiosk displaying a map of the basin, regulations, and backcountry etiquette would be installed near the parking area.

3. **Establish regulations that prohibit backcountry campfires within a half-mile of Lower and Upper Colony lakes.** This regulation would be posted at the trailhead and upon entering the ½ mile perimeter below the lakes.
4. **Establish regulations to prohibit backcountry camping within a half-mile of Lower and Upper Colony lakes, except at "designated campsites".** These "designated campsites" would be identified by an unobtrusive numbered marker post. This regulation will be posted at the trailhead and upon entering the ½ mile perimeter. Campsite locations would also be indicated on the map at the trailhead information kiosk.

Alternatives Considered – but not analyzed in detail

Close the South Colony Road at the bottom of the mountain. Closing the road to vehicle travel at the existing lower parking area on the county road easement would be an effective means of reducing the number of visitors to the upper basin. However, this alternative was not considered in detail for the following reasons:

- The road for most of the 1.5-mile distance between the lower parking area and the National Forest boundary is located on a "prescriptive" (versus "deeded") easement across private property. Changing the historic use that forms the basis for a prescriptive easement can nullify all or a portion of the rights conveyed by this type of easement. Restricting access on the road to only administrative or emergency vehicles could jeopardize future options for vehicular access to the National Forest by the public.
- The activities that commonly occur at trailheads often create impacts on adjacent lands. Keeping the trailhead on public lands minimizes potential conflicts with adjacent private landowners.
- Five to ten acres is needed to accommodate the needed trailhead facilities for parking, camping, and toilets. The only area along the road, above the National Forest boundary, that is large enough and flat enough to handle the proposed trailhead facilities is near the lower stream crossing.

Keep the road open to the current closure at the upper stream crossing, but do not allow overnight parking. This alternative would preserve the comparatively easy access for motorists and day-trip hikers to experience the scenery of the upper basin. Overnight visitors would need to park at facilities located lower in the basin. The Forest Service would need to staff and/or sign a checkpoint on the lower road to segregate day-trippers from overnight campers, then follow-up with evening patrols to "ticket" vehicles parked above the checkpoint. While this alternative would maintain the opportunities for four-wheel driving and easy day-trip hiking, it was not considered in detail for the following reasons:

- Most visitors would be required to stop at the lower checkpoint and hike the road to reach to upper basin. Over 80% of the visitors to South Colony Basin spend one or two nights camping in the basin. Hiking the road to reach the upper basin is currently a rather poor experience; aggravated by passing vehicles, road dust, loose stones and dirt, and a visually degraded setting.
- Segregating day-trippers and their vehicles from overnight trippers would be difficult to administer and enforce.

Close the road to full-size vehicles, but keep it open for ATV and motorcycle riders. This alternative was not considered in detail because:

- Over 90% of the users are primarily visiting South Colony Basin for a non-motorized recreation experience and the road appears to have only limited appeal to ATV and motorcycle riders. Fewer than 10 ATVs or motorcycles per week are regularly observed at the upper trailhead.
- Managing the closed segment of the road as a motorized trail creates the potential for conflicts and less than satisfactory experiences for both motorized and non-motorized users.

Implement a limited-quota permit system to regulate overnight camping. Limiting overnight camping to a given number of permitted groups per day would be the surest way to reduce recreation impacts in South Colony Basin. This alternative would preserve opportunities for motorized recreationists and day-hikers, while directly regulating the impacts associated with overnight camping. Campers would need to secure permits in advance of their trip, similar to the reservation and lottery systems used for the Boundary Waters Canoe Area, Mount Whitney, and Grand Canyon river trips. This alternative was not considered in detail for the following reasons:

- The recreating public has not supported limited-quota permit systems until the impacts to both the environment and the users' recreation experience become blatantly obvious or overwhelming. The public's frustration with the possibility that they may not be able to visit the area on a whim, or on the dates they desire, or even not at all this season; has made this alternative "the one of last resort" for land management agencies. Limited-quota permit and reservation systems can be complex and costly for the Forest Service to administer and enforce.
- The Forest Service ***is*** currently planning to request permission to implement a non-limiting permit and fee system for recreational uses of South Colony Basin (above the Rainbow Trail). Under the Federal Lands Recreation Enhancement Act (FLREA) of 2005, Congress authorized land management agencies the authority to collect fees for Recreation Permits issued as a means to manage recreation use, protect natural resources, and / or help cover the higher costs of specialized trails and services. The collection of fees is not an action covered by the National Environmental Protection Act (NEPA) and will not be addressed in this Environmental Assessment. Authority for approving fees under FLREA has

been delegated to an independent board created for the specific purpose of reviewing federal agency fee proposals. The FLREA approval process is designed to solicit and consider public input.

- The implementation of a fee system would help provide funding to service toilets and campground facilities, regulate use of "designated campsites" in the upper basin, and maintain the many improvements to the climbing routes completed over the past decade. A fee system would also function as a self-limiting method for reducing recreation use levels and the associated impacts in South Colony Basin.

Design Criteria for All Alternatives

Design criteria were developed to ease some of the potential impacts the various alternatives may cause. The design criteria are mitigation measures that are being built into the structure of each alternative right up front. They all have a high probability of implementation and success. They are also available for public review and specialist analysis throughout the process.

In general all road and trail maintenance, repair and construction; tree removal; new facilities construction, and restoration will follow Best Management Practices and the Watershed Conservation Practices. Specific mitigation measures are listed by area as follows:

Emergency, Administrative and Winter Access

The roadbed above both the existing closure gate and any new closure gate at the lower stream crossing will remain open and drivable for administrative and emergency vehicles. There are 2-3 search and rescue operations every year on the peaks surrounding South Colony Basin. Maintaining some form of motorized access to the historic road terminus is a critical asset for launching and supporting search and rescue operations in the basin.

The Forest Service will periodically need vehicle access to maintain the road and any facilities located at the upper trailhead parking area. The Natural Resources Conservation Service maintains a snow course and weather station near the upper stream crossing. Snowmobile and summer vehicle access is needed to operate and maintain these facilities. The road will also remain open for public snowmobile travel to the existing closure gate at the upper stream crossing.

Upper Basin (lakes) Area

- Dispersed campsites to be closed will be raked and revegetated with native seed mix. Where feasible, barriers or reclamation signs will be posted to keep users out of these areas.

- Where riparian vegetation around the lakes has been altered or reduced, areas will be cordoned off to prevent entry. Barriers or reclamation signs will be posted to keep users out of these areas. Willow and turf plantings may be used to facilitate recovery.

Existing Trailhead at Upper Stream Crossing

- New campsite and trailhead facilities will be designed to comply with the Americans with Disabilities Act (ADA) standards.
- All backcountry campsites will be hardened and located a minimum of 25 feet from the stream bank; a 50 feet spacing between campsite and stream bank would be preferable. No drains will be allowed or constructed to dewater or create campsites. A Forest Service hydrologist will review campsite locations.
- Any existing campsites not meeting this requirement will be reclaimed as follows: raked and revegetated with native seed mix. Where feasible, barriers or reclamation signs will be posted to keep users out of these areas.
- No more than two trails will lead from the campsite area on the south side of South Colony Creek to the stream for watering. These trails will be hardened.
- No more than one trail will lead from the campsite area on the north side of South Colony Creek to the stream for watering. This trail will be hardened.
- Where riparian vegetation along South Colony Creek has been altered or reduced, areas will be cordoned off to prevent entry. Willow plantings may be used to facilitate recovery.
- Water bars will be installed on the road segment leading from the upper stream crossing north for a distance of approximately 100 yards. Work will be performed under supervision of a Forest Service hydrologist and engineer.
- Any restoration work on the ford at the upper stream crossing will be done in consultation with and supervision of a Forest Service hydrologist and engineer.
- Sediment fencing will be used along each bank of South Colony Creek to prevent direct erosion from disturbed ground associated with new construction (i.e. toilet, kiosk, campsites, etc.). To facilitate restoration of these newly constructed sites, portions that can be reclaimed will be as follows: raked and revegetated with native seed mix. Where feasible, barriers or reclamation signs will be posted to keep users out of these areas.
- Public notice will be posted at the information kiosk for: flood potential, water-borne diseases, drinking water preparation, avoiding swift water and the like.
- Retain all soft snags (greater than 6 inches diameter at breast height [dbh] and 6 ft tall) to the greatest extent reasonable and practical, except for safety hazards.
- Contact a qualified wildlife biologist if any active/inactive raptor nests are located during project implementation. Establish a nest area no activity buffer zone (30

acre area; approximately 650 foot radius) between March 1-September 30 around any active raptor nest.

- Avoid conducting motorized project related activities within 300 feet of lynx denning habitat between April 1 and July 1 to lessen noise related disturbance in the breeding season and the earlier part of the denning season.

Proposed New Trailhead at Lower Stream Crossing

- New campsite and trailhead facilities will be designed to comply with the Americans with Disabilities Act (ADA) standards.
- A footbridge needs to be erected at the lower stream crossing for public safety during high water periods, under all alternatives. Design and placement of this footbridge will be done in consultation with and supervision of a Forest Service hydrologist and engineer.
- All backcountry campsites will be hardened and located a minimum of 25 feet from the stream bank; a 50-foot spacing between campsite and stream bank would be preferable. No drains will be allowed or constructed to dewater or create potential sites. A hydrologist will review all backcountry campsite locations.
- Any existing campsites not meeting these stream distance criteria will be reclaimed as follows: raked and revegetated with native seed mix. Where feasible, reclamation signs will be posted to keep users out of these areas.
- No more than one trail will lead from the campsite area on the west side of South Colony Creek to the stream for watering. This trail will be hardened.
- No more than one trail will lead from the campsite area on the east side of South Colony Creek to the stream for watering. This trail will be hardened.
- Where riparian vegetation along South Colony Creek has been altered or reduced, areas will be cordoned off to prevent entry. Willow plantings may be used to facilitate recovery.
- Scaled, engineering drawings for the parking lot will be prepared and approved by a Professional Engineer of Colorado. A Forest Service hydrologist will review these drawings and provide comments to ensure adequate design criteria and drainage features are in place.
- Sediment fencing will be used along each bank of South Colony Creek to prevent direct erosion from disturbed ground associated with new construction (i.e. parking lot, kiosk, campsites, etc.). To facilitate restoration of these newly constructed sites, portions that can be reclaimed will be as follows: raked and revegetated with native seed mix. Where feasible, barriers or reclamation signs will be posted to keep users out of these areas.
- All road leadout ditches will be modified to prevent direct discharge of sediment and storm water directly to the irrigation ditch. This should be done in cooperation with the permittee and per government regulations.

- Close and reclaim dispersed campsites along the irrigation ditch. Reclaim as follows: rake and revegetate with native seed mix. Where feasible, post reclamation signs to keep users out of these areas.
- Public notice will be posted at the kiosk for: flood potential, water-borne diseases, drinking water preparation, avoiding swift water and the like.
- Retain all soft snags (greater than 6 inches diameter at breast height [dbh] and 6 ft tall) to the greatest extent reasonable and practical, except for safety hazards.
- Contact a qualified wildlife biologist if any active/inactive raptor nests are located during project implementation. Establish a nest area no activity buffer zone (30 acre area; approximately 650 foot radius) between March 1-September 30 around any active raptor nest.
- Avoid conducting motorized project related activities within 300 feet of lynx denning habitat between April 1 and July 1 to lessen noise related disturbance in the breeding season and the earlier part of the denning season.
- If a trailhead and campsites are constructed at the lower stream crossing the Colorado Division of Wildlife recommends: 1). bear-proof dumpsters or trash containers be installed, 2).“bear boxes” for food storage be provided, 3). enforcement of penalties for non-compliance with bear regulations

Monitoring

The number of dispersed campsites, vegetation conditions in and around the lakes and streams, and the water quality of the lakes and stream in upper South Colony and adjacent basins (N. Colony Creek, Cottonwood Creek and Spanish Creek) should be monitored. The proposed frequency and intensity of the following monitoring actions may vary, depending on the future availability of qualified staff and budget considerations. The recommended monitoring practices include:

Dispersed Campsites

Initially, monitor the total number of dispersed, backcountry campsites in upper lakes basin, at the upper stream crossing and the lower crossing in the South Colony watershed, and monitor the total number of dispersed, backcountry campsites in the upper South Colony Basin, and in the North Colony Creek and Cottonwood Lake drainages. After this is established, conduct a bi-annual inventory to monitor the number of backcountry campsites in both watersheds.

Vegetation Conditions

Establish a photo point or photo points in key areas of the main camping (wear) areas in the South Colony, North Colony, and Cottonwood Lake watersheds. Also, if warranted establish a channel cross-section in the upper and lower creek crossing areas of the South Colony watershed. Take early and late season photos from each photo point facing north, south, east and west.

Water Quality

Conduct water quality sampling three times per year in the upper South Colony, North Colony, and Cottonwood Lake basins. An appropriate sampling program will be developed with the PSICC Forest Hydrologist, the Rocky Mountain Forest and Range Experimental Station, and if possible local universities (i.e. CSU Pueblo, CSU, UCCS, Colorado College, etc.). Some key parameters to monitor for will be: bacteriological, nutrients, pH, alkalinity, and basic field measurements (DO, temp, etc.). Final parameters and the number of samples will be based on a well-identified and targeted list and affordability.

The Baca Grande Water and Sanitation District currently samples the raw water entering their municipal water intakes on Cottonwood and Spanish Creeks. The Forest Service can reference data collected by Baca Grande Water and Sanitation District to establish background (baseline) conditions, and to gauge the "displacement or spread" of recreation impacts in these watersheds.

ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives.

Effects to Recreational Opportunities

South Colony Basin and the surrounding peaks offer a broad range of recreational opportunities, including camping, hiking, fishing, backpacking, mountaineering, hunting, four-wheel driving, ATV riding, and snowmobiling. This diversity of activities, combined with the natural beauty of the basin and the rough but passable access provided by the road, has made South Colony Basin the most popular destination in the Sangre de Cristo Range. Trailhead register data indicate 4,000 to 4,500 persons (7,500 to 9,000 user-days) visit the small (1500 acre) upper basin at the head of the South Colony drainage during the summer season.

Over 80% of these visitors intend to climb one of the surrounding peaks. Hunting, fishing, riding ATVs, and 4-wheel driving are the primary recreational motivations for less than 10% of the visitors in South Colony Basin. Over 50% of the visitors have primary residences in the Denver metro area, followed by residents of El Paso County. As Colorado's Front Range cities are projected to grow by another one million citizens by the year 2020, so also use of South Colony Basin is expected to rise.

Weekend use is significantly higher than on weekdays. On average, 40-60 persons are in the basin on a typical summer weekday, with 90-150 persons on typical weekends. Length of stay is typically one night, followed by two night stays, with only a few groups

staying longer than two nights. Most visitors to South Colony Basin are here to climb the surrounding fourteen thousand foot peaks, and accordingly mirror the characteristics found in the climbing community. Visitors are typically 20 to 35 year old males in groups of 2 – 4 persons. Groups of friends rather than family groups are the norm.

Camping in South Colony Basin is typically associated with climbing or fishing. Usually people don't specifically come here just to strictly camp. Camping sites are constrained by limited level ground along the road. Camping along the road occur at roughly 20 sites, mostly near the intersection with the Rainbow trail and at the first stream crossing. If campers have the proper vehicle to navigate to the end of the road, there are 15-20 additional camping sites available. Approximately 60 hike-in camping sites are located beyond the end-of-road in the upper basin.

Four-wheel driving on South Colony Road is typically associated with a climbing and fishing trip. The four-wheeling experience is not much of a challenge to those in the four-wheeling community, who usually look for more difficult adventures to test their equipment and driving skills. Hunting activities are usually based from campsites located along the road, especially those near the intersection with the Rainbow Trail. Hunters travel along the road and trail scouting for signs of game but do not usually spend much time or camp at the end of the road.

Many others who may be attracted here by the climbing, scenery, or for a quick day-trip adventure, are not typically as well prepared and sometimes don't have vehicles that can navigate the road as well. These visitors usually attempt to go around instead of over obstacles, widening the road and sometimes damaging their vehicles.

Day-use visitors are also attracted to the scenic views and fishing opportunities found in this basin. Day-use visitors typically spend only a couple hours in the lake basin above the end of the road. A majority of their day is spent traveling the 11-mile round trip up and down the road, along with their travel time from home.

The following table shows the distribution of vehicles parked along the South Colony road, as recorded by Forest Service employees in 2004.

Number of Vehicles

	Week Day	Weekend	Busy Weekend
End of Road TH	15	25	35
Along Road	3	5	15
Bottom TH	10	25	20

During the summer months, motorcycle and ATV riders can be seen using the road in a purely recreational capacity. Riding a motorcycle or ATV up and down the road is certainly an enjoyable experience for some visitors (and more comfortable than driving full-size vehicles). Yet, the number of motorcycles and ATVs observed at the end-of-the-road was less than 10 per week. Some ATV travel along the South Colony road is associated with Search and Rescue Operations.

During the winter months the Natural Resources and Conservation Service makes monthly trips to measure and maintain the snow course and automated SNOTEL station near the end of the road. This regular snowmobile use keeps the snow on the road somewhat packed and accessible for snowmobile enthusiasts who might otherwise be limited by deep untracked powder. The road will remain open to public snowmobile travel (even with Alternative B's proposal for a gated closure at the lower stream crossing).

Effects common to Alternative A – Current Management

The Forest Service's current regulations and management activities in South Colony Basin would continue unchanged.

- The South Colony road would remain open for vehicle travel to existing road closure at the upper stream crossing.
- No trailhead facilities would be constructed.
- There would be no new restrictions on camping or campfire use.

It is anticipated that the demand for climbing 14,000-foot peaks will remain high and visitor use will continue to increase at roughly the 3-4% annual rate observed over the past decade. At this rate of increase, by the year 2016 there will be 70+ visitors in the basin on a typical summer weekday and 150 to 200 visitors per day on weekends.

The opportunities for physical challenge and viewing spectacular scenery in South Colony Basin will remain unchanged. However, opportunities for solitude and self-reliance will likely diminish relative to the number of other visitors encountered during one's stay in the basin. Competition for parking and campsites will increase, leading to the creation of new parking pullouts and new campsites around the periphery of popular camping areas. The sight of exposed human waste and toilet paper near the trailhead and popular campsites will become more common.

The incremental degradation of visitor experiences in South Colony Basin is unlikely to dissuade an increasing number of new visitors from coming to the basin, though; the number of visitors making repeat trips to the basin may decline as user experience wanes. Still, the popular challenge of climbing "fourteeners" is expected to maintain a strong clientele base, through at least the next decade. Other "fourteeners" host several times more visitors than the peaks surrounding South Colony Basin, and this has not reduced the popularity of these peaks. Many of these climbers have made the choice to climb these popular peaks fully recognizing the tradeoffs for solitude. They want to be physically challenged and surrounded by scenic vistas, and they are willing to do this in the company of other climbers.

Trail and climbing route construction and maintenance activities will not likely be adequate to keep up with existing and future increased use. Past trail maintenance investments will devalue. The hiking and climbing experience may degrade as trail and route conditions degrade.

The South Colony Road offers many visitors their first "real 4WD" adventure! The road definitely makes for an unforgettable experience, though many visitors associate the trip with a suffering one. Keeping the road open to vehicle travel will preserve the opportunities to experience a moderately difficult four-wheel drive challenge. The South Colony road is the most challenging four-wheel drive public road on the east flank of the Sangre de Cristo Range.

At current maintenance levels, travel times on the road will lengthen as the road surface continues to degrade. More drivers will experience damage to their vehicles. An increasing percentage of visitors will park their vehicles at the bottom of the mountain or halfway up, where the road starts getting noticeably rougher. The majority of visitors hiking the road to reach the upper basin will continue to have a poor experience; aggravated by passing vehicles, road dust, loose stones and dirt, and a visually degraded setting.

There are few places in south-central Colorado that rival the spectacular nature of upper South Colony Basin, and have a rough, though passable, road nearby. For day-hikers wishing to capture the impressive views from Lower Colony Lake, the 1.3-mile South-side trail offers a relatively gentle grade with only moderately difficult footing. The North-side trail is shorter, but the grades are steeper and the footing is difficult through several sections. Keeping the road open to the current trailhead at the upper stream crossing preserves this easy day-hike opportunity, especially for those who are not physically able to handle a longer hike-in.

Effects common to Alternatives B and C

The following proposed changes to the camping regulations in upper South Colony basin are the same for both Alternative B and Alternative C:

- Restrict camping within a ½ mile of Lower and Upper South Colony Lakes to designated campsites only. These "designated campsites" would be identified by an unobtrusive numbered marker post. This regulation will be posted at the trailhead and upon entering the ½ mile perimeter. Campsite locations would also be indicated on the map at the trailhead information kiosk.
- Close and revegetate approximately 20-30 backcountry campsites.
- Prohibit campfires within a ½ mile of Lower and Upper South Colony Lakes. This regulation would be posted at the trailhead and upon entering the ½ mile perimeter below the lakes.

Requiring campers to only camp at designated campsites and prohibiting campfires around South Colony Lakes, will reduce campers' opportunities for selecting campsites wherever they want, and may detract from their experience of primitive and unconfined recreation. It could impinge on their sense of freedom from the constraints of society.

The area around the lower lake, and along the trails just east of the lake, would appear more natural and visually appealing to visitors. Prohibiting backcountry camping within

½ half mile of the lakes, except at "designated campsites"; allows for the most environmentally stable sites to be managed for camping, and the remaining 20-30 sites to be reclaimed and revegetated. By reducing the number of campsites, the amount of disturbed vegetation and soils would be reduced by almost 50%. The campfire restriction (assuming full compliance) would prevent further loss of woody vegetation near the lakes. The appearance of the upper basin would be more aesthetically pleasing.

Reducing the number of campsites in the upper basin by 50% could result in perhaps a 20-25% reduction in the human waste problem near popular camping areas in the upper basin. Perhaps a "pack-it-out" system for human waste could be implemented on a trial or voluntary basis here? The Forest Service could install a waste repository station near the upper steam crossing for campers to take the heavy-duty disposable plastic bags (with deodorizing powder), and then return the used bags at the end of their trip.

Reducing the number of campsites and increasing the distance between sites allows for more privacy in the campsite setting; reducing the potential for disturbance and the conflicts that can arise when campers are crowded together should enhance the camping experience.

New camping restrictions around the lakes could displace campers into other locations. The upper trailhead parking area for certain, and possibly adjacent basins could expect to see an increase in the amount of new user-created campsites. Prohibiting campfires around the lakes would make the proposed facilities (tent pads, toilets, and fire rings) lower in the drainage more attractive to campers who want campfires. The new regulations could cause some backpackers to make the strenuous push over Broken Hand Pass in order to camp "unhindered" in the relatively pristine Cottonwood Lake Basin. Having an acceptable number of campsites lower in the basin, to offset the reduction of 20-30 sites in the upper basin, will be a key factor in the success of any proposed new camping restrictions for the upper basin.

Camping and campfires are currently prohibited within 300 feet of the lakes. Public compliance with this existing regulation has varied with the presence and enforcement by Forest Service personnel. Still, in the decade since the regulation has been posted, the number of campers violating the regulation has steadily declined and campsites near the lakeshore are slowly revegetating. If public compliance with the proposed new camping and campfire regulations is to be successful, it will require a concerted effort on the part of the Forest Service to provide regular education and enforcement in the basin on most summer weekends. The Forest Service will likely need to install a "no vacancy sign" near the upper stream crossing to notify campers that the upper basin is "full", or to direct campers to vacant sites.

Illegal campsites within the restricted camping zone may develop, especially if people hike up to the basin late in the day and find that all the designated campsites are occupied. To prevent the creation of new sites or the re-occupation of restored campsites, it may be necessary to designate five or six unattractive but sustainable overflow campsites to meet the demands of peak weekends. It may also be necessary to identify and reserve specific sites for use by the several outfitters that operate in the basin.

The cost of having a Forest Service presence throughout the summer to enforce new regulations, manage camping, post and maintain pertinent information, and perform rudimentary trail maintenance in the basin would be $18,000 - 20,000 per season.

Effects Unique to Alternative B – the Proposed Action

Alternative B would:

- close the South Colony Road to vehicle travel at the lower stream crossing, approximately 2.5 miles below the current terminus,
- maintain existing drainage structures, remove non-functioning culverts, and rip the flanks of the road where possible,
- maintain the roadbed above the closure point for emergency and administrative vehicles, and foot and horse access to South Colony Lakes,
- construct a vehicle parking area (40 vehicles), toilets, information kiosk, footbridge, and camping facilities near the lower stream crossing (15-20 on west side of crossing, and 4-6 on east side of crossing).

Closing an additional 2.5 miles of road to vehicle use may **not** deter significant numbers of visitors from coming to South Colony Basin. Presently, 50% of visitors already park their vehicles at the bottom of the mountain or along the road, and hike the road into the upper basin. It is estimated that closing an additional 2.5 miles of the road could reduce overall recreation use in South Colony Basin by up to 15%.

Assuming the demand for climbing 14,000-foot peaks remains high and visitor use continues to increase at the 3-4% annual rate observed over the past decade, a 15% reduction in visitation would offset the expected annual increase in visitors for 4-5 years. By the year 2016 there would be roughly 60 visitors in the basin on a typical summer weekday and 120 to 170 visitors per day on weekends. This is about half the increase anticipated under Alternatives A or C.

Making access to South Colony Basin less convenient, may cause more peak climbers to access the Crestone Peaks from the west side of the Sangres through the Cottonwood or Spanish Creek drainages. Deflecting recreation use to the west side of the Sangres could create resource and trespass problems. These drainages have only informal trail systems that will not support increased use, without causing damage to the environment. Access to these west side drainages involves crossing private property, where no public easement or trailhead facilities exist.

Even with closing an additional 2.5 miles of the South Colony Road to vehicles, it will be still far easier and quicker for most climbers to access the Crestone Peaks through South Colony Basin. Many of the climbers using the west side drainages to access the peaks, either live in the San Luis Valley, or are seeking solitude and a little extra challenge. It is estimated that Alternative B would increase visitor access through Cottonwood and Spanish Creeks by 5 to 10 groups (10-25 persons) per month during the summer season. However, the private landowners' willingness to allow increasing public access across

their property will be the determining factor. Currently it is estimated that about 30 groups (60–80 persons) per month are crossing private property to access the National Forest through Spanish and Cottonwood creeks.

Closing an additional 2.5 miles of the South Colony Road to vehicle use may encourage more climbers and campers to access Humboldt Peak through North Colony Basin. North Colony Basin is a comparatively pristine basin with only an intermittent trail at its upper reaches, few established campsites, and excellent opportunities for solitude. Increasing recreation use could disrupt these opportunities for solitude and create more impacts to the relatively pristine environment of North Colony Basin through the establishment of new user-created campsites and trails. It is estimated that Alternative B would increase visitor access through North Colony Creek by 3 to 5 groups (7-13 persons) per month during the summer season. A more common effect would be a small but increasing number of climbers will access Humboldt Peak via its east-ridge route.

Closing an additional 2.5 miles of the road to vehicle use might actually encourage **more** backcountry camping around the lakes. Currently the road is closed only 1.3 miles from the lower lake. Many climbers currently consider the short distance to be gained by backpacking into the lakes is not worth giving-up the comfort of car camping. If climbers must throw-on a backpack to get within "striking distance" of the peaks, they might just decide to camp as close to the start of the summit routes as possible. To offset this tendency, the current trailhead / camping area around the upper stream crossing could be made more attractive to campers by installing toilets, tent pads, and fire rings, in addition to the facilities proposed for the road terminus at the lower stream crossing. In the absence of toilet facilities, exposed human waste will still be a problem near the upper stream crossing.

The 20 semi-developed campsites at the lower stream crossing, 10 sites along the road, 16 sites at the upper steam crossing, and 30 designated campsites in the restricted camping area near the lakes, would have been more than adequate to handle a peak summer weekend crowd in 2006 (based on an peak weekend camping population of 150 persons and an average of 2.6 persons per camping group). To handle the projected levels of use in 2016 under Alternative B, only 5 additional campsites would need to be established by the Forest Service over the next decade.

The 2.5-mile segment of the South Colony Road that is proposed for closure offers a moderately challenging four-wheel drive experience for most visitors. Closing the upper 2.5 miles of the road to vehicle travel will eliminate this motorized recreation opportunity. There are several other 4-wheel driving opportunities on the east side of the Sangres that are less challenging, but more scenic.

Visitors hiking the road to reach the upper basin will have a better experience; not aggravated by passing vehicles and road dust. The "closed" portion of the road will continue to erode at a slower rate than in Alternatives A or C. Its condition will be a function of the maintenance and improvements it receives. However, the reduction in vehicular travel should allow some recovery and revegetation of the road surface, especially along the edges of the road. This will gradually improve the visual setting along the road and the hiking experience.

Closing an additional 2.5 miles of the South Colony road eliminates the opportunity for easy short trips into the lake basin. The proposed action will lengthen day-trips from about 3 miles to 8 miles round-trip from the proposed new trailhead to the lakes and back. The proposed action would limit opportunities to enjoy this spectacular alpine basin to only those who have the time, desire and physical ability to walk the added distance.

Over 80% percent of the visitors are attracted to South Colony Basin due to the proximity of the surrounding fourteen thousand foot peaks. These peaks provide a variety of climbing opportunities for a range of abilities. The summits surrounding South Colony Basin are accessible by hiking and rock scrambling, but alternate and more difficult routes requiring technical climbing skills can be found on the Crestone Needle and Peak. From the end of the South Colony Road, most groups allow six to eight hours to climb the standard route on Crestone Needle round trip, and eight to ten hours for Crestone Peak. Groups typically require four to six hours to climb Humboldt Peak round trip.

Alternative B would add 2 to 3 hours to each of these trips if the climbers start from the proposed trailhead at the lower stream crossing. This may cause an increase in the number of overdue climbers, which could potentially result in more calls for Search and Rescue assistance. The extra distance may cause some climbers to pack-in less climbing hardware than they might have previously, thereby increasing the potential for risk by climbers not having sufficient climbing or safety gear.

Climbers camping at the proposed new lower trailhead would need an extra 1 to 1 ½ hours one-way to reach the summits of the surrounding peaks. This could expose more climbers to afternoon lightning storms.

The location of the proposed new trailhead / campground at the lower stream crossing will be in habitat that is generally inhabited by a larger number of bears (versus the current trailhead / camping area at the upper stream crossing). This may lead to an increase in bear – human conflicts. If a trailhead and campsites are constructed at the lower stream crossing the Colorado Division of Wildlife recommends:

- Bear-proof dumpsters or trash containers be installed.
- “Bear boxes” for food storage be provided.
- Enforcement of penalties for non-compliance with bear regulations

Effects Unique to Alternative C – the Alternative Action

Alternative C would:

- keep the South Colony Road open for all vehicles to the current terminus at the upper stream crossing,
- make minor drainage and road improvements on the upper road segment, and at the upper stream crossing, and

- construct toilets, an information kiosk, and camping facilities (8-10 on south side of the upper stream crossing, and 10-12 on north side of the upper stream crossing).

The effects on recreational opportunities that are unique to Alternative C stem from the construction of toilets and semi-developed camping facilities near the current terminus of the road.

The construction of 2 toilets and 20 raised tent pads with campfire rings near the upper stream crossing should make this area more attractive for camping. Providing attractive camping facilities near the trailhead should make camping at the trailhead more desirable and reduce the camping pressure near the lakes. Also, providing toilets near the upper stream crossing should reduce the common sighting of exposed human waste and toilet paper around the trailhead.

With 20 semi-developed campsites at the upper stream crossing and 30 designated campsites in the restricted camping area near the lakes, 10 groups would have needed to camp along the road on a peak summer weekend in 2006 (based on an peak weekend camping population of 150 persons and an average of 2.6 persons per camping group). The number of campsites planned in this alternative is theoretically adequate to handle current levels of visitation. However, in actual practice when 70-80% of the designated and semi-developed campsites are occupied, campers will begin to create their own new sites rather than continuing their search for established sites. To handle the peak levels of use in 2006, and the projected levels in 2016, at least 25-50 additional campsites will need to be established by the Forest Service over the next decade.

The effects to recreation opportunities from keeping the South Colony Road open to the current terminus at the upper stream crossing are very similar to those described above under “Effects common to Alternative A – Current Management”. For the reader’s convenience they are repeated below.

It is anticipated that the demand for climbing 14,000-foot peaks will remain high and visitor use will continue to increase at roughly the 3-4% annual rate observed over the past decade. At this rate of increase, by the year 2016 there will be 70+ visitors in the basin on a typical summer weekday and 150 to 200 visitors per day on weekends.

The opportunities for physical challenge and viewing spectacular scenery in South Colony Basin will remain unchanged. However, opportunities for solitude and self-reliance will likely diminish relative to the number of other visitors encountered during one’s stay in the basin.

The incremental degradation of visitor experiences in South Colony Basin is unlikely to dissuade an increasing number of new visitors from coming to the basin, though; the number of visitors making repeat trips to the basin may decline as user experience wanes. Still, the popular challenge of climbing “fourteeners” is expected to maintain a strong clientele base, through at least the next decade. Other “fourteeners” host several times more visitors than the peaks surrounding South Colony Basin, and this has not reduced the popularity of these peaks. Many of these climbers have made the choice to climb these popular peaks fully recognizing the tradeoffs for solitude. They want to be

physically challenged and surrounded by scenic vistas, and they are willing to do this in the company of other climbers.

Trail and climbing route construction and maintenance activities will not likely be adequate to keep up with existing and future increased use. Past trail maintenance investments will devalue. The hiking and climbing experience may degrade as trail and route conditions degrade.

The South Colony Road offers many visitors their first "real 4WD" adventure! The road definitely makes for an unforgettable experience, though many visitors associate the trip with a suffering one. Keeping the road open to vehicle travel will preserve the opportunities to experience a moderately difficult four-wheel drive challenge. The South Colony road is the most challenging four-wheel drive public road on the east flank of the Sangre de Cristo Range.

At current maintenance levels, travel times on the road will lengthen as the road surface continues to degrade. More drivers will experience damage to their vehicles. An increasing percentage of visitors will park their vehicles at the bottom of the mountain or halfway up, where the road starts getting noticeably rougher. The majority of visitors hiking the road to reach the upper basin will continue to have a poor experience; aggravated by passing vehicles, road dust, loose stones and dirt, and a visually degraded setting.

There are few places in south-central Colorado that rival the spectacular nature of South Colony Basin, but have a rough, though passable, road nearby. For day-hikers wishing to capture the impressive views from Lower Colony Lake, the 1.3-mile South-side trail offers a relatively gentle grade with only moderately difficult footing. The North-side trail is shorter, but the grades are steeper and the footing is difficult through several sections. Keeping the road open to the current trailhead at the upper stream crossing preserves this easy day-hike opportunity, especially for those who are not physically able to handle a longer hike-in.

Road Management and Trailhead Facilities

Road # 120 provides access to South Colony Basin from the Wet Mountain Valley. It is a 6.3-mile route, of which the first 1.3 miles is a light duty gravel road starting from the junction with Road #114 and leading to the lower parking area, located on the county easement. The next 1.7 miles is an unimproved four-wheel drive road, and the remainder is a high clearance four-wheel drive road. The road is gated closed at the 6.3 milepost, allowing search and rescue access approximately ½ mile beyond the gate. The first 2.8 miles of this route are under Custer County jurisdiction and the remaining length is subject to Forest Service jurisdiction.

This road is a very rough boulder strewn road. Vehicles have suffered frame and body damage from traveling this road. Driving this 4-wheel drive road is a rough 70-minute trip each way. The road has gotten rougher over the years due to increased usage and lack

of maintenance. Most visitors now park at the bottom, or drive halfway up, and walk the rest of the route.

The road was recently reconstructed (June 2006) from the lower parking area on the county easement to just below the first crossing. While this maintenance improved the condition of much of the lower road, significant portions of this segment remain entrenched with less than desired water bar spacing on steeper pitches. It is difficult to control the flow of water in these entrenched sections; therefore erosion occurs at a higher rate from these sections than those where the gradient is less or is not entrenched.

Another factor affecting road stability is the lack of binding material, i.e. clay. Nearly the entire length of the FSR 120 (on NF lands) lies on the Leadville-Leighcan soil family complex. The soil and subsoil are primarily comprised of stony, sandy loams to cobbly, sandy clay loams. It is therefore not uncommon for the smaller fraction (less than sand size) to erode away leaving the larger fractions (from gravel to boulder) in place. The soil parent material is from glacial moraines. The soil survey rates these soils for unsurfaced road use "as poor due to large stones."

The condition of the road between the first stream crossing and its current terminus (near upper stream crossing) is fair where gentle slopes and entrenchment does not exist and where water control features are adequately removing water from the road surface. Where steeper slopes occur, where road entrenchment exists, and/or where water control features have failed the road is generally in poor condition. Portions of several failed culverts exist at the current road surface. Where exposed, the culverts are torn and pose a safety hazard to foot, horse and vehicular travel. Many of the water bars and leadout ditches in this section of the road are filled-in. An inside road ditch runs for about 150 feet along the north approach to the upper road-stream crossing without any water control features. This ditch is intercepting subsurface flow and transporting eroded sediment and debris directly into South Colony Creek. The remaining closed road segment continuing beyond the current terminus gate is in good condition.

Both road-stream crossings exhibit larger width-depth ratios than the more typical, undisturbed stream channel configuration. The first crossing appears to be fairly stable, is well armored, and anchored by riparian vegetation. The second crossing appears less stable, is wider, and has less riparian vegetation and armoring. In addition to the road ditch mentioned previously, an upstream beaver dam and historic bridge abutments (now supporting a footbridge) also impact this upper crossing.

Under both **Alternative A and Alternative C**, the road will remain open to its current terminus. If the road remains open for vehicle travel to the existing road closure past the upper stream crossing, then the upper stream crossing will continue to be degraded, and water quality will continue to diminish. Erosion from the road surface will continue to increase unless existing drainage features are rebuilt and new drainage structures added along the length of road above the lower stream crossing. The road will not meet transportation system standards as outlined in the Forest Plan and Forest Service Manual. With weather and continued vehicle use the road will keep getting rougher and potentially more damaging to vehicles.

The cost of reconstructing the upper 2.5 miles of road, to a standard similar to the level recently completed on the lower road, is conservatively projected to be $85,000. The upper road segment contains a great deal more bedrock and boulders than the lower segment, and the logistics for supporting construction operations are also more difficult.

Alternative C would construct toilets, an information kiosk and camping facilities near the current road closure point. The existing parking areas at the upper stream crossing, accommodating approximately 30 vehicles, would remain unchanged. Approximately 8-10 primitive campsites would be constructed on the south side of the upper stream crossing, utilizing the existing dispersed camping areas. An additional 10-12 campsites would be located on the north side of the creek and up to 150 yards west of the north side parking area. These campsites would incorporate a raised tent platform, fire pit, and access trail. Most of these sites will be a 20 to 150 yard walk-in from the parking areas. Toilets would be installed near the parking and camping areas. An information kiosk displaying a map of the basin, regulations, and backcountry etiquette would be installed near the parking area.

The high water table and dying trees on the north side of the upper stream crossing will present additional challenges and costs in constructing the 10-12 campsites planned for this location. The water table on these north side slopes is right at the surface in many places. The existing dispersed campsites here are located on small "dry islands" surrounded by boggy terrain. Spruce beetles have killed nearly half of the dominant trees in this area, which is contributing to the raised water table. More timbers and aggregate will be needed in building access trails to these sites across the boggy terrain. There is also a greater potential for incidental damage to the environment when promoting public use of facilities located on or near wet soils.

ALTERNATIVE A:

Leave Road Open to upper stream crossing

Milepost	Op Mtc Level	Description	Length	**Unit Mtc** Cost/mile	**Mtc** Sched	Subtotal ($)
0.0-1.3	3	Light Duty Gravel Road	1.3	855	1/yr	County Mtc.
1.3-3.0	2	Unimproved Road	1.7	610	3rd yr	1037
3.0-6.9	2	Four Wheel Drive Road	3.9	367	3rd yr	1431
					Forest Service Maintenance Costs (for a 15 year period)	**$12,340**

ALTERNATIVES A and C: Projected long term road management costs

Rebuild the upper 2.5 miles of road to a standard similar to the lower road.

Milepost	Op Mtc Level	Description	Length	**Reconstr.** Cost/mile		Total ($)
		Reconstruction of				
4.4-6.9	2	Four Wheel Drive Road	2.5	34,000		**$85,000**

ALTERNATIVE C:

Leave Road Open to new Trailhead Facilities at upper stream crossing, and
- Construct additional drainage structures in upper road and at the upper stream crossing,
- Construct campsite facilities at Upper Stream Crossing.

Milepost	Op Mtc Level	Description	Length	**Unit Mtc** Cost/mile	**Mtc** Sched	Subtotal ($)
0.0-1.3	3	Light Duty Gravel Road	1.3	855	1/yr	County Mtc.
1.3-3.0	2	Unimproved Road	1.7	610	3rd yr	1037
3.0-6.9	2	Four Wheel Drive Road	3.9	367	3rd yr	1431
					Forest Service Maintenance Costs (for a 15 year period)	**$12,340**

Reconstructing / Improving Upper Stream Crossing					$10,000
Armoring Ditches, Banks, Channel w/ 6" - 36" Rip Rap		$50/Cubic Yard		@20 S.Y.	$1,000
Revegating Cut/Fill Slopes		$20/Square Foot		@20 S.Y.	$400
Constructing Rolling Dips		$500/each	4		$2,000
Obliterate paralleling road tracks		$2000/acre	2 ac		$4,000
Install Footbridge at Lower stream crossing					$15,000
Construct Campsite Facilities at Upper stream crossing					$75,000
			Road Rehab and New Facilities Construction Total		**$107,400**

Alternative B - Restricting the upper 2.5 miles of the South Colony road to administrative and emergency vehicle travel only, would reduce future road maintenance and eventual reconstruction costs. However, the up-front expenses of installing a closure gate and parking area at the lower stream crossing will reduce these long-term savings.

Restricting the upper road to administrative and emergency vehicle travel, would allow vegetation to slowly re-establish along the shoulders of the road. It would also reduce the deterioration of the road surface caused by vehicle travel. Over time, the upper road would slow revegetate to a more aesthetically appealing route for walking; similar to the natural restoration that has occurred on the ½ mile segment of road closed in 1995.

Alternative B would construct a vehicle parking area, toilets, information kiosk, footbridge, and camping facilities near the proposed new road closure gate at the lower stream crossing. The proposed parking area would be located immediately east of the stream crossing, and designed to accommodate about 40 vehicles. The parking area will be surfaced with on-site cobbles and gravels. A planned footbridge across South Colony creek would provide walk-in access from the parking area to 15-20 constructed campsites on the west side of the stream crossing. An additional 4-6 campsites would be located on the east side of the creek near the parking area. These campsites would incorporate a raised tent platform, fire pit, and access trail. Toilets would be installed near the parking and camping areas. An information kiosk displaying a map of the basin, regulations, and backcountry etiquette would be installed near the parking area.

The area around the lower stream crossing provides the only spot on National Forest lands (below the current parking area at the upper stream crossing) that is wide and flat enough to locate trailhead, campsite and parking facilities of this size. Locating the trailhead closer to the bottom of the mountain makes it logistically easier and more economical to service the proposed toilets and maintain the semi-developed campsites.

Locating the trailhead lower in the drainage will result in a loss of parking capacity from the existing parking areas at the upper stream crossing and several dispersed camping sites along the section of road proposed for closure. This loss of overall parking spots would need to be replaced by building a larger capacity parking area (at least 40 vehicles) at the lower stream crossing.

ALTERNATIVE B:

Close Road at Lower Stream Crossing, and
- **Construct additional drainage structures in upper road and at the upper stream crossing,**
- **Construct closure gate, parking, and campsite facilities at Lower Stream Crossing.**

Milepost	Op Mtc Level	Description	Length	**Unit Mtc** Cost/mile	**Mtc** Sched	Subtotal ($)
0-1.3	3	Light Duty Gravel Road	1.3	855	1/yr	County Mtc.
1.3-3	2	Unimproved Road	1.7	610	3rd yr	1037
3-6.9	1	Four Wheel Drive Road	3.9	367	5th yr	1431
					Forest Service Mtc. Costs (for a 15 year per.)	**$9,478**

Reconstructing / Improving Upper Stream Crossing				$10,000
Armoring Ditches, Banks, Channel w/ 6" - 36" Rip Rap		$50/Cubic Yard	@20 S.Y.	$1,000
Revegating Cut/Fill Slopes		$20/Square Foot	@20 S.Y.	$400
Constructing Rolling Dips		$500/each	4	$2,000
Obliterate paralleling road tracks		$2000/acre	2 ac	$4,000
Install Footbridge at Lower stream crossing				$15,000
Install Closure Gate at Lower stream crossing				$2,500
Construct new Parking Area at Lower stream crossing				$12,000
Construct Campsite Facilities at Lower stream crossing				$65,000
			Road Rehab and New Facilities Construction Total	**$111,900**

Effects to Soil and Water

A 2006 inventory of campsites identified 57 backcountry sites in the upper basin, 16 sites near the upper trailhead parking area, and about 20 sites along the road. An earlier 1994 survey of the area identified 33 backcountry sites in the upper basin, 7 sites near the upper trailhead parking area, and 12 sites along the road. Overall, 41 new campsites have been established over the past 12 years. Also, many of the previously established campsites increased in size and severity of disturbed bare ground.

A majority of these campsites exist in close proximity to the lakes, and to the headwater tributaries and main branch of South Colony Creek. Much of the lakeside and streamside vegetation has been altered, and in places is nonexistent. The water influence zone along South Colony Creek in the area of the upper and lower stream crossings has been significantly altered from the dispersed campsites. Many of the campsites in these areas are too close to the stream. As a result large, areas of bare ground lacking vegetation exist.

No toilet facilities exist at any of these three general camping locations (lakes, trailhead, and lower stream crossing). Signs of human feces are common around the trailhead and popular campsites.

Effects common to Alternative A – Current Management

The Forest Service's current regulations and management activities in South Colony Basin would continue unchanged.

- Road maintenance would continue, as would reconstruction of the trails and climbing routes in South Colony Basin.
- The South Colony road would remain open for vehicle travel to the existing road closure at the upper stream crossing.
- No trailhead facilities would be constructed.
- There would be no new restrictions on camping or campfire use.

South Colony basin will continue to experience current to accelerated levels of resource damage. Some direct/indirect effects on the soils and hydrology are:

- Increased disturbed areas from uncontrolled dispersed campsites and user-created trails. This results in an increase to the amount of connected, disturbed area around the lakes, upper trailhead / parking area and other disturbed areas resulting from concentrated use.
- Reduced interception and infiltration, and increased raindrop impact. This will result in accelerated runoff and increased energy and therefore erosion from these disturbed areas.
- Reduced woody and riparian vegetation in and around the lakes and the upper trailhead / parking area. This will reduce bank stability, increase water temperature, increase sediment, etc. along the affected lake shorelines and streams.
- Reduced water quality from uncontrolled human waste. Little is known of the present water quality of the lakes and South Colony Creek, and also of the potential effects this uncontrolled waste is having on the surrounding water quality. However, lower South Colony Lake experienced an algae bloom this summer (July, 2006); nutrient loading from human and animal (mostly bighorn sheep) waste was likely a significant contributing factor of the bloom.

Cumulative effects on the soil and hydrology in upper South Colony basin include an:

- increase in the amount of connected, disturbed area (loss of buffering/filtering),
- increases in erosion from these disturbed sites, and a
- decrease in water quality in lakes and streams.

Once vegetation, leaf litter and soil are displaced and eroded from these disturbed sites, those materials are permanently lost. Where these sites are permanent in nature, flow patterns are forever changed. There is also a potential, long-term effect on water quality

from the increased erosion and human waste occurring in the upper basin; whether that effect is irretrievable or irreversible is not known at this time.

Effects common to Alternatives B and C

The following proposed changes to the regulations in upper South Colony basin are the same for Alternative B and Alternative C:

- Restrict camping within a half-mile of Lower and Upper South Colony Lakes to designated campsites only.
- Close and reclaim approximately 20-30 backcountry campsites.
- Prohibit campfires within a ½ mile of Lower and Upper South Colony Lakes.

Prohibiting backcountry camping within a ½ mile of the lakes, except at "designated campsites"; allows for the most environmentally stable sites to be managed for camping, and the remaining 20-30 sites to be reclaimed and revegetated. By imposing the proposed camping restrictions and reducing the number of backcountry campsites around the lakes by approximately 50%, the amount of disturbed area (assuming that most dispersed sites are the same size) would also be reduced by 50%. The campfire restriction (assuming full compliance) would prevent further loss of live, standing woody vegetation within one mile of the lakes. This restriction along with the reduction in dispersed backcountry campsites will allow the disturbed vegetation types to effectively begin the recovery process in and around the lakes.

These restrictions at the lakes could displace recreational users into other locations. Prohibiting campfires around the lakes protects sensitive timberline environments, and makes the proposed facilities (tent pads & toilets) lower in the drainage more attractive to campers who want campfires. The upper trailhead parking area for certain and possibly adjacent basins could expect to see an increase in the amount of new user-created campsites.

Cumulative effects on the soil and hydrology in upper South Colony basin are:

- Connected, disturbed area reduced around the lakes by 50%
- Human waste could be reduced around the lakes by 20-30%
- Over time, an increase in the hydrologic function (possibly including improved water quality) from reclaimed, dispersed sites and reduced human wastes around the lakes
- Potential increase in connected, disturbed areas at the upper trailhead parking area and possibly in adjacent basins (North Colony, Cottonwood and Spanish Creeks).
- Potential increase in human wastes at the upper trailhead parking area and in adjacent basins (North Colony, Cottonwood and Spanish Creeks).
- Potential reduction in water quality at the upper trailhead parking area and possibly in adjacent basins (North Colony, Cottonwood and Spanish Creeks).

Effects Unique to Alternative B – the Proposed Action

Alternative B would:

- close the South Colony Road 2.5 miles below the current terminus,
- maintain existing drainage structures, remove non-functioning culverts, and rip the flanks of the road where possible,
- maintain the roadbed above the closure point for administrative and emergency vehicles, and foot and horse access to South Colony Lakes, and
- construct a vehicle parking area (40 vehicles), toilets, information kiosk, footbridge, and camping facilities near first crossing (15-20 on west side of crossing, and 4-6 on east side of crossing).

Site disturbance will occur with the construction of a new parking area, kiosk, toilets, footbridge and campsites. Toilet facilities at the first crossing will provide for proper waste disposal for those users camping at this location and for those users passing through. Additional sediment loading from the newly constructed site will occur until the area has time to establish vegetation in non-traffic areas; an incremental increase in sediment will be realized from the high-use areas.

As stated above some closure work will occur on the road from this point to its present terminus. The "closed" portion of the road will continue to erode, and its condition will be a function of the maintenance and improvements it receives. However, some recovery to the road surface should occur with the reduction in vehicular travel.

The Baca Grande Water and Sanitation District has source water intakes in Cottonwood Creek, Spanish Creek, Willow Creek, and the South Crestone Creek hydrologic basins. Diversion of recreation use from the South Colony access could transfer some of the sanitation problems to these west side drainages, potentially affecting the community's health and safety. It is estimated that Alternative B would increase visitor access through Cottonwood and Spanish Creeks by 5 to 10 groups (10- 25 persons) per month during the summer season. However, the private landowners' willingness to allow increasing public access across their property will be the determining factor. Currently about 30 groups per month are crossing private property to access the National Forest on Spanish and Cottonwood creeks.

The "open" portion of the road will also continue to erode, and its condition too will be a function of the maintenance and improvements it receives. It should be noted that the maintenance schedule for all alternatives to this milepost is the same. This "open" portion does have steep and entrenched sections. Erosion from the "open" portion should be at current rates, yet it may in fact be higher to due a potential increase in the number of users attempting to drive to the first crossing. Thus there is a higher potential for erosion on the "open" portion and therefore an increase in the amount of sediment being discharged into the irrigation ditch.

Effects Unique to Alternative C – the Alternative Action

Alternative C would:

- keep the South Colony Road open to all vehicles to the current terminus at the upper stream crossing,
- make minor drainage and road improvements on the upper road segment, and at the upper stream crossing,
- construct toilets, information kiosk, and camping facilities (8-10 on south side of the upper stream crossing, and 10-12 on north side of the upper stream crossing).

Site disturbance will occur with the construction of a new kiosk, toilets, and campsites. Toilet facilities at the upper trailhead parking area will provide for proper waste disposal for those users camping at this location and for those users passing through to and from the lakes. Site selection on the north side of South Colony Creek may be limited due to a naturally high ground water table and boggy area. Diseased spruce-fir trees on the north side of the creek should also be considered when selecting new, campsite locations. Additional sediment loading from these disturbances will occur until those areas have time to establish vegetation in non-traffic areas; an incremental increase in sediment will be realized from the high-use areas.

The road will remain open to its current terminus. It will continue to erode, and its condition will be a function of the maintenance and improvements it receives. Because of vehicular travel, the segment between the first crossing and its current terminus will not experience any recovery to the road surface.

Effects to Vegetation and Wildlife

Effects to Timberline Forests

The timberline forests around Lower Colony Lake are showing signs of over-use from firewood gathering. Over 80% of the 4,000 to 4,500 annual visitors to the South Colony area spend at least one night camping somewhere along the road or in the upper basin. Many of these campers gather wood from the forest for building campfires. The popularity of the lake basin and the surrounding peaks has created 57 backcountry campsites within ½ mile of the lakes, most of which have at least one campfire ring per campsite. While Upper Colony Lake is above timberline, some campers have hauled firewood uphill to create fire scars on the tundra near the upper lake.

Over time, campers have removed much of the dead trees and logs within roughly ½ mile of Lower Colony Lake. Most of the live trees near campsites have been stripped of their dead lower branches. There are very few dead standing trees (wildlife habitat) near the lake basin camping areas. Consequently, campers are cutting and attempting to burn

gnarled old Bristlecone pines and Subalpine firs that appear to be dead, but are in fact still living. The growth rate of trees in timberline and subalpine forests above 11,000 feet is so slow that they cannot tolerate this; the damage is both environmental and aesthetic.

In contrast, the lower and more productive forested areas of the basin have significant amount of dead timber available for campfires. Dead standing trees and down logs are relatively plentiful near the upper trailhead parking area and along the road below.

Alternative A would not institute any new regulations restricting camping or campfires in the upper basin. Degradation of timberline forests near Lower Colony Lake would continue at a slow but steady rate, as new campsites are established in the area, and as campers continue to forage living and dead trees for firewood.

Alternatives B and C would prohibit campfires within a half-mile of Lower and Upper South Colony Lakes. This regulation should greatly decrease or even stop the use of living and dead trees for firewood in the forests near Lower Colony Lake, depending on the level of Forest Service enforcement and public compliance.

Prohibiting campfires within ½ mile of Upper and Lower Colony Lakes could make camping near the upper trailhead parking area and along the road more attractive to those campers who desire to have campfires. This would increase the removal of vegetation for firewood around these roadside camping areas. It could also displace other campsite activities and their associated impacts from the upper basin to both the existing upper trailhead area and the proposed lower trailhead area.

Effects to Rare and Sensitive Plants

Botanists surveyed the basin in 2004 and 2005 for rare and sensitive plant species. No rare or sensitive plants were identified in the area of the proposed lower trailhead area or around the existing upper trailhead and parking area. A review of Forest Service files, the Colorado Natural Heritage Program (CNHP) database, state wildlife agency information, and published research showed that two sensitive plant species, *Draba grayana* and *Draba smithii*, are known from areas adjacent to the project area. *Draba grayana* is an alpine species, while *Draba smithii* is a montane species often found amongst rock outcrops.

There is potential for Narrow-leaved moonwort (*Botrychium lineare*), a perennial herb in the adder's-tongue fern family, to occur within the proposed and existing trailhead areas. It is commonly found in deep grass and forb meadows, under trees in woods, and on shelves on limestone. Narrow-leaved moonwort is a candidate for federal listing as an endangered or threatened species. It is rare range-wide with only nine known populations. This plant is small and easily over-looked, and may not be present every year.

Under **Alternative A** (the current management alternative), existing uses in the area and associated impacts to rare and sensitive plant species would remain approximately the same. Implementation of Alternative A would result in no new construction activity at the existing or proposed trailhead areas. However, with Alternative A the establishment of new user-created campsites would likely continue at a pace similar to that observed since 1994. The creation of new social trails and campsites by the public could have direct and indirect impacts to rare and sensitive plant species.

Alternatives B and C would involve construction of new trailhead facilities (parking areas, toilets, tent pads, fire rings, access trails, etc) and maintenance or modifications of the road and parking areas. Construction activity has the potential to directly impact sensitive plants by crushing plants, displacing soil and plants, or smothering plants with slash or soil. Even those sensitive species that may benefit from soil disturbance or additional light exposure could suffer adverse direct effects as a result of construction activity.

The primary indirect threat to rare and sensitive plant species posed by construction activity is the potential for introduction and spread of invasive plant species. Noxious weeds can be brought into the project area by construction machinery as well as in road materials and mulch. The use of off-site material from private gravel pits with unknown weed infestations greatly increases the risk of noxious weed invasion. Construction activity increases the likelihood of invasion of roadside habitats by exotic and invasive species such as hoary cress or whitetop (*Cardaria draba*), knapweed (*Centaurea diffusa*), ox-eye daisy (*Chrysantheum leucanthemun*), toadflax (*Linaria vulgaris*), leafy spurge (*Euphorbia esula*), and many others. Noxious weeds can negatively impact sensitive plant species through competition for light, water, and nutrients as well as through the excretion of toxins (allelopathy). Once established, noxious weeds can be difficult to control or eradicate. Noxious weeds displace native plant habitat and degrade watershed functions. If standard management practices such as inventory, avoidance or pre-treatment of known noxious weed sites, cleaning equipment, and using weed free material and mulch are utilized then the threat from noxious weeds is greatly minimized.

Some individuals of *Botrychium lineare* may be impacted as a result of implementation of Alternatives B or C for one or both of the following reasons. Although site-specific botanical surveys have been performed in the proposed project area, it is possible that individuals went undetected. Also, indirect effects may impact individuals outside of the surveyed project corridor. While implementation of Alternative B or C may directly or indirectly affect individual *Botrychium lineare* and other sensitive species, it is not likely to adversely affect the viability of these species range wide.

Effects to Wildlife

The South Colony basin contains several ecosystem types. Ecosystem types are: alpine tundra, willow carrs, ponderosa pine woodland, Douglas-fir, Spruce-fir, Bristlecone pine, krummholz (spruce-fir/alpine tundra transition or ecotone area), foothills riparian and

deciduous forests, and open water streams and lakes. These ecosystem types contain potential habitat for a variety of wildlife species.

Some of the species that do or could exist in the area are: Canada lynx, bobcat, mountain lion, wolverine, American marten, black bear, coyote, red fox, raccoon, long-tailed weasel, striped skunk, Townsend's big-eared bat, deer, elk, bighorn sheep, yellow-bellied marmot, least chipmunk, red squirrel (chickaree), northern goshawk, red-tailed hawk, olive-sided flycatcher, white-tailed ptarmigan, American three-toed woodpecker, hairy woodpecker, Northern flicker, American pipit, Wilson's warbler, MacGillivray's warbler, yellow warbler, yellow-rumped warbler, broad-tailed hummingbird, mountain chickadee, Lincoln's sparrow, fox sparrow, white-crowned sparrow, Steller's jay, western tanager, pygmy nuthatch, Clark's nutcracker, gray jay, pine sisken, hermit thrush, mountain bluebird, and American dipper.

The upper portion of South Colony Basin lies within the primary range of one of Colorado's largest Rocky Mountain Bighorn Sheep herds. This herd typically ranges from Music Pass north towards the Macey Lakes basin. The number of Bighorn Sheep in this herd has been declining over the past decade. The reasons for this decline include drought, disease, encroachment by humans on sensitive habitats (especially during lambing and breeding seasons), and competition for forage from expanding elk herds. During the summer months it is common to find 12 to 20 bighorn sheep, mostly females and their young, in upper South Colony Basin. Many of the bighorn sheep that frequent South Colony Basin have become habituated to the presence of humans and human activities. Small groups of bighorn regularly forage through the camping areas around the lakes.

A lone Mountain Goat and numerous marmots have also become habituated to humans and human "handouts". At least two male Mountain Goats have taken-up residence in South Colony Basin over the past 10 years. Mountain Goats are not native to the Sangre de Cristo range and may be competing with Bighorn Sheep for the same habitats.

South Colony Basin is classified as suitable Canada Lynx habitat and field verification confirmed that there is suitable vegetation and structure present in the area to meet some or all lynx habitat criteria types. The U.S. Fish and Wildlife Service listed Canada Lynx as a threatened species in portions of the lower 48 states on March 24, 2000. Lynx are medium-sized cats with long legs adapted for hunting in deep snow. Lynx inhabit dense coniferous forests in the subalpine zone and timberline where they use caves, rock crevices, overhanging banks or hollow logs for denning. They are dependent on the snowshoe hare as their primary food source. There are no known lynx in the project area, but radio-collared lynx have been located in the Sangre de Cristo Mountains over the last couple of years.

Impacts to various wildlife species from the recreational activities range from short-term disturbances and displacement to long-term habitat loss and fragmentation. The bulk of the impacts to wildlife are most likely from camping and associated activities in the lake basin.

Although traffic volume has increased substantially, the direct effects of vehicles going up and down the South Colony road probably does not have major adverse impacts on any of the wildlife species in the area since they have been exposed to, and somewhat

habituated to, these types of disturbances for numerous years. Certainly, there are some effects to wildlife, such as loss of habitat effectiveness and/or displacement to some individual animals and species within a given distance of the road, potential disruption and fragmentation of wildlife migrational routes, etc. Disturbance distance from road traffic varies upon species; ranging from several feet up to possibly 0.25 miles for very sensitive species, but it is highly unlikely that the impacts from road traffic are adversely affecting the viabilities of any terrestrial wildlife populations.

Camping in the South Colony watershed (primarily in the lake basin area) has created impacts to wildlife species in the form of habitat and habitat effectiveness loss (soil compaction, vegetation destruction, disturbance, and displacement), wildlife habituation to humans and their behavioral habits (i.e., feeding wildlife, presence of trash and human waste that attracts wildlife and alters their behavioral patterns, etc.). Campers' presence and activities have attracted species such as marmots, bears, bighorn sheep, a mountain goat, chipmunks, squirrels, and birds (i.e., gray jays especially), into the campground areas and altered the wildlife species' natural behavior making them semi-dependent upon humans for food resources. These interactions create increased potential for human-wildlife conflicts and usually wildlife species will suffer in the long-term due to the animal damage and conflict control measures that will be implemented (case in point is the removal of the aggressive mountain goat by Colorado Division of Wildlife personnel that frequented the basin).

Continual increases in recreational user days (currently 8,000+ users/season) in the basin from all sources of recreation activities will add to the existing effects and could create adverse cumulative effects on various wildlife species and populations in the drainage, or the Sangre de Cristo Mountains, on a larger scale. Cumulative impacts could be from population fragmentation, continual disturbance to wildlife species during breeding season, and displacement from formerly suitable habitat.

Under **Alternative A**, existing recreational uses in the area and the associated impacts to wildlife species would remain approximately the same, for now. However, by continuing current management in South Colony Basin, overall recreational use and activities are likely to follow the same steady increase as observed over the past decades. As recreational use continues to climb, wildlife habituation, wildlife displacement and loss of habitat are quite likely to intensify.

Alternatives B and C would restrict camping within a half-mile of Lower and Upper South Colony Lakes to designated campsites only. The purpose of this regulation would be to halt the creation of new campsites, reclaim about ½ of the existing campsites, and to some extent discourage camping in the upper basin. Wildlife habituation (including bighorn sheep, marmots, and mountain goats) is a problem in South Colony Basin. Reducing the amount of dispersed camping at or above treeline will reduce the amount of human / wildlife contact in the basin.

Under **Alternatives B and C**, there is potential for some short-term adverse effects to any animal species in the existing and proposed trailhead areas from human disturbance activities such as dozer and backhoe operations, equipment noise and pollution, tent pad clearing, and personnel noise, etc. The permanent loss of wildlife habitat in the area of the proposed new campsites and parking areas may cause long-term effects on different species that utilize the sites, due to conversion of forested vegetation to campsites. Effects may range from temporary displacement from nearby project related activities to long-term displacement due to habitat loss, to possible direct mortality; however, direct mortality is very unlikely for any of the animal species since most of the species are quite mobile and would easily be able to avoid the equipment and hazardous activities at the roughly 10 acre project sites. Long-term effects that would or could occur are: loss of habitat and consequential displacement, reduced natality and recruitment, and increased competition (with neighboring animals) and mortality to species that utilize the forested stands proposed for conversion into the campsites, or in the area that is to undergo trail reconstruction.

The area surrounding the existing upper trailhead has the potential to provide lynx denning, winter forage, and "other" habitat, while the proposed lower trailhead area has the potential to function as winter foraging and "other" lynx habitat. It does not meet the habitat requirements for winter foraging. Both the existing and proposed trailheads areas are adjacent to the South Colony road that receives frequent traffic (up to several dozen or more vehicles per day) and substantial dispersed camping and hiking activities during the summer/early fall months. The least amount of human disturbance occurs during the winter months, so consequently this area probably has the highest habitat effectiveness as winter foraging habitat verses summer or denning habitat.

However, a small-scale project such as this would not detectably impact a lynx's ability to find security habitat in the area since the trailhead and parking area footprint is 10 acres or less. Both Alternatives B and C are proposing to develop official campsites where there are currently dispersed campsites. Both potential development areas presently have dispersed camping and there is presently background disturbances associated with them. Alternatives B and C will have insignificant and discountable effects to the environmental baseline condition and on lynx and lynx habitat

CONSULTATION AND COORDINATION

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

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Karen Mighell	Engineer
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U.S. Fish and Wildlife Service

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