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Department of  
Agriculture

Forest  
Service

August 2003



# Environmental Assessment

## Cow Creek Recreation Area Project

**Pecos/Las Vegas Ranger District, Santa Fe National Forest  
San Miguel County, New Mexico**

Legal Description: Sections 26 and 35, T17N, R12E, New Mexico Prime Meridian



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# CHAPTER 1 • PURPOSE AND NEED FOR ACTION

## Introduction ---

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

- *Chapter 1 - Purpose and Need for Action:* This 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 details how the Forest Service informed the public of the proposal and how the public responded.
- *Chapter 2 - Alternatives:* 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. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Chapter 3 –Existing Condition /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 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.
- *Chapter 4 - 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 more detailed information to support the analyses presented in the environmental assessment. Maps associated with the project are also located here.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Pecos/Las Vegas Ranger District Office, State Highway 63 in Pecos, NM. The project record (PR) is incorporated by reference into this EA.

## Background ---

The Project Area is located in north central New Mexico between the southern end of the Sangre de Cristo and Santa Fe mountains in Section 26 and 35, T17N, R12E, New Mexico Prime Meridian. The Project Area encompasses approximately 28 acres of National Forest System lands administered by the Pecos/Las Vegas Ranger District (see Vicinity Area Map (Map 1) and Project Area Map (Map 2)).

Cow Creek Campground was built in the 1960's along Cow Creek, one of the few perennial stream courses on the Pecos/Las Vegas Ranger District. It consisted of 5 single-family campsites designed to accommodate 5 persons at one time (PAOT) for a total of 25 PAOT for the entire campground. The campground had two pit toilets, picnic tables, potable water, and grills. The primary user group for this campground is the local community who use the area for camping and fishing opportunities along Cow Creek, family gatherings, scenic driving, hunting and off-highway vehicle use. Over the last few decades, use has changed from the single, smaller families to larger, extended family groups. This has resulted in the uncontrolled expansion of campsite areas. In addition, years of attrition at the campground has resulted in the campground facilities deteriorating and resource damage occurring at all sites, i.e. soil compaction, vegetation elimination, erosion, multiple user-created fire rings, etc.

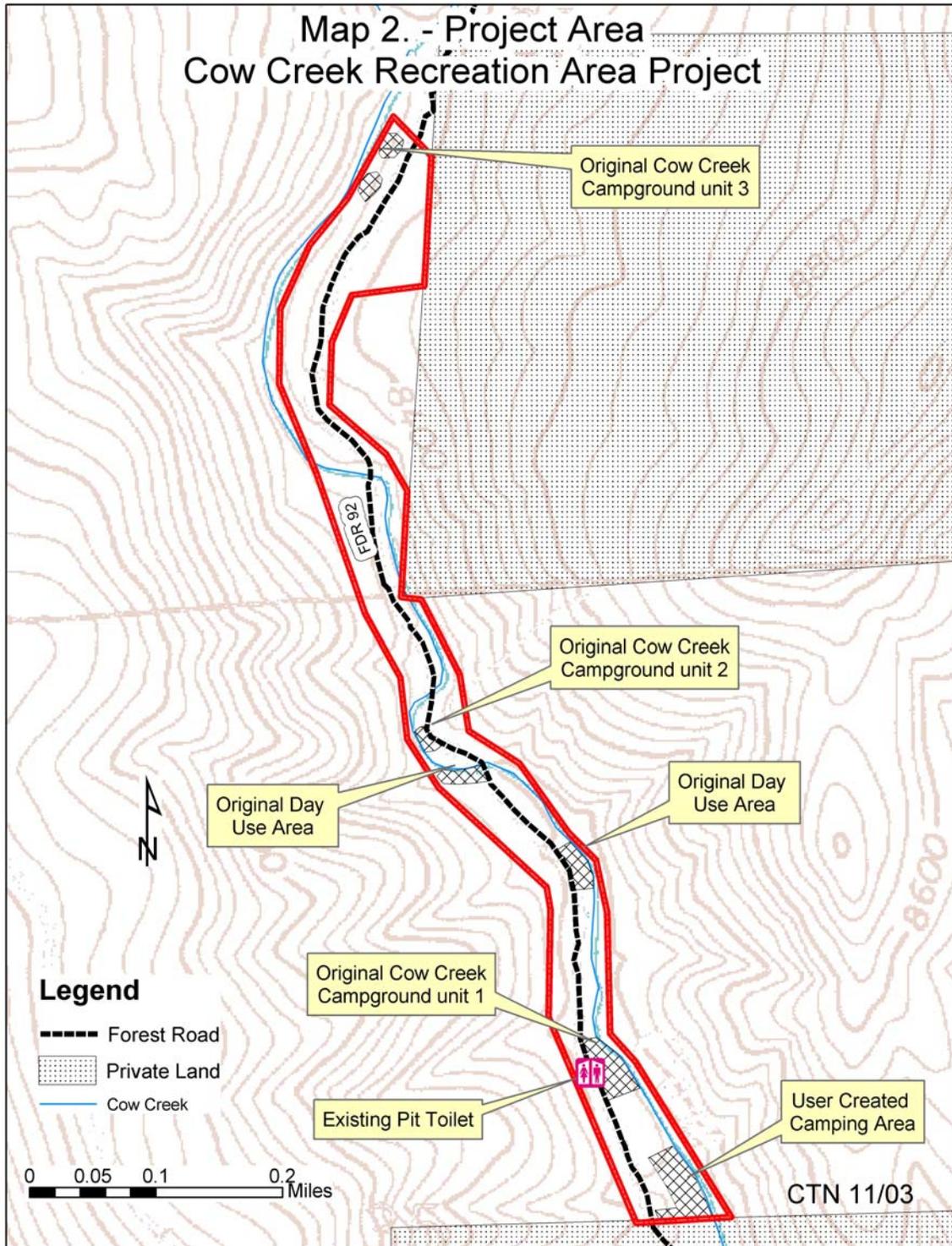


On May 29, 2000, the Viveash Fire began in the Sangre de Cristo Mountains and burned approximately 29,000 acres in the Pecos/Las Vegas Ranger District on the Santa Fe National Forest, including the Cow Creek area. The Viveash Fire burnt through the Cow Creek Campground and destroyed one of the toilet buildings in the campground. Forest Development Road (FDR) 92 and the Cow Creek drainage area was closed to public use following the Viveash Fire and remained closed until 2001. Once the area was re-opened to public use, the local community continued to camp in the Cow Creek Campground area despite the loss of fish in Cow Creek and the other impacts of the fire to the surrounding hillsides.

In 2002, the Roybal Fire occurred just south and west of the Cow Creek Campground area and the Forest again had to close FDR 92 for a limited time due to health and safety reasons. Once

FDR 92 was re-opened, local user groups again came in to the Cow Creek area to camp alongside of Cow Creek.

Despite both the Viveash and Roybal fires burning through the Cow Creek drainage area within the past three years, and the condition of the campground, the public still desires to recreate in the Cow Creek Campground area.



## Purpose & Need for Action

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The existing Cow Creek Campground area was designed to accommodate only 25 PAOT as single-family units. The existing use exceeds this number due to the change in the size of user groups camping at Cow Creek. The original campsites were not well defined and have been expanded due to larger groups using the sites. Most of these campsites are located along the edge of Cow Creek. Additionally, there is only one picnic table and a non-functioning pit toilet remaining and the existing fire rings are user created made of native rock. The original campground was not designed to accommodate people with disabilities. In addition to the original Cow Creek campsites, there are other dispersed sites located along FDR 92/Cow Creek that have been used as overnight camping areas. There were never any designated parking areas along FDR 92, forcing campers to create parking areas.

The Santa Fe National Forest Land and Resource Management Plan (Forest Plan (FP), as amended) desired condition for developed recreation sites is to manage the recreation resource to increase opportunities for a wide variety of developed and dispersed experience (FP, pg 18). Developed sites would also provide for access for people with disabilities in at least 20 % of recreation sites that are reconstructed or rehabilitated (FP, pg 50). All sewage and solid waste disposal facilities would meet NM State Solid and Liquid Waste Disposal regulations (FP, pg 51). In addition, reconstruction of campgrounds would keep habitation improvements away from the edge of the streambanks (FP, pg 62).

The District Ranger for the Pecos/Las Vegas Ranger District has determined several specific **needs** for the Cow Creek Campground area.

- Need to re-design campsites to adequately accommodate existing camping use;
- Need to provide accessible campsites and facilities for people with disabilities;
- Need to provide adequate restroom facilities that meet current standards for solid waste collection;
- Need to provide adequate parking and day use facilities for access to Cow Creek;
- Need to improve water quality of Cow Creek by moving campsites away from the immediate edge of the stream, closing two user created overnight camping areas, and rehabilitating previously impacted riparian areas.

The **purpose** of this action is to:

- Continue to provide a rustic, moderately developed camping experience along the FDR 92/ Cow Creek corridor.
- Provide universally accessible toilet facilities and site furnishings, provide universal access to at least 20% of the camping sites, and provide parking access to Cow Creek for fishing and camping sites located along FDR 92.
- Provide adequate restroom facilities that meet current standards for solid waste collection.
- Improve the water quality of Cow Creek by moving existing camping areas away from the immediate edge of Cow Creek, close unsuitable existing camping sites too close to Cow Creek.

This action responds to the goals and objectives outlined in the Forest Plan as amended, and helps move the Project Area towards desired conditions and management direction for recreation (FP, pgs 16, 18) and soil and water (FP, pg 20).

Forest-wide standards and guidelines from the Forest Plan that apply to this project are primarily those regarding recreation access for people with disabilities (FP, pg 50), meeting Safe Drinking Water Standards and Solid and Liquid Waste Disposal regulations (FP, pg 51), wildlife and fish (FP, replacement pg 62, Amendment 6), and riparian areas (FP, pg 79).

This proposal and its alternatives are also designed in conformance with the area-specific Forest Plan direction that applies to Management Area E for Recreation (FP, pg 118).

## **Proposed Action**

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The proposed action is to construct a 5-site extended family campground within the FDR 92 Corridor, on the Pecos/Las Vegas Ranger District of the Santa Fe National Forest. This campground would be designed to accommodate a maximum of 15 persons per site and would be designed to fit in with the Roaded Natural setting of the area. Each site would have picnic tables, fire rings with grills, and designated improved surface impact areas. Parking would be large enough to accommodate up to three to four vehicles per site. There would be no potable water at this facility but there would be two universally accessible unisex toilet facilities. Two (2) day use fishing sites would also be constructed.

A fishing platform at Day Use Fishing Site 2 was considered and discussed in the scoping letter. However, this action was dropped from the Proposed Action alternative because it was determined that the location was not suitable for such a platform. Additionally, it was determined that two locations for one of the new toilet facilities would be analyzed with the best site chosen based on engineering criteria. The proposed locations for this new toilet facility eliminated the need for the proposed path between Group Camping Area 1 and Group Camping Area 2. It may be necessary to construct a small pull out for this toilet facility. At all developed sites, hazard trees within the area would be removed. The full description of the Proposed Action alternative is described in Chapter 2.

## **Decision Framework**

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The Pecos/Las Vegas District Ranger will decide whether to implement the proposed action, an alternative to the proposed action or some combination of the alternatives, and whether further environmental documentation in an environmental impact statement is needed. The decision may include project specific mitigation measures that need to be applied in addition to those prescribed in the Forest Land and Resource Management Plan. Based on public comments developed from response to the scoping notice, and on site-specific analysis, the Forest Service must determine whether significant issues or concerns exist. The nature of the decision is contingent upon that determination.

## **Public Involvement**

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The proposal was listed in the Santa Fe National Forest Schedule of Proposed Actions in September of 2002, February of 2003, and June of 2003. A scoping letter dated March 7, 2003 was sent to 70 interested public and other agencies (PR #9). In addition, the scoping letter was also sent to twenty-six Indian Tribes and Pueblo governments. The letter requested comments

on the proposed action be made between March 7 and April 6, 2003. Three written letters or verbal comments were received.

Reviewing the comments received from the public, other agencies and the tribes, the interdisciplinary team (IDT) determined whether the comments were significant or non-significant issues (PR #16).

## Issues

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The Forest Service separated the issues into two groups: significant and non-significant issues. Significant issues were defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues were identified as 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; 4) conjectural and not supported by scientific or factual evidence; or 5) general comments. The Council for 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)...". A list of non-significant issues and reasons regarding their categorization as non-significant may be found in the project record (PR #16).

As for significant issues, the Forest Service identified two topics raised during scoping.

**Issue 1. Capacity of the area.** Due to the small size of the Project Area, increasing camping facilities in the Cow Creek Recreation Area could result in over use and degradation of this area.

**Issue 2. Trespassing.** There is potential for vandalism and trespassing to occur on the private property just east of proposed Group Camping Area 3.

The first issue led to the development of Alternative C. Measures to be used as indicators for this issue are:

- Sq. ft. of dedicated area – area originally dedicated in the creation of the campground.
- Sq. ft. of impacted area – area increased from original dedication.
- Sq. ft. of rehabilitated area – area rehabilitated during the project.

To address the second issue, mitigation measures would be undertaken in the action alternatives. Chapter 2 provides a description of specific mitigation measures for this issue.

## CHAPTER 2 • ALTERNATIVES

This chapter describes and compares the alternatives considered for the Cow Creek Recreation Area project. It includes a description and map of each alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public.

All alternatives proposed for implementation would meet the requirements of the National Forest Management Act. All action alternatives attempt to satisfy project objectives. The Environmental Consequences section of this report describes the likely environmental effects associated with implementation of each alternative.

The project maps for all the alternatives indicate general locations of proposed activities. The maps are schematic in nature and do not show the exact size or precise location of proposed activities. The exact locations and sizes will be determined during the implementation phase of the project as activities are located on the ground.

### Management Direction \_\_\_\_\_

The Forest Plan as amended, sets forth broad, programmatic management direction for the Santa Fe National Forest. This EA is a project-level analysis, designed in conformance with the applicable Forest Plan management direction (goals and standards/guidelines). Where appropriate, this EA tiers to the Forest Plan, as encouraged by 40 Code of Federal Regulations (CFR) 1520.20. Through its goals, standards and guidelines, and management area direction, the Forest Plan provides the overall guidance for management of the land within its borders. The Cow Creek Recreation Project Area lies in Management Area (MA) E and the project is designed in conformance with the area-specific Forest Plan direction that applies to this specific MA.

#### Management Area E

*Management Emphasis—Dispersed recreation, visual quality, timber and firewood production*

This MA consists of those national forest lands that provide a broad range of recreational opportunities and visual quality. These areas provide scenic backdrops from highways or communities and provide important dispersed recreation areas or minor developed recreation sites. They also provide a wide array of game, non-game, and fisheries recreational opportunities. The relevant standards/guidelines for Management Area E are found in the Forest Plan on pages 117-120.

### Alternatives Considered But Not Analyzed in This EA \_\_\_\_\_

During the scoping process, the Forest received comment letters that made suggestions of additional alternatives to the proposed action. Some of these suggestions were incorporated into the action alternatives and are being analyzed later in this document.

Two additional alternatives were considered but eliminated from further detailed analysis. The first of these alternatives proposed to close the entire Project Area to any type of recreational activities. This alternative does not meet the Purpose and Need of the project of continuing to

provide developed and dispersed recreational activities. In addition, this alternative does not meet the Forest Plan desired condition for developed recreation sites by managing the recreation resource to increase opportunities for a wide variety of developed and dispersed experiences (Forest Plan, pg 18).

The second alternative proposed to allow only Day Use activities to occur within the Project Area. Again, this alternative does not meet the Purpose and Need of the project to continue to provide a rustic, moderately developed camping experience in the Project Area.

## Alternatives

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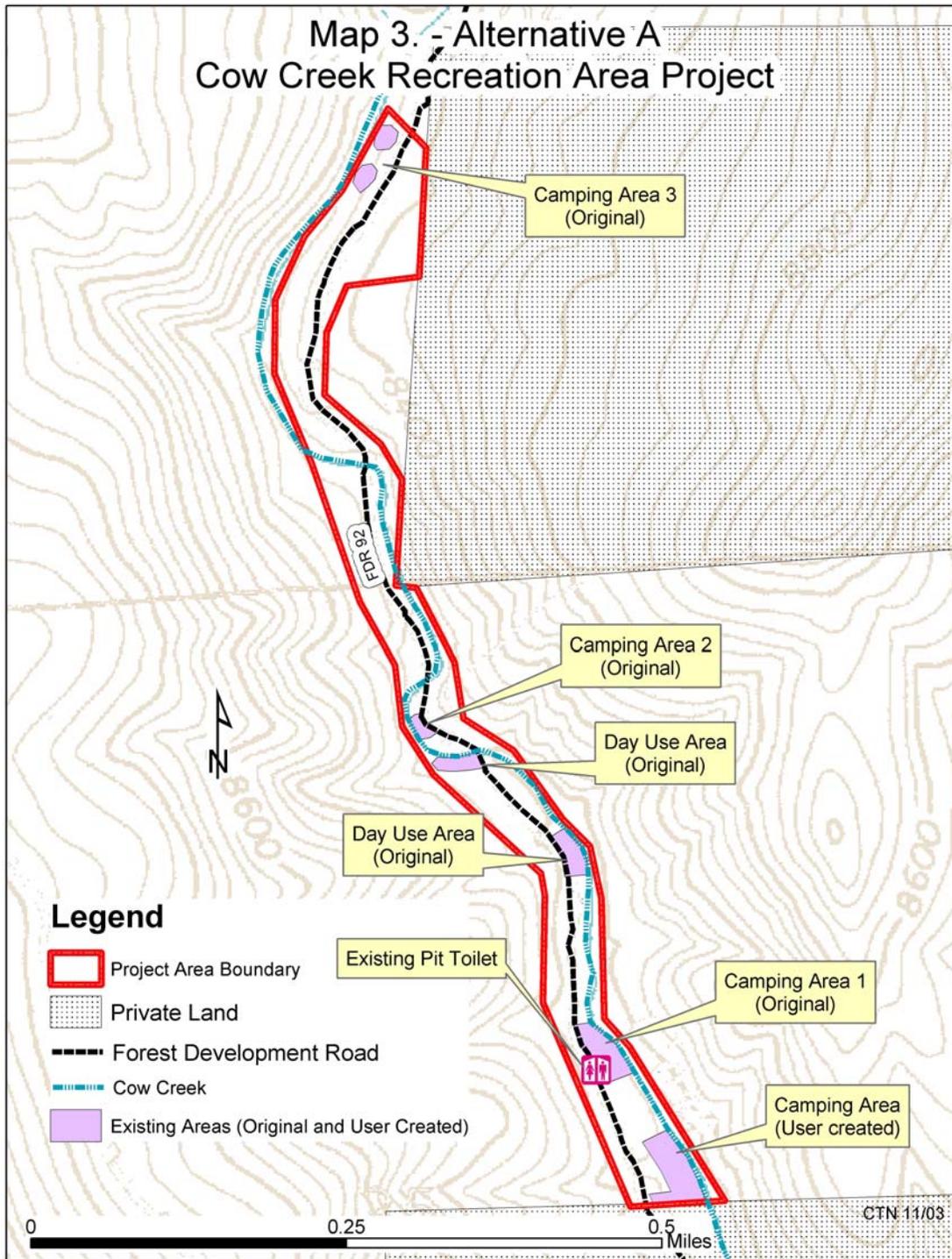
The following section is organized so that a comparison of all alternatives can be readily made. Table 1 provides a quantitative comparison of alternatives. Maps of each alternative will follow the detailed description of the alternative.

### Alternative A -- No Action:

Under the No Action alternative, current management plans would continue to guide management of the Project Area. This alternative would not meet the objectives stated in the purpose and need for action or move this area closer to the desired condition as outlined in the Forest Plan. The No Action alternative is required by law to be analyzed and used as a base line for the action alternatives. See No Action— Map (Map 3) map for locations of original Cow Creek Campground (CG) existing facilities and existing areas where activities (camping/day use) are occurring.

Below is a detailed description of Alternative A:

- Existing overnight use is expected to return to pre-fire numbers of 40 Persons At One Time (PAOT) which exceed the capacity of the original Cow Creek CG. Overnight and day use is expected to increase once the fishery returns to Cow Creek.
- Camping use would continue in proposed Group Camping Area (GCA) 1, original Cow Creek CG # 1 (Proposed GCA 2), original (proposed) Day Use Area 1, original (proposed) Day Use Area 2, original Cow Creek CG # 2, and immediately adjacent to Cow Creek in the area of original Cow Creek CG # 3.
- Camping would continue to occur immediately adjacent to Cow Creek at most of these areas. Resource damage would continue to occur from increased overnight campers impacting soils/water quality, creating user-created fire rings, etc.
- The remaining pit toilet would continue to deteriorate and would not meet State standards for collection of human waste.
- There would continue to be only one picnic table and the existing fire rings would remain user-created and made of native rock.
- Overnight and day users would continue to park along side FDR 92 in user-created parking spots.
- The campground would not accommodate people with disabilities.



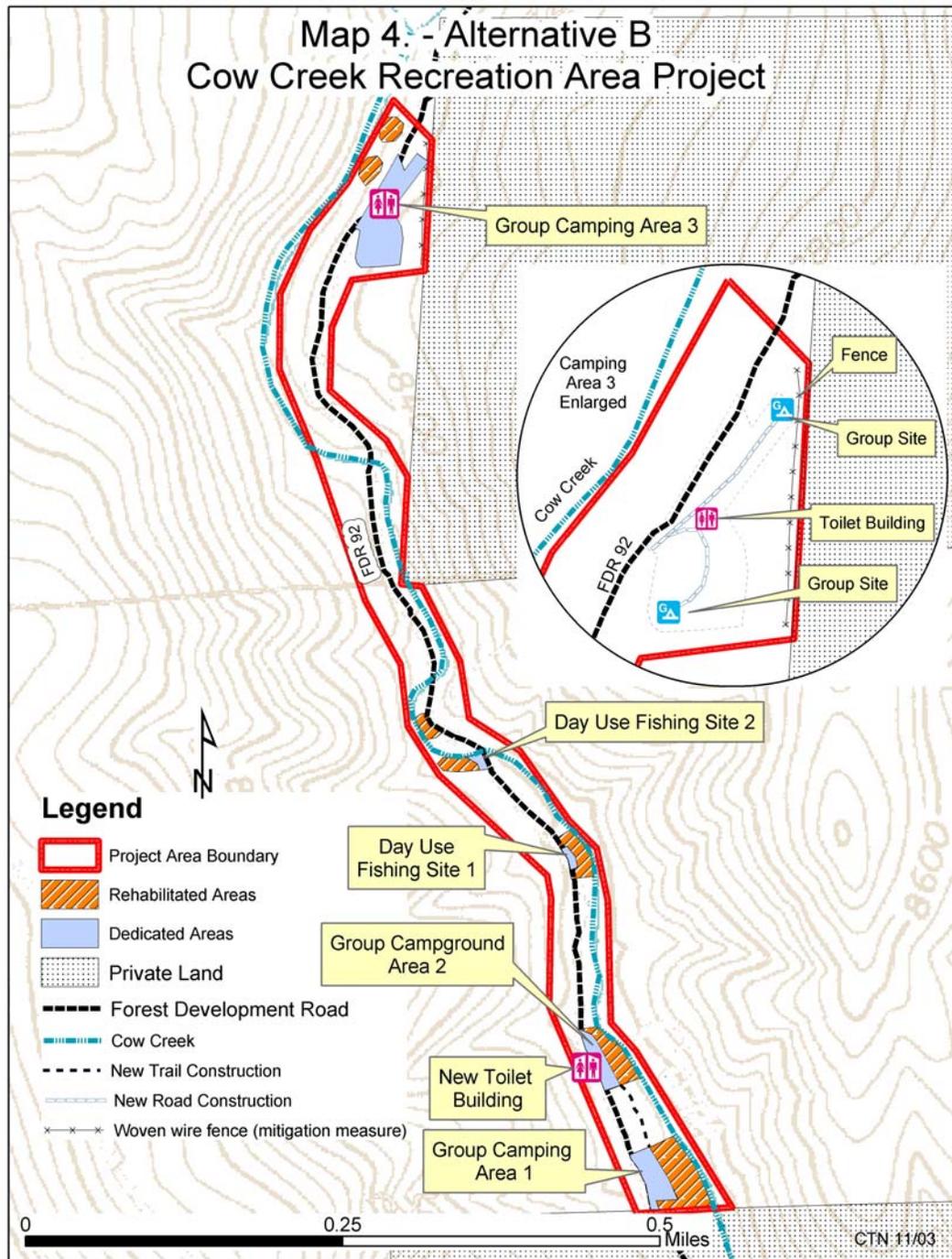
### Alternative B - Proposed Action

Below is a detailed description of the Proposed Action Alternative. See Proposed Action Map (Map 4) for location of proposed activities. Over the next two to three years the Pecos/Las Vegas Ranger District is proposing to:

- Construct a group camping area, Group Camping Area 1, near an existing user created camping area. Group Camping Area 1 would accommodate a maximum of 15 PAOT.

Construction would involve moving existing camping areas away from the edge of Cow Creek and further up the slope. Parking for Group Camping Area 1 would be along FDR 92 and would be designed for three (3) vehicles. This area would be considered a “walk-in” site and not accessible. All developed facilities for this area would dedicate approximately 11,571 sq. ft (.26 acres). Approximately 29,269 sq. ft. (.67 acres) of the user created camping area would be rehabilitated and posted as closed to overnight camping.

- Original Cow Creek CG #1 (Group Camping Area 2) would be reconstructed to accommodate a maximum of 15 PAOT. Reconstruction would again involve moving existing camping areas away from the edge of Cow Creek and further up the slope. Group Camping Area 2 would have drive-in parking for 3 vehicles in the camping area. All developed facilities for this area (including the new toilet facility described below) would dedicate approximately 17,510 sq. ft. (.4 acres). Approximately 23,942 sq. ft. (0.55 ac) of existing camping area along the edge of Cow Creek in this area would be rehabilitated and posted as closed to overnight camping.
- The existing pit toilet located near Group Camping Area 2 would be removed and the area rehabilitated, unless the new toilet is constructed in this location. A new sealed vault toilet facility would be installed for Group Camping Areas 1 and 2. Two locations would be analyzed for this toilet– the first on the east side of FDR 92 and the second on the west side of the road near the existing toilet. The best site would be chosen based on engineering criteria. It may be necessary to construct a small pull out for the toilet facility. This facility would be accessible.
- Construct a new camping area with three camping sites (Group Camping Area 3) that would have capacity for a maximum of 45 PAOT. There would be a sealed vault toilet constructed in this area to accommodate all three camping sites. A new road would be constructed to access these sites. The road would be approximately 0.1 miles. All developed facilities for this area would dedicate approximately 37,300 sq. ft. (0.86 acres).
- At all developed sites, hazard trees within the area would be removed. All campsites would have defined camping areas, picnic tables and fire rings with grills. At least 20% of all the camping sites would be accessible.
- Provide a defined parking area for 5 vehicles at Day Use Fishing Site 1. To prevent vehicles from driving up to the edge of Cow Creek, natural barriers would be used to close off that area. Total area dedicated for this day use area would be about 3,840 sq. ft. (0.09) acres.
- At Day Use Fishing Site 2, close the area immediately adjacent to Cow Creek to prevent people from parking too close to Cow Creek. Construct a parking area to accommodate 4 vehicles about 100 feet south of Cow Creek. Total area dedicated for this day use fishing area would be approximately 3,448 sq. ft. (.08 acres).
- In Day Use Fishing Sites 1 & 2, approximately 27,157 sq. ft. (0.62 acres) would be closed to overnight camping and rehabilitated. These areas would be posted closed to overnight camping.
- In the original Cow Creek CG #2 rehabilitate approximately 3,790 sq. ft. (.09 acres) where camping has occurred along the edge of the creek. This area would be posted as closed to overnight camping.
- This area would be placed under a Fee Schedule for overnight camping only. Proposed fees would be \$5.00 per vehicle per night.

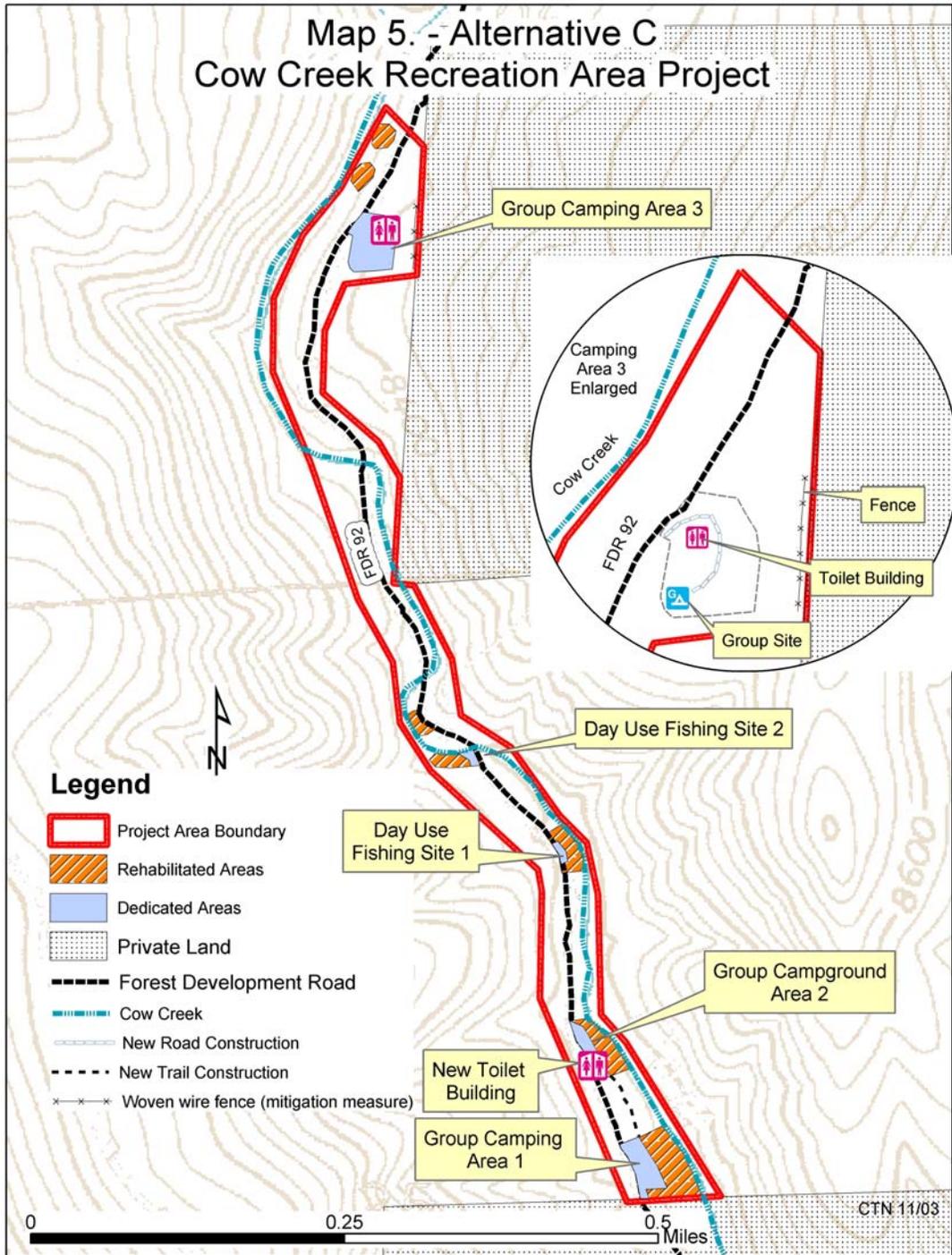


**Alternative C—Reduced Capacity, Day Use Emphasis:**

In response to comments received on the scoping letter for the proposed action, another alternative was developed to address Issue #1. This alternative would decrease the overall PAOTs in the Project Area, decrease the amount of Overnight PAOTs, and increase the proportion of Day Use PAOTs relative to Overnight PAOTs. See Alternative C Map (Map 5) for locations of proposed facilities and activities.

- Group Camping Area 1 would be closed and 29,269 sq. ft. (0.67 acres) of this area would be rehabilitated. This area would be posted closed to overnight camping.

- Original Cow Creek CG #1 (Group Camping Area 2) would be reconstructed to accommodate a maximum of 15 PAOT. Reconstruction would involve moving existing camping areas away from the edge of Cow Creek and further up the slope. Group Camping Area 2 would have drive-in parking (for 3 vehicles) in the camping area. All developed facilities for this area would dedicate approximately 17,510 sq. ft. ((0.40 acres)(which also includes the new toilet facility described below).
- Approximately 23,942 sq. ft. (0.55 acres) of area in Group Camping Area 2 would be closed and rehabilitated in areas where camping has occurred along the edge of the stream. These areas would be posted closed to overnight camping.
- The existing pit toilet located near Group Camping Area 2 would be removed and the area rehabilitated, if the new toilet facility is not constructed in this location. A new sealed vault toilet would be installed near the campsite area. Two locations would be analyzed for this toilet, with the best site selected according to engineering criteria (see the Proposed Action for the possible locations for the toilet). This facility would be accessible.
- A new camping area with one camping site (proposed Group Camping Area 3) would be constructed to accommodate a capacity of 15 PAOT. There would be a sealed vault toilet constructed in this area to accommodate the camping site. About .05 miles of new road would be constructed to access this site. This site would have drive in parking for 3 vehicles. Total area dedicated for Group Camping Area 3 would be approximately 15,234 sq. ft. (0.35 acres).
- All campsites would have defined camping areas, picnic tables and fire rings with grills. At least 20% of all the camping sites would be accessible.
- A defined parking area for 5 vehicles at Day Use Fishing Site 1 would be constructed. To prevent vehicles from driving up to the edge of Cow Creek, natural barriers would be used to close off that area. Total area dedicated for this day use area would be about 3,840 sq. ft. (0.09 acres)
- At Day Use Fishing Site 2, the area immediately adjacent to Cow Creek would be closed to prevent people from parking too close to Cow Creek. A parking area to accommodate 3 vehicles would be constructed about 100 feet south of Cow Creek. Total area dedicated for this day use fishing area would be approximately 3,448 sq. ft. (0.08 acres)
- In Day Use Fishing Sites 1 & 2, approximately 27,157 sq. ft. (0.62 acres) would be closed to overnight camping and rehabilitated. These areas would be posted closed to overnight camping.
- Approximately 3,790 sq. ft. of area (0.087 acres) in the original Cow Creek CG # 2 would be rehabilitated where camping has occurred along the edge of the creek. This area would be posted as closed to overnight camping.
- This area would be placed under a Fee Schedule. Proposed fees would be \$5.00 per vehicle for overnight camping.



## Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in Table 1 is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 1. Quantitative Comparison of Alternatives

	<b>Alt. A – No Action</b>	<b>Alt. B – Proposed Action</b>		<b>Alt. C – Reduced Capacity, Day Use Emphasis</b>	
Group Camping Area 1	Unregulated Camping	PAOT 15	Vehicle Parking 3	PAOT 0	Vehicle Parking 0
Group Camping Area 2	Unregulated Camping	PAOT 15	Vehicle Parking 3	PAOT 15	Vehicle Parking 3
Group Camping Area 3	NA	PAOT 45	Vehicle Parking 9	PAOT 15	Vehicle Parking 3
Day Use Area 1	Unregulated Camping	PAOT 20	Vehicle Parking 5	PAOT 20	Vehicle Parking 5
Day Use Area 2	Unregulated Camping	PAOT 16	Vehicle Parking 4	PAOT 12	Vehicle Parking 3
Total Day Use PAOT	unknown	36		32	
Total Overnight PAOT	≈ 40	75		30	
Total PAOT	≈ 40	111		62	
Total Vehicle Parking	≈ 8 (overnight)	24		14	
Sq. ft. of Dedicated Area	6,398 sq. ft. (0.15 ac)	73,669 sq. ft. (1.69 ac)		40,032 sq. ft. (0.92 ac)	
Sq. ft. of Impacted Area	91,534 sq. ft. (2.10 ac)	0		0	
Sq. ft. of Rehabilitated Area	0	84,158 sq. ft. (1.93 ac)		84,158 sq. ft. (1.93 ac)	
Toilets	1 non-functioning pit toilet	2 sealed vault toilets		2 sealed vault toilets	

## Mitigation Common to All Alternatives

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In response to public comments on the proposal, one mitigation measure was developed to address Issue # 2--Trespassing onto private property near proposed Group Camping Area 3. These mitigation measures include:

- Installing a 6 ft. high woven wire fence along the private property boundary line east of proposed Group Camping Area 3. The length of the fence would depend on the location of the proposed camping sites. The private property boundary would also be signed.

The following mitigation measures would be implemented to avoid any direct impact to heritage resources:

- Flag and avoid all known heritage sites.
- Limit ground disturbing activities in the vicinity of heritage resources.
- Educate project personnel.

In addition to this project specific mitigation measure, any activities proposed for implementation are required to follow the Forest Plan Standards and Guidelines, Best Management Practices (BMP's) and any other Forest Service Policies, such as protection of heritage resources. The BMP's implement the Soil and Water Conservation Practices (SWCP).

## Monitoring

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Monitoring provides quality control and an adaptive management strategy. For this project the following monitoring would occur:

- Disturbed areas would be seeded preceding moist seasons, and monitoring would occur for two seasons following implementation.
- If either of the action alternatives is selected, Group Camping Area 3 would need to be patrolled during the busy camping season to ensure that campers are not recreating on the private property to the east of the group camping site(s).
- Known heritage resources (historic acequia) located within the immediate Project Area would be clearly identified. Project supervisors, equipment operators, and other personnel would be briefed on the location of those resources. Personnel would be briefed regarding the need to avoid activities that could potentially impact heritage resources. All project activities conducted where heritage sites are known to exist would be monitored to insure full compliance.

## CHAPTER 3 • EXISTING CONDITION/ 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. It also presents the scientific and analytical basis for the comparison of alternatives presented in Table 2 in Chapter 2.

This Chapter describes the environmental effects for the following resource areas

- Recreation
- Scenic Resources
- Soil and Water
- Heritage
- Wildlife/Fish
- Sensitive Plants
- Environmental Justice

### Cumulative Effects

Cumulative effects are direct and indirect effects that result from the alternatives, when considered with other past, present or reasonably foreseeable actions of the Forest Service or other agencies or private parties. Cumulative effects analysis does not simply add up the effects for the categories of action. Actions may have synergistic or compensating effects, not just additive effects.

It should be noted that the existing (or affected) environment is the result of impacts from past and present activities. Therefore, consideration of the impacts on the existing environment for each alternative unavoidably takes into account past and present actions and their effects.

An environmental effect on a particular resource can have different spatial and temporal limits. In this chapter, each resource section describes the area reviewed for possible cumulative effects. The cumulative effects analysis of a resource requires a specialist to choose activities that have occurred within their cumulative effects analysis area that overlap in time and location with each alternative. The specialist then analyzes the incremental effect of the alternative when added to these activities.

### Recreation Resources

#### Existing Condition

Cow Creek, located in the Sangre de Cristo Mountains, has long been a destination for local users who center their recreation activities around multi-generational family gatherings near water. The natural setting of the creek provides an environment that meets the ideal for a weekend getaway or picnic because to a person from the arid plains below, the creek and

evergreens are wonderfully refreshing. In the past, day use was high in the summer months with overnight use occurring mostly on weekends. Other commonly observed activities include, fishing and sightseeing, especially in the autumn when the aspen turn a vivid golden yellow.

National research on recreation indicates that over half the population picnic during the year and more than 70% participate in family gatherings in outdoor areas away from home, and trends indicate these percentages would increase slightly in the future. (NSRE 2000) Twenty-five percent of the population camp and 13% fish in mountain rivers, lakes and streams. The percentage of people participating in these activities is predicted to stay constant, which implies an increasing number of participants as the population increases. These activities are popular in the Project Area.

Recreation on the public lands, in Santa Fe National forest, and in the Cow Creek Watershed is discussed in the Viveash Fire Salvage EIS (USDA Forest Service 2002, pg. 3-39 & 40). Two findings in that document that are of particular importance with respect to the Cow Creek Recreation Project Area, are that (1) the predominant users of the area for camping and day use fishing are local residents (both individuals and families) and (2) the stream and associated fisheries are the main attractors to the area.

Local access to Cow Creek campground is from the town of Pecos via FDR 86 and FDR 92. The Viveash Fire negatively affected the scenic viewing component of the landscape. However, the narrow drainage retained some living trees, which in combination with the recent sprouting of aspen, shrubs and grasses continues to provide a pleasant environment for visitors. Water in the stream contains sediment, but muddy stream water is a common occurrence in this arid climate due to flash flood hydrology. However, streamside recreation remains a valued commodity. Cow Creek was stocked as a put-and-take fishery within the Project Area in the spring of 2003. Anglers have returned to the stream banks, families' camp along the stream, and other recreation activities are occurring despite the devastating changes in the surrounding landscape caused by the fire.

Brown trout are found in Cow Creek; a condition resulting from privately stocked ponds (USDA Forest Service 2002, pg. C-36). As stream conditions improve, the USFS will be working with the USFWS and NM Department of Game and Fish to determine if Cow Creek will be considered for the re-introduction of native Rio Grande cutthroat trout.

Vegetation in the project area includes ponderosa pine, Douglas fir, Englemann spruce, aspen; shrubs such as mountain mahogany and riparian cover types of willow, alder, and sedges.

The narrow band of vegetation was spared from the Viveash Fire along the stream course is relatively healthy except in those areas where the ground has been compacted by extensive recreation use. (See impacted areas described in Chapter 2). Vegetation has also been impacted by post fire activities for flood control and sedimentation reduction from up stream burned areas. The Chiricahua dock (*Rumex orthoneurus*), a Forest Service Sensitive plant, very likely occurs in riparian areas (see Sensitive Plants section 3.6.1) which would include Cow Creek. In the upper zone of the project area where the fire moved through there are numerous standing snags surrounded by regenerating aspen clones. These small trees are dense and reaching six feet high in the second growing season.

The original Cow Creek campground consisted of five small areas scattered along the creek. Over the past forty plus years, all the picnic tables except one have deteriorated or were taken away, fire rings and pedestal grills lost integrity and were removed or vandalized at some point in time the two uppermost sites were closed. Recreation use continued and expanded creating dispersed sites along the creek. Indiscriminant and unregulated use led to compacted soils and

damaged vegetation. Current use in the area is estimated to be 40 PAOT. Prior to the fire, usage was even higher than this on summer weekends and holidays.



Picture 1. Original Cow Creek Campground Site #1

The Viveash Fire drastically changed the appearance of the surrounding landscape for recreation in Cow Creek. The resulting conditions are discussed in the Viveash EIS (USDA Forest Service 2002). Additionally, the Cow Creek campground facilities are in poor condition and inadequate for even the originally designed people at one time (PAOT of 25). The one remaining toilet is not functional, not accessible, and not on an accessible path. Firerings are falling apart or are user-created with gathered rocks, and only one picnic table remains and it is in poor condition. Parking is not defined and the few barriers that once existed are compromised and ineffective. Paths are user-created and in some instances causing erosion and sedimentation into the stream. The road is in fair condition but safe turnouts for parking, camping or day use are needed.

## Environmental Consequences

### Forest Plan Direction/Other Direction

The Forest Plan states that new development and rehabilitation of existing campgrounds and picnic areas would be undertaken in order to provide increased capacity, solve environmental problems associated with uncontrolled use, and increase management efficiency (FP, pg. 6). The plan also calls for increased recreation opportunities for a wide variety of developed experiences, with provisions for developed site visitor use, including access for people with disabilities (FP, pg. 18). Under the Desired Future Condition for camping/picnicking, the Santa Fe National Forest Transition Plan for accessibility (USDA Forest Service, no date) states, "Although developed camping and picnicking meet the minimum requirement of programmatic access, accessible opportunities on the Pecos/Las Vegas District ... need to be expanded." The Recommended Action states, "Universal design shall be incorporated to the extent possible as existing camp and picnic areas are reconstructed ...". Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG) (USDA Forest Service 2003) provide specific direction for site design and implementation.

The campground is classified by the Forest Service Recreation Opportunity Spectrum (ROS) as Roaded Natural. This setting is characterized by natural appearing environments with moderate evidence of human activities, which should be in harmony with the natural environment, as

should resource modifications. The construction of facilities for conventional motorized use is allowed under the ROS category of Roded Natural.

## Response to issues

Issue: Capacity of the area

The Cow Creek watershed, which contains many parcels of private property, has been used for camping, fishing and other day use activities for many years. People would continue to use the Forest Service roads, stream banks and stream as well as adjacent public land. When facilities and areas are designated for use by the public, people tend to stay in those areas, thereby limiting the impact of use. Designing facilities for a set capacity can be a factor that encourages a certain level of use, but enforcement of capacity limits is required for complete compliance.

Issue: Trespassing

The comments above on capacity also pertain to trespassing. Additionally, the location of designated sites and interposition of barriers relative to the location of private property can influence whether or not people trespass from a recreation site. The majority of users abide by designated limits and fencing assists with defining where boundaries are located. The use of a six-foot (especially high) high fence would assist in limiting trespass from the campground on to private property.

## Alternative Comparison

### Alternative A – No Action

Direct & Indirect Effects

Anglers, campers and other visitors returned to use Cow Creek in the season following the Viveash fire and their numbers are increasing as the area recovers. The improved condition of the stream would encourage more recreation fishing; demand would increase for related facilities such as safe parking for anglers. The deteriorated facilities would continue to be inadequate and as time passes conditions would worsen. Because there is no adequate toilet facility for people to use they would use the ground in and around the stream and camping sites. This creates a sanitation problem immediately and a water quality issue in the long run, and contributes to an unpleasant recreation experience.

Not maintaining the campground does not meet Forest plan direction and would not meet the public's expected recreation experience for Forest Service developed sites. Facilities in the campground would continue to fall short of the requirements of the Americans with Disabilities Act (ADA) 1990, and the intent of the Forest Transition Plan for access (USDA Forest Service, N.d.). People with disabilities, a segment of the recreating public, would continue to use the site for quasi-dispersed recreation and could initiate legal action against the Forest Service because the facilities provided are not accessible.

The original Cow Creek CG had 6,398 sq. ft. (0.15 acres) of dedicated area. However, due to unregulated camping, there is now 91,534 sq. ft. of area (2.10 acres) affected (impacted) from campers in the Project Area. Under the No Action alternative, the amount of impacted area is likely to increase, as unmanaged and uncontrolled use of the area is expected to increase in response to both increased population and increased demand for water based recreation in the local area. Under the No Action Alternative 0 sq. ft. of the Project Area would be rehabilitated.

Cumulative Effects

The cumulative effects area for recreation is the FDR 92 Loop. No other developed Forest Service sites are planned for this area, however, one ranch north of the Project Area is expanding its recreation offerings to the public and other private property owners along the road corridor could develop

recreation businesses. Recreation would continue to occur along this forest road because of the forest setting and the creek. Not providing developed sites in an area that attracts visitors would escalate sanitation problems, create potential degradation to the stream, and foster continued user dissatisfaction.

#### Other Potential Effects

In other Forest Service recreation areas in New Mexico it has been observed that as a developed site degrades the incidence of vandalism and criminal behavior in that site increases (Buehler 2003). Local residents are the primary users of the Cow Creek campground, but if site conditions continue to worsen, they may eventually feel unsafe there.

### **Alternative B – Proposed Action.**

#### Direct & Indirect Effects

Anglers, campers and other visitors coming to use Cow Creek would find excellent facilities for developed site recreation when the proposed improvements are completed. The improved condition of the stream would encourage more fishing, increasing the demand for related facilities such as safe parking areas for anglers. The new facilities would provide sanitation that would meet health and safety standards and state law. Group camping areas would provide high quality furnishings for the local families using the area. Establishing designated sites would limit camping to those sites and make it easier for Forest personnel to enforce limits. Visitors would have parking for fishing and other day use activities with safe turn-offs for vehicles. Designated parking and barriers would limit impacts to the streamside. Indiscriminant use would be reduced, as visitors would be able to clearly identify officially designated use areas, thereby reducing impacts to riparian vegetation and streamside soils. Habitat for Forest Service sensitive species would be better protected.

The rehabilitation of areas along the creek would improve vegetation viability and the recreation setting. In proposed Camping areas and day use areas, some snags or hazard trees would be removed. [Distance from the edge of recreation perimeter for tree removal would equal 2.5 times the height of the tree.]

Forest plan direction would be met and the expected experience for developed site recreation would be found in the Cow Creek corridor. Facilities in the campground would meet requirements of the ADA and the Forest Transition Plan for accessibility (USDA Forest Service, N. d.). People with disabilities would be able to fully use the site.

Increase in the total PAOT would meet the projected needs for developed facilities in this area of the Pecos/Las Vegas District. Because this capacity is greater than what currently exists, nearby private property owners might encounter forest visitors more often.

#### Cumulative Effects

The cumulative effects area is the FDR 92 Loop. Under this alternative overnight camping use could increase from the current estimate of 40 PAOT to 75 PAOT, while day use could change from its current unknown amount to 36 PAOT. This additional usage, when added to the moderate amount of dispersed recreation from hunting, OHV use, equestrian use, and dispersed camping occurring in the FDR 92 Loop area would not exceed its planned capacity. The increased number of vehicles would not exceed the trips expected on a level 2 road, or in a developed recreation site. No other developed Forest Service sites are planned for this area, however, one private ranch north of the proposed project is currently expanding its recreation offerings to the public, and other private property owners along the road corridor could develop recreation businesses. Providing this Forest Service developed site,

including a toilet available to the traveling public would alleviate potential cumulative effects relating to sanitation problems, degradation to the stream, and user dissatisfaction.

### **Alternative C – Reduced capacity, day use emphasis.**

#### Direct & Indirect Effects

Anglers, campers and other visitors coming to use Cow Creek would have facilities for developed site recreation when the proposed improvements are completed. The new facilities would provide sanitation that meet health and safety standards and state law. Two group camping areas would provide high quality furnishings for the local families using the area and the designation of sites would limit camping to those sites. Visitors would have parking for fishing and other day use activities with safe turn-offs for vehicles. Designated parking and barriers would limit impacts to the streamside. Visitors would be able to clearly identify officially designated use areas, but because projected use exceeds the capacity of facilities constructed under this alternative indiscriminate use would likely continue and impacts to riparian vegetation and streamside soils might continue.

The rehabilitation of areas along the creek would improve vegetation viability and the recreation setting. In proposed Camping areas and day use areas, some snags or hazard trees would be removed. [Distance from the edge of recreation perimeter for tree removal would equal 2.5 times the height of the tree.]

Forest plan projections would only partially be met and the expected experience for developed site recreation would not be found in the Cow Creek corridor because this alternative reduces capacity. Facilities in the campground would meet requirements of the ADA and the Santa Fe National Forest Transition Plan (USDA Forest Service, N.d.). People with disabilities would be able to use the site.

Development as described in this alternative would improve facilities and conditions for developed recreation in this area of the Pecos/Las Vegas Ranger District, but not to the extent needed now or in the future. Lower camping and day use capacity would be more acceptable to nearby private property owners who are concerned about capacity issues in the area.

#### Cumulative Effects

The cumulative effects area is the FDR 92 Loop. Recreation would continue to occur along this forest road because of the forest setting and the creek. Reducing overnight camping use from 40 PAOT to 30 PAOT and from unknown day use to 32 PAOT day use does not provide enough developed recreation opportunity in an area that attracts visitors. The moderate amount of dispersed recreation, including hunting, OHV use, equestrian use, and dispersed camping, currently available in this area plus the capacity available in the Project Area under this alternative would not meet projected demand. The number of vehicles would not exceed the trips expected on a level 2 road, or in a developed recreation site. No other developed Forest Service sites are planned for this area, however, one private ranch north of the Project Area is currently expanding its recreation offerings to the public and other private property owners along the road corridor could develop recreation businesses. As these private parties increase recreation opportunities in the area, recreation demand might be better met. Providing this Forest Service developed site, including a toilet available to the traveling public would alleviate potential cumulative effects relating to sanitation problems, degradation to the stream, and continued user dissatisfaction.

## **Scenic Resources**

### **Existing Condition**

People who visit National Forests have an image of what they expect to see and each geographic region has an identifiable image. Scenery in the small valley where Cow Creek is located is valued because visitors traveling out of the arid grasslands below go there expecting a cooler setting and change of scenery. The natural setting of the creek typically meets the expectations of a trip into the mountains, including tall evergreens, wild flowers, and running water. Unfortunately the fires have eliminated most of the evergreen component of the scenery and it would be decades before this type of forest setting returns. A common sightseeing experience here is the autumn color when the aspen turn golden yellow. A natural benefit of the fire regime, this type of experience would increase dramatically as the aspen regenerate.

The Viveash Fire in 2000 burned west and east of Cow Creek and the Roybal fire in 2001 burned south and east. The fires burned across the foreground, middle ground and background views from all vantage points on FDRs 92 and 83 and in the Project Area. The scale and intensity of the burns dominates the view shed. Though these visual effects can be of interest to people, and are considered natural, blackened landscapes are not generally valued for their high scenic quality. In the valleys south and north of the project, fire behavior and suppression efforts spared structures and patches of trees creating a mosaic-like effect. The post fire activities for flood and sediment control have also contributed to an unnatural appearance in the area. The salvaging of dead timber has contributed short-term visual impacts but, as predicted in the Viveash EIS, in the long-term the scenic resource should improve.



(Photo 3202 – Snag)

Generally, throughout the landscape; burned trees, exposed soils, and ash contrast with grasses, sprouting shrubs and partially burned or unburned trees. A narrow band of vegetation spared along the stream course in the Project Area is relatively intact except in those areas where the ground has been compacted by extensive recreation use and in areas disturbed by post fire mitigation activities. The burned upper slopes of the Project Area are marked with aspen, fir and ponderosa pine snags. The most visually outstanding feature is the vigorous stand of regenerating aspen. They are intensely green and growing rapidly, reaching six feet high in the second growing season.



(Photo upland site)

This section summarizes the existing scenic condition based on the Visual Management System (VMS) with additional language and analysis from the Scenic Resources section of the Viveash Fire Salvage EIS (USDA Forest Service 2002), using the Scenic Management System (SMS)<sup>1</sup>.

## 1. Landscape Character

### Natural elements:

Cow Creek Campground Project Area is located in the Sangre de Cristo mountains which are in the West Range landscape character. This type is characterized by mountains that have highly dissected slopes, sharp angular ridge tops and deep v-shaped canyons (USDA Forest Service 1989). The mountains exhibit many granite and sedimentary rock out crops. Coniferous forest is the predominant vegetation and in the Project Area includes ponderosa pine, Douglas fir, and Englemann spruce. Aspen is also found intermingled in patches. Under story typically consists of shrubs such as mountain mahogany and rabbit brush, meadow grasses, wildflowers and drainages with stringers of riparian vegetation: willow, alder, and sedges. Cow Creek is one of the small perennial watercourses that drain from the mountains.

### Cultural elements:

Information in the Viveash Fire Salvage EIS recreation section emphasizes that the predominant users of the area for camping and day use fishing, are local residents including both families and individuals (USDA Forest Service 2002, ppg. 3-39,40). This implies that the local community connects with a strong “sense of place” to the Cow Creek campground. Community members have used the area for generations, and have memories and expectations regarding the appearance and organization of the environment. Although they may have experienced considerable disappointment after the fires they still value the remaining forest, stream and potential recreation experience. Recreation, ranching and utility lines are evident elements in the Project Area.

## 2. Scenic Attractiveness

This is the evaluation of the characteristics of the land, giving value to topographic features and vegetation type. The course of Cow Creek is rated as scenic attractiveness A – distinctive,

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<sup>1</sup> The VMS and SMS are explained in the Environmental Consequences section for Scenic Resources under Forest Plan Direction/Other Direction.

because it is a “perennial water course with flows less than 10 cfs having features such as cascades and pools”.

### **3. The distance zone of concern to this project is the foreground –**

This can be the area up to one half mile and the immediate foreground – 0 to 300 feet. The concern level is the relative importance of the scenery from the perspective of the major users of the area, the type of uses occurring and the numbers of users. This recreation site is a concern level 2.

#### **Existing Scenic Integrity**

The Viveash Fire drastically changed the appearance of the landscape surrounding Cow Creek, those results and conditions are discussed in the Viveash EIS (USDA Forest Service 2002). The existing scenic integrity for the Cow Creek Project Area is low, a result of the disturbance caused by fire, fire suppression, post fire mitigation activities, and pre-existing impacts from recreation use combined with little or no maintenance in the recreation sites.

### **Environmental Consequences**

#### **Forest Plan Direction/Other Direction**

All lands in the Santa Fe NF are managed to achieve some level of visual or scenic quality (FP, pg. 7) Existing management direction for the Santa Fe National Forest Plan is based on the Visual Management System (VMS)<sup>2</sup> and specified Visual Quality Objectives (VQOs) for all management areas. The lands in management area E (location of project) are in a VQO of partial retention except for foreground of developed recreation sites (FP, pg. 118). These would be managed to a VQO of retention. There, management activities would not be visually evident within one year of project completion.

The National Forest Scenery Management System (SMS) was introduced in 1996, updating the VMS (USDA 1996b). This system expands concepts to accommodate ecosystem management, time frames of natural systems and integrates cultural values or “sense of place” into the process (places reflect the commonly shared images of the forest based on people’s commonly shared image of specific geographic areas). The Santa Fe National Forest will not implement SMS until Forest Plan revision except for projects of significant scope to warrant a plan amendment (McDougle 1997). The rehabilitation of the Cow Creek campground is not in that category.

Additional plan comment related to scenic resources:

Maintain scenic diversity by perpetuation, regeneration of stands of aspen; maintain an aesthetic mix of [aspen] stands with a variety of ages, do not convert to conifers (FP, pg. 58)

### **Response to issues**

#### **Issue: Trespassing**

A six-foot high fence intended to limit trespass from the campground onto private property is unusually high as a boundary marker for recreation sites. Recreation sites are commonly fenced with four strands of smooth wire on four-foot high posts. The six-foot high posts would be visible from the road and camping site(s) but the wire mesh would fade into the surrounding vegetation and hillside texture from distances over twenty feet. Close to the fence it would be seen and

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<sup>2</sup> A complete description of VMS is found in USDA Forest Service 1974.

would appear as a formidable, tall object. Over time the under story shrubs and aspen trees would obscure most of the posts from the distance views.

## **Alternative Comparisons**

### **Alternative A – No Action**

#### Direct & Indirect Effects

Deterioration of vegetation, soil and facilities from unregulated recreation use in the Project Area would continue to diminish the scenic integrity of the landscape and would not meet Forest plan direction to maintain scenic quality standards.

#### Cumulative Effects

The cumulative effects area for scenic resources is the FDR 92 Loop. No other developed sites exist or are planned for this area. Recreation would continue to occur along this forest road because of the forest setting and the creek. Not providing developed sites anywhere in an area used for recreation would escalate degradation to the stream and vegetation, both of which are major components in the value of the scenery. The site would continue to be used and the satisfaction level would drop with continued deterioration in the scenic condition.

### **Alternative B– Proposed Action**

#### Direct & Indirect Effects

Anglers, campers and other visitors coming to use Cow Creek would find facilities aesthetically fitting the environment and a scenic integrity objective of high within the Project Area; however, the existing scenic integrity of the surrounding landscape would be low. A long-term reduction in impacts to vegetation and soil in the campground area would contribute to higher scenic integrity in the immediate foreground.

The rehabilitation of areas along the creek would contribute to a higher scenic integrity in the immediate view shed of the road corridor.

The sight of a campground and parking for vehicles would affect the roadside scenery. However, if designed to fit into the environment they would not intrude inappropriately and would be less detracting than haphazard parking and the visual anomaly caused by indiscriminate recreation use. Reconstructed recreation facilities would meet Forest plan direction for scenic quality in developed sites and the area would come closer to reaching an SIO of high.

#### Cumulative Effects

The cumulative effects area for scenic resources is the FDR 92 Loop. There are no other existing developed Forest Service recreation sites and none are planned. Private land owners in the corridor might develop their properties and might build structures or other facilities. This would cause the scenery to appear more rural along the road corridor. The reconstructed campground under this alternative would contribute to this rural appearance.

### **Alternative C – Reduced capacity, day use emphasis**

#### Direct & Indirect Effects

Effects are the same as alternative B

#### Cumulative Effects

Effects are the same as alternative B with slightly less developed appearance contributing more to a long-term rural appearance.

## Soil and Water

### Existing Condition

The one perennial stream that bisects the area, Cow Creek, is part of the headwater tributaries of the Pecos River. The state of New Mexico has established several designated uses for Cow Creek. These designated uses include domestic water supply, fish culture, high-quality coldwater fishery, irrigation, livestock watering, wildlife habitat, and secondary contact (human contact with water) (New Mexico Water Quality Control Commission, 2000)

Prior to the Viveash Fire (May & June 2000), Cow Creek was experiencing water quality impacts associated with stream deposits from grazing, agriculture, road maintenance and runoff, removal of riparian vegetation, and streambank modification and destabilization. Because of these impacts, Cow Creek was listed as only partially attaining its designated uses. Current post-fire conditions (July 2000 to present) include increased turbidity during short durations of high flows as sediment is delivered to downstream valleys.

The Viveash Fire intensity was the lowest in riparian areas, which were dominated by dense conifers, which consequently lost little of their vegetative cover. More open riparian areas with willow, aspen, and sedges remained largely intact after the fire. Early seral plant and grass species are now characteristic of these riparian sites. The Cow Creek project area does have the majority of its overstory vegetative cover remaining within its riparian area. However, the northern portion of the project area was burned over resulting in 100% mortality of the overstory on approximately 30% of the area. There is a long-term (50 to 100 years) supply of downed woody debris recruitment within and adjacent to the Cow Creek Recreation Project Area.

The Terrestrial Ecosystem Survey (TES) for the Project Area indicates that landslides and other mass failures are unlikely. Soil types in the project area can be identified and described using the TES Data. The site is characterized by deep loamy alluvial deposit (stream laid) soils. Dominant riparian vegetation at the site are Thinleaf Alder; *Alnus tenuifolia*, Narrowleaf Cottonwood; *Populus angustifolia* and Engelmann Blue Spruce; *Picea pungens* Englemann. This site also supports a diverse population of shrubs forbes and grasses a few of which are: Arizona Fescue; *Festuca Arizonica* Vasey, and Kentucky Bluegrass; *Poa pratensis* L.

The Cow Creek Campground has a footprint defined by the original site plan. The original area of dedicated land was approximately .15 acres (6,398 sq. ft.). Over time, this footprint has expanded and now encompasses 2.10 acres (9,534 sq. ft.). The existing camping and day use sites are located between Forest Development Road (FDR) 92 and Cow Creek proper. All of the camping sites are located in the flood plain of Cow Creek. The remaining pit toilet is located on the upslope side of FDR 92 above the flood plain. There are no wetlands subject to the jurisdiction of section 404 of the Clean Water Act present in the campground project area or the campsites.

The long-term presence of the campground units, expansion of vehicle parking areas, addition of user created sites, and general passive management of the area has reduced riparian vegetation and contributed to soil compaction in the area. All of these impacts occur within and adjacent to the heavily used sites, creating conditions of a degraded floodplain and reduced water quality in Cow Creek.

In June and July of 2001, Proper Functioning Condition (PFC) criteria were used to examine the upper Cow Creek watershed within and just above the Project Area. The reach that bisects the Project Area was rated as “functional at risk with an upward trend” (USDI, 1998). This definition suggests that the reach is in a functional condition, however one attribute makes it susceptible to degradation. This reach starts at the confluence of Cow Creek and Rito Osha and ends at the Forest Service boundary with private land. This reach is approximately 1.5 miles in length. This analysis determined that the stability of the substrate (bedrock) and the narrow rock canyon geology were critical factors in this reach receiving a functional rating. The risks to functionality were noted as--augmented flows (due to the fire) and lack of diversity in the riparian vegetation. However, the riparian species that were present (alders) are vigorous and numerous.

In September 2002, this reach of Cow Creek had a noticeable plume of sediment, which appeared pronounced in the afternoons (noon to 4 pm). A Forest Service investigation and inquiry with the State of New Mexico Environment Department revealed that owners of a private ranch were constructing several impoundments for trout fishing use on the ranch located above the Project Area. At present, June 2003, this phenomenon appears to have lessened, as pond construction activities have been completed and vegetative cover been re-established.

### **Environmental Consequences:**

#### Alternative A – No Action

##### Direct/Indirect Effects

No campground relocation or rehabilitation would occur under this alternative. In the short term camping and day use recreation would continue in much the same manner as in the recent post-Viveash Fire years. As post-fire recovery continues, pre-fire camping and day use recreation patterns are expected to return. As discussed above and in the recreation specialist report, recreational use of the area would continue to be unregulated and reflect the vagaries of a user developed arrangement that would contribute to sprawling impact areas of multiple fire rings, parking spots and tenting or recreational vehicle (RV) sites.

The current footprint and impacted areas would remain the same or continue to expand with increased use. Dedicated and impacted areas combined would be approximately 2.10 acres (9,534 sq. ft.) (larger if use increases). Some of these impacted sites are located adjacent to Cow Creek and would continue to be used and possibly expanded as unmanaged use continues.

The continuation of these use patterns would contribute to a reduction in water quality in Cow Creek from increased sediment availability due to lack of vegetation at the campground. This reduction in water quality from sediment would appear to be substantial in the immediate area of the reach along the recreation site, but would be negligible relative to reductions associated with other land use activities within the watershed. The anticipated water quality degradation stems from the susceptibility to erosion of the existing sites due to their location and condition. Unmanaged recreation use would continue to occur within riparian areas, which would continue to reduce existing riparian vegetation along the bank and prevent the riparian vegetation from recovering where previously impacted.

The existing non-functioning pit toilet would continue to be used by campers as conditions allow. Waste and effluent would continue to build-up, thus remaining a point source for nutrients and bacteria that could leach into Cow Creek. This would contribute to a degradation of water quality by increasing nutrients and bacteria. One effect of this bacterial increase would be a reduction in dissolved oxygen for fish and other organisms in Cow Ck. Without improved sanitation facilities at this campground, microbial concentrations from both the pit toilet and dispersed use in the

campground will accumulate adjacent to the stream and have the potential to runoff into the stream from overland flow during storm events (USGS, 2000).

#### Alternative B--PROPOSED ACTION

##### Direct/Indirect

This alternative would reduce upland and streambank erosion by rehabilitating approximately 1.93 acres (84,158 sq. ft) of existing recreation sites and removing these sites from the riparian area to upland sites. By moving these sites away from Cow Creek, there would be a decrease from existing levels in turbidity and stream-bottom deposits in Cow Creek due to recovery of riparian (streamside) vegetation. Design, education, and enforcement of camping and use regulations would ensure a change in use patterns in the Project Area. This would allow recovery efforts such as seeding and planting in the rehabilitation areas to become established. In turn, ground cover would increase and the amount of exposed or bare soil in Project Area would decrease. Design features such as barriers, layout ergonomics and drainage features would help in both managing use and controlling storm water runoff. The new toilets would be located outside of the floodplain, and would remain adjacent to the proposed Group Camping Areas. The new vault type toilets would facilitate meeting the NM State standards for waste as stated in the purpose and need. This would ensure that the wastewater effluent from the toilet would meet appropriate disposal requirements including those stated in Section 23.11 of the Region 3 Forest Service Handbook (FSH) 2509.22 for Soil and Water Conservation.

During and immediately following construction, there would be bare soil resulting from the construction activities such as: equipment use, digging holes for footings, construction of driveways, parking places, table and tent sites. Stock piling of soil for fill and back fill would also occur. Reasonable and prudent measures described in the Forest Service Soil and Water Conservation Practices Handbook (SWCP, 2509.22) would be applied to the construction activities. Section 23.14 of the Soil and Water Conservation Handbook would preclude the stock piling of fill material where it could enter the stream and degrade water quality.

##### Alternative -- Cumulative Effects

The size (scale) of the Cow Creek Recreation Area and amount (magnitude) of recreation activity occurring in this area is very small relative to the size of the watershed and the total of all land use activities occurring in the watershed. Therefore, when the impacts on water quality and riparian areas from reconstructing the campground and from future recreation use in the Project Area is considered with all past, present and reasonable foreseeable future actions, these impacts are not individually substantial nor would they contribute to a cumulatively substantial impact in the watershed.

#### Alternative C -- Reduced Capacity, Day Use Emphasis

##### Direct/Indirect

This alternative would reduce upland (slopes on each side of the stream) and streambank erosion by rehabilitating approximately 1.93 acres (84, 158 sq. ft) of existing recreation sites and removing sites from the riparian area to upland sites. By moving these sites away from Cow Creek, there would be a decrease from existing levels in turbidity and stream-bottom deposits in Cow Creek. Design, education and enforcement of camping and use regulations would ensure a change in use patterns in the Project Area. This would allow recovery efforts such as seeding and planting in the rehabilitation areas to become established. In turn, ground cover would increase and the amount of exposed or bare soil in Project Area would decrease. Design features such as barriers, layout ergonomics and drainage features would help in both managing use and controlling storm water runoff. The new toilets would be located outside of the

floodplain, and would remain adjacent to the proposed Group Camping Areas. The new vault type toilets would facilitate meeting the NM State standards for waste as stated in the Purpose and Need. This would ensure that the wastewater effluent from the toilet would meet appropriate disposal requirements including those stated in Section 23.11 of the Region 3 Forest Service Handbook (FSH) 2509.22 for Soil and Water Conservation.

The current footprint as designed and expanded by use would decrease as the Alternative C improvements are implemented. Approximately .92 acres (40,032 sq. ft.) would be dedicated under this Alternative. Approximately 1.93 acres (84,158 sq. ft.) would be rehabilitated by ripping in order to reduce compaction and ground cover would be seeded. The impacted sites adjacent to Cow Creek would be rehabilitated and returned to a productive state supporting vegetation and ground cover.

During and immediately following construction, there would be bare soil from the construction activities such as: equipment use, digging holes for footings, construction of driveways, parking places, table and tent sites. Stock piling of soil for fill and back fill would also occur. Reasonable and prudent measures described in the Forest Service Soil and Water Conservation Practices Handbook (SWCP, 2509.22) would be applied to the construction activities. Section 23.14 of the Soil and Water Conservation Handbook would preclude the stock piling of fill material where it could enter the stream and degrade water quality.

#### Alternative C -- Cumulative Effects

The size (scale) of the Cow Creek Recreation Area and amount (magnitude) of recreation activity occurring in this area is very small relative to the size of the watershed and the total of all land use activities occurring in the watershed. Therefore, when the impacts on water quality and riparian areas from reconstructing the campground and from future recreation use in the Project Area is considered with all past, present and reasonable foreseeable future actions, these impacts are not individually substantial nor would they contribute to a cumulatively substantial impact in the watershed.

## **Heritage Resources**

### **Existing Condition**

Data gathered from previous Section 106 compliance surveys associated with other projects including road construction, trail construction, timber sales, recreational improvement, and all ground disturbing activities has contributed to a more complete understanding of prehistoric use of the Upper Pecos River Valley. The results of archaeological compliance surveys previously conducted within the Project Area include:

Report #2000-10-35 Inventory Rio Grande Products – one historic (acequia) recorded and determined eligible for inclusion to the National Register under criterion “c”.

Report #2000-10-035B Rio Grande Forest Products – negative inventory, no sites recorded nor any sites to be impacted.

Report #2000-10-032G Viveash Fire Salvage – negative inventory, no sites recorded nor any sites to be impacted.

Kelly Road Easement – negative inventory, no sites recorded nor any sites to be impacted.

Archaeological evidence gathered from lands administered by the Santa Fe National Forest suggests that smaller groups of prehistoric people were utilizing the area for resource procurement activities. Limited occupation camps, small lithic scatters, and isolated artifacts have been identified in the Upper Pecos watershed.

According to information provided in an earlier Forest Environmental Impact Statement, a Paleo-Indian projectile point base was found at an Archaic site in the Pecos Wilderness. This artifact may be a curated item (Abel 1989). Isolated late Paleo-Indian projectile points have been found in association with surveys conducted at intermediate elevations, elsewhere on the forest. At least one Clovis point has been found at an elevation above 10,000 ft. (Cordell 1979). This data suggests infrequent Paleo-Indian hunting use of the northern New Mexico mountains between 11,500 and 8,000 years ago.

Two recorded heritage resource sites near the Project Area. A sparse historic can scatter site is located approximately 2/3 mile southeast and outside of the Project Area. A historic acequia is located immediately adjacent to the Project Area. The acequia (irrigation ditch) is a representation of late 19<sup>th</sup> century and early 20<sup>th</sup> century water diversion practices associated with agricultural activities. The site was recorded in association with the Rio Grande Products road easement. The site has been determined eligible for the National Register. The project would not impact the site.

There are no known prehistoric sites within the Project Area. There are no known sacred sites, traditional cultural properties, or traditional use areas within the Project Area and as of May 1, 2003 no Native American tribes have expressed concerns regarding the proposed action.

### **Environmental Consequences**

The primary concern is that the construction of campground facilities and parking areas, and increased visitor use could damage heritage resources within the Project Area. While addressing this concern, potential direct, indirect, and cumulative effects of campground development on heritage resources must be considered, and reasonable measures adopted to avoid or mitigate any effect or adverse effects to heritage resources during or as a result of campground facility improvement.

The primary direct effects associated with the campground development are:

Ground disturbing project related activities that could result in physical damage to an historic site (acequia).

In accordance with forest-wide guidelines and the New Mexico State Historic Preservation Office (SHPO), heritage resource sites would be avoided during project activities to prevent any direct effects to those resources.

Potential indirect effects of the campground and access improvement project are:

Because of improved facilities, an increase in visitor use could occur. With increased visitor use, comes a greater potential for impact to the historic site located within the Project Area.

Potential damage to heritage resources as a result of increased access can be minimized by educating the public about the importance of heritage resources and by monitoring activities in the Project Area. With continued protection emphasis, the planned campground development would not contribute significantly to any cumulative effects to heritage sites.

## Alternative Comparison

### Direct, Indirect, and Cumulative Effects of All Alternatives

#### No Action Alternative

The No Action Alternative would not provide protection of known and unknown heritage resource sites.

#### All Action Alternatives

In general, none of the proposed action alternatives pose a threat to heritage resources within the Project Area. None of the proposed action alternatives would result in any direct impacts to heritage resource sites, because the site would be avoided.

### Direct, Indirect, and Cumulative Effects of All Action Alternatives

Most of the Project Area is managed by the Forest Service for recreational use. In accordance with forest-wide guidelines inventory surveys have been completed prior to previous projects within and near the Project Area. Heritage resources documented during previous surveys have been assessed for fire damage. Vegetative cover on the landforms surrounding the Project Area was damaged or destroyed by the Viveash Fire and related fire suppression efforts. Heritage resources in the burn area may be impacted by increased erosion resulting from the lost vegetative cover.

Avoidance of heritage resource sites during the planned campground development project should prevent any further direct effects to heritage resources and adoption of other protective measures should minimize additional indirect effects. In assessing cumulative effects consideration must be given to the combined effects of past actions on heritage resources in the Project Area and to anticipated future actions. Based on this perspective the planned campground development project would not contribute to any cumulative adverse effects to heritage resource sites. Mitigation monitoring measures are expected to be effective in creating a low risk of damage to heritage resources.

## Wildlife and Fish

This section provides an overview of species that may occur in the Project Area based on species/habitat associations, habitat suitability and occurrence records. Selected emphasis is on federal threatened and endangered species and proposed species (TEPS); USFS sensitive species; state threatened and endangered species; and USFS management indicator species (MIS).

### Existing Condition

The Viveash Fire burned approximately 27,500 acres in the Cow Creek watershed. Field reconnaissance of the area showed that burn severity was high in 50% of the area, moderate in 10% of the area, and low/unburned in 40% of the area.

The Project Area is situated in the middle reaches of Cow Creek. In the burned areas, there are many dead snags but aspen regeneration dominates. In the unburned areas, vegetation

consists of ponderosa pine, mixed conifer, and riparian vegetation including willow, alder and sedges.

The Project Area is currently subject to relatively high levels of human disturbance. It is bisected by FDR 92 and the vegetation and streambank riparian areas have been highly impacted by over capacity camping and undesignated parking. Camping, hunting, fishing, hiking, off highway vehicle riding and other recreational activities, as well as the presence of pets accompanying recreationists or nearby residents discourage wildlife usage of the area. Due to the highly disturbed nature of the habitat and the high levels of human activity occurring here, the current level of wildlife usage and habitat suitability in the area is considered low. Only the most tolerant wildlife species such as—scrub jays, Stellar’s jays, juncos, mountain chickadees, robins, Cassin’s finches, house finches, woodpeckers, ravens, raccoons, coyotes, ground squirrels, chipmunks, and deer mice—are likely to use the area.

**Threatened and Endangered Species**

Table 3.1 displays the wildlife species listed as federally proposed, threatened, or endangered that may occur in the Cow Creek watershed and potentially occur in the Project Area. These species are protected pursuant to the Endangered Species Act (ESA) of 1973 as amended.

**Table 3-1. Threatened and Endangered Species and Proposed Species for Listing Potentially Occurring in the Project Area**

Common Name (Scientific Name)	Threatened or Endangered	Habitat Type	Occurrence in Cow Creek Watershed	Occurrence in the Project Area
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	T	Riparian	Unlikely based on habitat present	Unlikely based on habitat present
Southwestern willow fly catcher ( <i>Empidonax traillii extimus</i> )	E	Riparian	Outside known distribution/range	Outside known distribution/range
Mexican spotted owl ( <i>Strix occidentalis lucida</i> )	T	Mixed Conifer	Yes	Outside known distribution/range

Considering the existing habitat conditions, potentially suitable habitat in the Project Area, and consultation with the Pecos/Las Vegas District biologist, no TEPS wildlife species are known or likely to occur in the Project Area. While the Mexican spotted owl (MSO) is listed as known to occur in the Cow Creek watershed, a focused field survey in 2001 identified a single pair of MSO in the Lower Cow Creek Protected Activity Center (PAC). No other individuals were observed in the Cow Creek watershed. Suitable habitat does not exist in the Project Area. Detailed analysis of federally threatened or endangered species can be found in the Biological Assessment (BA) in the Project Record. Since none of these species are known to occur and have a low probability of occurring in the Project Area they were not considered in further detail in the effects analysis.

**Region 3 Sensitive Species**

The USFS Southwestern Region identifies and lists certain species as sensitive species for management purposes and legal requirements associated with them. The sensitive species list may include species that require special management considerations because of low or unknown population levels and/or the potential for their suitable habitat to be degraded. Table 3-2 lists sensitive species that are known to occur in the Santa Fe National Forest. Nine sensitive

species with potential occurrence in the Project Area were initially considered. Existing habitat conditions and wildlife species distribution preclude the potential occurrence of most of these species in the Project Area. Only the northern goshawk and the Rio Grande cutthroat trout (RGCT) are known to occur in the Cow Creek watershed. No suitable habitat for the northern goshawk exists in the Project Area. After the Viveash Fire, Cow Creek was sampled and 94 Rio Grande cutthroat trout were collected from the headwaters to prevent mortality due to ash and sediment plumes. The lower reaches of Cow Creek have traditionally been stocked and contained multiple trout species, including rainbow, brown and brook trout. Few, if any, of the fish in these lower reaches survived the fire and its after effects. In the spring of 2003 the New Mexico Department of Fish and Game (NMDFG) resumed stocking rainbow trout within the Project Area.

**Table 3-2. USFS (Southwestern Region) Sensitive Wildlife Species Potentially Occurring in Santa Fe National Forest**

Common Name (Scientific Name)	Potential for occurrence in the Project Area
American peregrine falcon ( <i>Falco peregrinus anatum</i> )	Unlikely based on habitat present
Northern goshawk ( <i>Accipter gentilis</i> )	Unlikely based on habitat present
Black-tailed prairie dog ( <i>Cynomys ludovicianus</i> )	Outside known distribution/range
Swift fox ( <i>Vulpes velox</i> )	Outside known distribution/range
Goat peak pika ( <i>Ochotona princeps nigrescens</i> )	Unlikely (endemic to Jemez Mountains)
New Mexican (meadow) jumping mouse ( <i>Zapus hudsonicus luteus</i> )	Unlikely based on habitat present
Jemez Mountains salamander ( <i>Plethedon neomexicanus</i> )	Unlikely (endemic to Jemez Mountains)
Rio Grande cutthroat trout ( <i>Oncorhynchus clarki virginalis</i> )	Unlikely (See discussion)
Nokomis fritillary (Blue-black silverspot butterfly) ( <i>Speyeria nokomis nokomis</i> )	Unlikely (No documented occurrences in Project Area)

Source: Southwestern Region USFS Sensitive Species List, 21 July 1999, as corrected 23 February 2000.

Detailed descriptions of species distribution, habitat associations, discussions of species considered, and potential impacts of the project-related actions can be found in the BA and Biological Evaluation (BE) in the Project Record. Since none of these species are known to occur and have a low probability of occurring in the Project Area they were not considered in further detail in the effects analysis.

**Management Indicator Species**

In the USFS-based MIS approach, certain assemblages of wildlife have been identified and selected as management indicators. These wildlife assemblages were chosen primarily because they represent the vegetation types, seral stages, and special habitat elements necessary to provide for all forest wildlife species in the national forests, and the projected changes to habitat and thus populations is believed to indicate or represent the effects of management activities on other wildlife populations.

Table 3-3 lists the USFS MIS for the Santa Fe National Forest. It identifies the species-habitat relationships and whether or not the species or habitat is present within the Project Area. The Mexican spotted owl (federally listed threatened species) and Rio Grande cutthroat trout (USFS sensitive species) are discussed in the Threatened and Endangered Species section and the Region 3 Sensitive Species section, respectively. Of the remaining MIS, Merriam's turkey, hairy woodpecker, mourning dove, and elk may occur or have potentially suitable habitat in the Project Area.

**Table 3-3. Santa Fe National Forest Management Indicator Species Occurring in the Project Area**

<b>Common Name ( Scientific Name)</b>	<b>Species-Habitat Associations</b>	<b>Occurrence in Project Area</b>
Merriam's turkey ( <i>Meleagris gallopavo Merriami</i> )	Ponderosa pine, mixed-conifer, aspen, pinon, and riparian areas in mountainous habitats	Potentially suitable habitat
Mourning dove ( <i>Zenaida macroura</i> )	Open forest habitats and edges, and avoids dense forests	Potentially suitable habitat
Mexican spotted owl ( <i>Strix occidentalis lucida</i> )	Mixed-conifer forest	See Threatened and Endangered Species section
Hairy woodpecker ( <i>Picoides villosus</i> )	Low elevation riparian habitat in desert grasslands up into spruce-fir forest	Likely based on habitat and nearby occurrence
Pinon jay ( <i>Gymnorhinus cyanocephalus</i> )	Pinon-juniper, sagebrush, and low elevation Ponderosa pine forest	Unlikely (No pinon-juniper habitat present in the Project Area)
Rocky Mountain bighorn sheep ( <i>Ovis canadensis canadensis</i> )	Rugged cliffs and crags, or rocky areas near grass and browse plant feeding sites	Unlikely Outside of established range
Rocky Mountain Elk ( <i>Cervus elaphus nelsoni</i> )	Mountain meadow and coniferous forests	Potentially suitable habitat
Rio Grande cutthroat trout ( <i>Oncorhynchus clarki virginalis</i> )	Clear, cold water streams and lakes	See Region 3.Sensitive Species section

Source: Forest-wide MIS Assessment Report 2002.

#### Merriam's Turkey

Merriam's Turkey occur in the Cow Creek watershed and Table 3.3 lists the Project Area as potentially containing suitable habitat.

#### Mourning Dove

Mourning dove nesting populations are stable or decreasing based on Breeding Bird Surveys in New Mexico. This species breeds throughout New Mexico and can be found year round in the southern counties. The dove population in the Sante Fe National Forest is ranked as common. The Viveash Fire converted some forested habitat types to grassland types preferred by the morning dove. The dove prefers the lower elevation grasslands. The Project Area is not a preferred habitat for the dove, but the riparian zone may be utilized for water and roosting.

#### Hairy Woodpecker

The hairy woodpecker is an indicator species for the presence of snags and down logs (USDA 1986). Hairy woodpeckers are year-round residents of nearly all forest types from central Canada to the southern United States (Scott et al. 1977). This species is one of the most common woodpeckers in the Southwest, particularly in riparian habitats, ponderosa pine, mixed conifer, and spruce-fir forests (Hubbard 1978). The hairy woodpecker is a forest generalist, keying in on dead and diseased trees and live aspen. Hairy woodpeckers are cavity nesters. Nests are primarily in trees averaging 17 inch DBH and approximately 60 feet high. Both sexes excavate a cavity in live wood and both parents incubate the 3 to 6 eggs. Eggs hatch in about two weeks, and young birds leave the cavity 30 days later. Parental care continues several weeks beyond fledging (Ehrlich et al 1988). House sparrows and starlings often steal nest cavities. The hairy woodpeckers' diet is primarily (80%) insects, mostly wood boring beetles removed from dead and diseased trees. They also consume acorns, hazelnuts, and beechnuts in the winter (DeGraaf et al. 1991).

The hairy woodpecker population is ranked as abundant in the Santa Fe National Forest, which contains over 900,000 acres of hairy woodpecker habitat. The Viveash Fire created thousands of acres of additional potential habitat.

### Rocky Mountain Elk

Because elk have had a historically wide distribution, their preferred habitat also varies widely (Skovlin 1982). Populations in the West tend to inhabit coniferous forests associated with rugged, broken terrain or foothill ranges. During summer, elk often seek shaded, cool habitats and forage in high mountain meadows, sub-alpine zones or riparian areas (Adams 1982). Studies of elk preferences indicate that elk use a variety of slopes, although they choose slopes in the 15 to 30 percent class most frequently (Skovlin 1982).

Elk need cover for protection against heat and extreme cold, as well as hiding and calving cover. Ideal cover is grassland or meadows interspersed with forests that have large amounts of edge (Skovlin 1982). Elk use of open areas tends to decrease at 330 feet (100 m) from cover. Calving cover requirements vary from place to place and within populations. Security or hiding cover is necessary in places of human disturbance (Skovlin 1982). Depending upon forage conditions elk can remain a year-round resident or may exhibit migratory habits, migrating as far as 30 to 40 miles (Boyd 1978). Snow depth and coverage are reported to be the two largest factors determining elk migration from summer range (Adams 1982).

Elk populations in the Santa Fe National Forest are stable to increasing. The elk population in the forest is ranked as common among breeding females. Elk appear to utilize the Cow Creek watershed area year round.

Detailed descriptions of MIS species distribution, habitat associations, discussions of species considered, and potential impacts of the project-related actions can be found in the BA and BE in the Project Record.

### Migratory Birds

Migratory birds have often been referred to as neo-tropical birds. These are birds that breed north of and winter south of the Tropic of Cancer. Table 3.4 lists migratory birds identified by New Mexico Partners in Flight (PIF) as Highest Priority Species of Concern that are protected under the Migratory Bird Treaty Act, as amended, that may occur in the Project Area. These species have known or suspected declining population trends, limited geographical ranges and deteriorating habitats. Partners in Flight have identified high priority species by physiographic areas and broad habitat types. The species listed below are located within ponderosa pine and

mixed conifer cover-types within the Southern Rocky Mountains (physiographic area 62). This information is available from the PIF web site at [www.partnersinflight.org](http://www.partnersinflight.org).

**Table 3-4. Migratory Birds Identified by New Mexico Partners in Flight as Highest Priority Species of Concern Potentially Occurring in the Project Area**

Common Name ( Scientific Name)	Species-Habitat Associations
Northern goshawk ( Accipter gentilis)	See Region 3 Sensitive Species section.
Mexican spotted owl (Strix occidentalis lucida)	See Threatened and Endangered Species section.
Flammulated owl (Otus flammeolus)	Open-canopy ponderosa pine and oak forests; secondary cavity nester; highly insectivorous and highly migratory in United States.
Olive-sided flycatcher (Contopus borealis)	Summer migrant; riparian areas, spruce-fir, ponderosa pine, aspen; uses forest openings and edges. Known to use recently burned forests.
Dusky flycatcher (Empidonax oberholseri)	Summer migrant; uses low to medium density forests with shrubby understory; shrubs critical habitat component; uses early successional habitat following disturbance.
Williamson’s Sapsucker (Sphyrapicus thyroideus)	Coniferous forests, especially ponderosa pine; aspen is important nesting substrate; live conifers preferred over snags.
Virginia’s Warbler (Vermivora virginiae)	Summer migrant; riparian woodlands, ponderosa pine, oak, pinon-juniper; dense understory is critical habitat component; scrubby hillsides a special requirement; nests in understory species, especially gamble oak brushlands, canyons and ravines; dense understory is critical habitat component.
Grace’s Warbler (Dendroica graciae)	Summer migrant; mature ponderosa pine obligate in New Mexico; montane pine-oak forests above 6,000 ft; feeds in upper portions of robust pines; nests 20-60 ft above ground; removal of trees 40-70 ft detrimental.

Two of the high priority species have been addressed in previous sections; the Mexican Spotted Owl in the Threatened and Endangered Species section and the Northern Goshawk in the Region 3 Sensitive Species section. The preferred habitat of the Virginia’s Warbler does not exist in the Project Area and this species will not be addressed in the effects analysis. Preferred habitat for the remaining high priority species does exist in the Project Area and they will be addressed in the effects analysis.

### Environmental Consequences:

This section describes the environmental effects of the alternatives on wildlife and fish. Applicable forest-wide and management area directions outlined in the Forest Plan were reviewed to determine conformance of alternatives to established goals, standards, and guidelines for management of national forest land.

### Regulatory and Other Direction

Current management direction on desired conditions for selected wildlife on national forest lands are included in the National Forest Management Act of 1976 (NFMA), Endangered Species Act (ESA), Migratory Bird Treaty Act (MTBA), Forest Service Manual (FSM), Forest Plan (USDA Forest Service 1987), species specific recovery plans, species management plans or conservation strategies, and the Regional Forester’s policy and management directions.

## Evaluation Criteria

The evaluation of effects uses a qualitative approach. Topics of concern identified that are based on management direction for national forest land include the protection of threatened, endangered, sensitive, and/or MIS and associated suitable habitat. Suitable habitat for these species and the way it is affected by the alternatives would be used as the qualitative evaluation criteria.

## Threatened, Endangered, Sensitive, and Management Indicator Species

### Direct, Indirect and Cumulative Effects

This EA provides an evaluation of effects on threatened, endangered, sensitive, and/or MIS for the implementation of the alternatives. Effects criteria for the selected wildlife species include the following:

Are any threatened, endangered, or proposed species present in the Project Area?

Are the alternatives likely to cause a trend toward federal listing of the USFS's sensitive species due to a critical decline in existing populations of sensitive species?

Do any of the alternatives adversely affect migratory bird species or the USFS's management indicator species?

Detailed analysis of federally threatened or endangered species, the USFS's sensitive species, Migratory Birds, and Management Indicator Species can be found in the BA/BE/Wildlife Specialist Report in the Project Record. This EA presents a summary of information found in that document.

## Alternative Comparison

A preliminary screening of wildlife species was conducted in previous sections to identify species to include in the effects analysis. Wildlife species that are known or likely to occur in the Project Area were considered in further detail and addressed in this effects analysis. Other species that were determined to have low probability of occurrence in the Project Area were not considered further. No species listed as threatened or endangered were determined to occur or potentially occur in the Project Area. Similarly, no USFS Region 3 Sensitive species were determined to occur or potentially occur in the Project Area. Four Management Indicator Species—merriam's turkey, mourning dove, hairy woodpecker, and rocky mountain elk-- were determined to occur or potentially occur in the Project Area. Five migratory birds listed as "Highest Priority" by the New Mexico PIF, were determined to occur or potentially occur in the Project Area. These are: the flammulated owl, grace's warbler, williamson's sapsucker, olive-sided flycatcher and dusky flycatcher.

## Management Indicator Species

### **Alternative A – No Action**

#### Direct, Indirect, and Cumulative Effects

No adverse effects would occur to populations or habitat for the following MIS species: merriam's turkey, mourning dove, hairy woodpecker, and rocky mountain elk. Habitat for these species would be unaltered. The amount and quality of habitat for these species would not change from current conditions

## Alternatives B, C

### Direct, Indirect, and Cumulative Effects

Effects to Merriam's turkey, mourning dove, hairy woodpecker and rocky mountain elk under both action alternatives are analyzed together in this section. These species would be subject to disturbance and/or displacement for the short duration during which construction and rehabilitation activities would be implemented. Currently, the Project Area is highly impacted by human uses including road traffic, camping, fishing, hiking and OHV use. Elk tend to avoid areas of human activity and roadways. The action alternatives would not alter the current uses and would not affect critical elk habitat.

The Project Area is not a preferred habitat for the mourning dove, but the riparian zone may be utilized for water and roosting. Although individual birds might be temporarily displaced by the short-duration noise and visual disturbance, neither action alternative would influence the overall population status, viability or trend of this species. Merriam's turkey were present before the Viveash Fire and may be temporarily displaced during the campground construction phase, but should return after the construction is completed. The hairy woodpecker is already an abundant species in the Santa Fe National Forest. Effects of the action alternatives on this species would be similar to those for the mourning dove, with no adverse or long term impacts expected. Given the minimal, short-duration nature of direct or indirect effects expected, even when adding normal levels of disturbance from other management activities, rehabilitation activities, recreational activities, and private land uses in the area cumulative effects on the turkey, elk, dove and woodpecker would be expected to be minimal. Refer to Santa Fe National Forest's Assessment of MIS (USDA Forest Service 2002) for detailed descriptions of monitoring results, habitat, population viability and trends for the elk, dove and woodpecker, and turkey.

## Migratory Birds

### All Alternatives

The Project Area is not on the nationwide list of Important Bird Areas. It is not considered an important overwintering area, because large concentrations of birds do not occur here, nor do unique or a high diversity of birds winter here. For short periods, the construction and rehabilitation management activities in the action alternatives could disturb the five migratory bird species during operations. However, the noise and visual disturbance associated with these activities would not be expected to have long-term effects on these bird species. They would avoid the areas of disturbance temporarily and, then return to these areas or move to other areas. Under all of the alternatives disturbance from human activities such as camping, fishing, hiking and OHV use could affect individual migratory birds through visual and audio means. However, this localized effect would not be expected to result in declines in overall species populations.

## General Wildlife Effects

### Alternative A – No Action

Under this alternative current conditions would prevail, with low habitat quality and high levels of human disturbance contributing to low wildlife use by only the most tolerant wildlife species.

### Alternative B – Proposed Action

Because the surrounding area is already highly impacted by human activity and wildlife use is limited to tolerant species, the proposed action would have negligible impacts. Under this

alternative, up to .9 acres of regenerating aspen habitat would be lost in proposed Group Camping Area 3, while up to 1.9 acres of previously impacted riparian zone habitat would be rehabilitated. The gain in riparian habitat through revegetation, although small, would contribute to the connectivity of the waterway for animal movements and stream integrity.

#### Alternative C –Reduced Capacity, Day Use Emphasis

The impacts of this alternative would be similar to Alternative B, except that only up to .35 acres of regenerating aspen habitat would be lost in proposed Group Camping Area 3.

Management activities associated with Alternatives B and C, could cause temporary displacement or disturbance to individual animals, but would result in improved habitat conditions in streamside and riparian zones.

## Sensitive Plants

This section utilizes information presented in the Viveash Salvage EIS as well as that of other sources listed in section in the References section. Each species of concern was assessed for potential or known habitat within the Project Area. Species listed in the Region 3 -sensitive species list (1999) were reviewed as well as the State of New Mexico list from the New Mexico Rare Plant Technical Council. (1999). Each plant was assessed to determine the likelihood of it occurring within the Project Area by either the presence of known populations or distance to a known population and the likelihood of it's occurrence within the Project area. Where no known populations exist on the district, plants were assessed by comparing the habitat requirements of the plant to the habitat in the Project Area.

### Existing Condition

#### Species Considered

Eight plant species of special status were assessed. These species were chosen because they are; known to occur, or have potential habitat within the Pecos/Las Vegas Ranger District or San Miguel County. These include species listed by the USFWS, USFS, or the New Mexico State Forestry Division. Five of the eight are not likely to occur within the Project area. They are listed below but will not be discussed in the environmental consequences section. The remaining three plant species, although their presence within the Project Area has not been documented, have a reasonable likelihood of occurring. These three species will be discussed in the environmental consequences section.

**Table 3.4 Special Status Plant Species**

<b>Common Name (Scientific Name)</b>	<b>Status</b>
Pecos fleabane ( <i>Erigeron subglaber</i> )	Forest Service Sensitive
Spiny aster ( <i>Eurybia horrida</i> )	Forest Service Sensitive
Holy Ghost ipomopsis ( <i>Ipomopsis sancti-spiritus</i> )	Federal Endangered
Arizona willow ( <i>Salix arizonica</i> )	Forest Service Sensitive
Weatherby's spike moss ( <i>Selaginella weatherbiana</i> )	Forest Service Sensitive
Golden lady's slipper ( <i>Cypripedium pubescens</i> )	State Endangered
Chiricahua dock ( <i>Rumex orthoneurus</i> )	Forest Service Sensitive
Wood lily ( <i>Lilium philadelphicum</i> var. <i>andinum</i> )	Forest Service Sensitive*

\* Currently under review for re-inclusion into the USFS Sensitive Species List.

### Species not expected to occur within the Project Area

#### *Pecos Fleabane (Erigeron subglaber)*

The Pecos fleabane is a small perennial herb found in rocky, open meadows in sub-alpine coniferous forest from 10,000 to 11,500 ft in elevation. This narrow endemic occurs sporadically on high ridges and peaks along the Sangre de Cristo Mountain chain (New Mexico Rare Plant Technical Council 1999). Pecos fleabane has been documented on top of Elk Mountain near the radio towers at the north end of the Viveash Fire area. It is also found on the ridge that extends north of the radio towers. The Elk Mountain populations represent the currently identified southern end of the species range. The Project Area is much lower in elevation than that in which the species is typically found. Consequently, this species is not expected within the Project Area.

#### *Spiny aster (Eurybia horrida)*

Although the spiny aster has great ecological range (occurring on dry, south-facing slopes in high mountains to shaded, north-facing slopes at low elevations), its distribution appears to follow the drainage of the Canadian River. The Project Area is outside the range of this species.

#### *Holy Ghost Ipomopsis (Ipomopsis sancti-spiritus)*

The Holy Ghost ipomopsis is a biennial to short-lived perennial reaching 12 to 32 inches in height and grows on dry, steep, west- to southwest-facing slopes in open ponderosa pine or mixed-conifer forest from 7,730 to 8,220 ft in elevation (New Mexico Rare Plant Technical Council 1999). To date the plant is found in only one location of the Holy Ghost Canyon, where it

grows on Terrero limestone. While Holy Ghost Canyon is nearly 12 miles northwest of the Project Area, some potential habitat (same geology, elevation and aspect) is nearby (less than 3 miles) in Torito. It should be noted that there have been extensive surveys for this species throughout much of the area and it has never been found outside of Holy Ghost Canyon. The general consensus is that it probably only occurs in Holy Ghost Canyon.

*Arizona willow (Salix arizonica)*

The Arizona Willow is a woody shrub forming a prostrate mat, large hedge, or thicket from a foot to over 10 feet in height. It grows on sedge meadows and wet drainage ways of subalpine coniferous forest. This species is known to occur in the higher elevations (10,000-11,200 ft) of the Sangre de Cristo Mountains. The Project Area is much lower in elevation than that in which the species is typically found. Consequently, this species is not expected within the Project Area.

*Weatherby's Spike Moss (Selaginella weatherbiana)*

Weatherby's spike moss is a low-growing mat-type perennial that rarely exceeds 6 inches in height. It grows on exposed or shaded granitic/igneous rock outcrops, cliffs, or rock crevices. It has been reported at 8,000 ft in elevation. In New Mexico, it has been observed in Colfax, San Miguel, and Santa Fe counties. Based on its known distribution and habitat requirements, this species is not likely to exist within the Project Area.

### **Species that may occur within the Project Area**

*Golden Lady's Slipper (Cypripedium parviflorum var pubescens)*

The Golden lady's slipper is a perennial herbaceous species found in bogs, meadows, and damp woods in mid- to upper-montane coniferous forests from 8,000 to 11,000 ft in elevation. It has been documented to be locally common in the Upper Pecos Watershed west of the Project Area and the Gallinas River Watershed to the east. Although there are no documented records of this species in Cow Creek, potential habitat does exist within and nearby the Project Area. The Viveash wildfire would have reduced much of the potential habitat in and adjacent to the Project Area. But it may still occur in pockets of habitat that survived the fire.

*Wood Lily (Lilium philadelphicum var. andinum)*

This perennial herbaceous species is often found in shaded areas in open groves of trees on north-facing slopes. It has been found in both Dalton Canyon and Holy Ghost Canyon 5-10 miles west of the Project Area. The species inhabits the lower and mid-elevation mixed-conifer woodland habitats and has the potential to occur within the Project Area. The Viveash Fire removed much of the habitat adjacent to the Project Area. However, this species could still occur in other isolated pockets of unburned woodland that meets the habitat requirements of this species.

*Chiricahua dock (Rumex orthoneurus)*

The Chiricahua dock occurs in moist loamy soils within riparian and wetland habitats in cienegas, springs, and streams between 6,500 and 11,000 ft in elevation. It is most frequently found in shaded conditions surrounded by mixed-conifer forest, but can also occur in open meadows or along streams with open canopies. In 1999, USFWS withdrew the proposal to list this species as threatened based on its widespread range and lack of sufficient threats to warrant listing (Federal Register 1999). This species has also been removed from consideration for protection status by the state of New Mexico. Based on the current knowledge of this species, it is known to occur in the Santa Fe, Lincoln, Gila, and Carson National Forests in New Mexico. It has been

identified in the Pecos Wilderness of the Santa Fe National Forest, and very likely occurs within the wetland and riparian areas within Cow Creek

## **Environmental Consequences**

### **Direct and Indirect Effects**

All three species (the Lady's Slipper, Wood Lily and Dock) are subject to damage by recreation use. It is unlikely that any populations of any of these plants would exist in the currently disturbed areas. Under the No Action, camping within the Project Area would continue to occur. Both the Lady's slipper and the wood lily have showy flowers and are subject to effects by collection. This effect would not be substantially different between this alternative and the Action Alternatives.

All three species tend to be found in the wetter areas of the riparian and upland woodlands. The No Action alternative does not create designated sites so there is the possibility that campers could expand into these areas during an extremely dry year and thus affect a plant population. Even if this does occur, there is little likelihood that this would lead to an overall population decline of any of these three species.

### **Cumulative Effects**

The Viveash Fire has had a localized impact on these plants. The FDR 92 realignment, and the bridgework also has the potential to effect small populations of these species. These effects, when combined with the predicted effects of the No Action alternative would create some additive effects to these species. However, even these combined effects would not lead to an overall population decline.

## **Alternative B -- Proposed Action**

### **Direct and Indirect Effects**

The Proposed Action would create designated camping areas in the Project Area. It is unlikely that the construction of these sites would have much of an effect on these plants because either the construction would occur in existing disturbed areas or the new sites would be in drier locations which is not suitable habitat.

Plant losses due to collection of the Lady's Slipper and the Lily could result in the loss of a few individual plants near the new sites.

Closing and rehabilitating the old sites in the riparian zone would create some new potential habitat for these plants. The prohibition of camping outside of the designated sites would reduce the possibility that campers would impact local populations during an extremely dry year (as described under the No Action effects).

### **Cumulative Effects**

The cumulative effects are nearly the same as that of the No Action. The direct and indirect effects are slightly smaller, therefore the cumulative effects to the plant species would be even lower than those discussed under the No Action Alternative.

**Alternative C, Reduced Capacity, Day Use Emphasis**

Direct and Indirect Effects

This Alternative would also create designated camping areas in the Project Area. As with the Proposed Action, it is unlikely that the construction of these sites would have much of an effect on these plants.

Plant losses due to collection of the Lady’s Slipper and the Lily could result in the loss of a few individual plants near the new sites. This effect would be slightly less than that of the Proposed Action due to the overall reduced capacity of the area.

The effects of closing and rehabilitating the old sites in the riparian zone as well as the prohibition of camping outside of the designated sites are the same as the Proposed Action.

Cumulative Effects

The cumulative effects are nearly the same as those of the Proposed Action. The direct and indirect effects are even smaller than those of the Proposed Action, therefore the cumulative effects to sensitive plant species would be the lowest if this alternative were implemented.

**Environmental Justice**

**Existing Condition**

The primary users of the Cow Creek campground are local residents from the towns of Pecos, Glorieta and Rowe. The following table below provides socioeconomic information from the 2000 U.S. Census for the towns of Pecos and Glorieta and for the state of New Mexico . No socioeconomic data was available for the town of Rowe.

**Table 3.5 Local Socioeconomic Information**

<b>Statistic</b>	<b>Glorieta</b>	<b>Pecos</b>	<b>State of New Mexico</b>
2000 population	859	1,441	1,819,046
Percent Hispanic or Latino	56%	80%	42%
Per capita income	\$19,564	\$13,306	\$17,261
Civilian Unemployment rate	7.1%	5%	7.3%
Percent of individuals below the poverty rate	16.4%	15.9%	18.4%

Source: U.S. Department of Commerce, Bureau of the Census 2002.

The populations of Glorieta and Pecos each have a higher percentage of minorities (Hispanics or Latinos) when compared to the state of New Mexico. Glorieta has a higher per capita income, while Pecos has a lower per capita income than the state. Both towns had lower civilian unemployment rates and lower poverty rates than the state average.

## Environmental Consequences

Concerns over the issues of environmental protection, democracy and social justice led to Executive Order 12898 which formalized the notion of environmental justice. This order requires federal agencies to analyze the environmental effects, including human health, economic and social effects of their actions on minority and low-income communities, addressing instances where the effects on these communities may be disproportionately high and adverse.

The two towns for which socioeconomic data was available, Glorieta and Pecos, had larger percentages of ethnic minority populations (Hispanics or Latinos) than exist in the state at large. None of the alternatives considered would result in disproportionately high or adverse effects on the Hispanic or Latino communities in these towns. Additionally, there are no predicted disproportionately high or adverse effects on low-income communities associated with any of the alternatives.

## Forest Plan Consistency

As disclosed in Chapter 2, this EA is tiered to the Final Environmental Impact Statement for the Santa Fe National Forest Land and Resource Management Plan (Forest Plan). It documents the analysis in the second level of planning.

In the Forest Plan, National Forest land within the Santa Fe National Forest has been divided into Management Areas that differ from each other in resource emphasis. The Management Area that falls within the Cow Creek Recreation Area was fully discussed in the Chapter 2 of this EA.

Disclosures within this EA and project file resource reports clearly display that implementation of the Proposed Action, or action alternatives to the Proposed Action, and mitigation measures, would be consistent with the Forest Plan standards and guidelines, goals and objectives, and desired future conditions. Implementation of Alternative 1 – No Action is not consistent with the Forest Plan standards and guidelines.

## National Forest Management Act Findings

Compliance with the National Forest Management Act (NFMA) is clearly displayed in resource discussions found within this EA. A detailed discussion of NFMA compliance points, as outlined in the Code of Federal Regulations (CFR) 36 CFR 219.27(a) through 219.27(g) can be found within each resource report found in the project file. NFMA compliance items covered under 36 CFR 219.27(a) "Resource Protection", 36 CFR 219.27(e) "Riparian Areas", and 36 CFR 219.27(g) "Diversity", are described below.

### Resource Protection

**219.27 (a)(1):** "Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land."

Chapter 3 evaluates the effects of each of the action alternatives on soil and water resources. None of the action alternatives would allow significant or permanent impairment of the land.

**219.27 (a)(2):** "...minimize serious or long-lasting hazards from flood, wind, wildfire, erosion, or other natural physical forces..."

Resource rehabilitation and protection activities, along with mitigation measures found in all action alternatives are designed to minimize hazards from flood, wildfire, and erosion. Specific activities include vegetation management, riparian habitat restoration, and removal of recreation facilities in flood zones and riparian areas. The potential effects of these actions are displayed in Chapter 3.

**219.27 (a)(4):** “Protect streams, stream banks, shorelines, lakes, wetlands, and other bodies of water...”

Riparian area rehabilitation activities, including relocation of streamside recreation facilities, are designed to protect soil and water resources. In addition, SWCPs implemented during project implementation are designed to minimize impacts to soil and water resources. The potential effects of these actions are displayed in the Soil and Water section of Chapter 3.

**219.27 (a)(5):** “Provide for and maintain diversity of plant and animal communities to meet overall multiple-use objectives...”

Maintaining the diversity of plant and animal communities within the Cow Creek Recreation Area is an objective of this project. The descriptions of alternatives display how this would be done and the Scenic Resources and Wildlife and Fish sections within Chapter 3 display the effects of the actions.

**219.27 (a)(6):** “Provide for adequate fish and wildlife habitat to maintain viable populations of existing native vertebrate species...”

Riparian area rehabilitation activities are designed to maintain or improve fish habitat. Objectives of vegetation management activities and recreation facility redesign include improving wildlife habitat. Effects of all the proposed activities on fish and wildlife habitat can be found in the Wildlife and Fish section of Chapter 3.

**219.27 (a)(10):** “Ensure that any roads constructed through contracts, permits, or leases are designed according to standards appropriate to the planned uses...”

Roads constructed for access to and throughout recreation facilities would be built to Forest Service and AASHTO design standards. The road design would reflect the level of service required by the recreation design and would accommodate emergency vehicles.

**219.27 (a)(12):** “Be consistent with maintaining air quality at a level that is adequate for the protection and use of National Forest System resources and that meets or exceeds applicable Federal, State and/or local standards or regulations.”

### **Riparian Areas**

**219.27 (e):** “Special attention shall be given to land and vegetation for approximately 100’ from the edges of all perennial streams, lakes, and other bodies of water....”

Riparian area rehabilitation activities, including relocation of streamside recreation facilities, are designed to improve the riparian habitat for obligate wildlife and plant species. In addition, SWCPs implemented during recreation project implementation are designed to minimize impacts to riparian resources. The potential effects of these actions in the riparian zones are displayed in the Soils and Watershed section of Chapter 3.

## **Diversity**

**219.27 (g):** "Management prescriptions...shall preserve and enhance the diversity of plant and animal communities..."

The Scenic Resources and Wildlife and Fish sections within Chapter 3 display the effects of the action alternatives on plant and animal communities. The proposed activities would not reduce the diversity of plant and animal communities in Cow Creek Recreation Area.

## CHAPTER 4 • 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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