

United States
Department of
Agriculture



Forest
Service

**Southwestern
Region**



Environmental Assessment for the Cerro del Pino Pumice Mine

**Jemez Ranger District,
Santa Fe National Forest
Sandoval County, New Mexico**

Township 18 North, Range 3 East, Section 27, SW¹/₄SW¹/₄

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Summary

The Santa Fe National Forest proposes to authorize, through a Mineral Material Sale Contract, a new 5.7-acre pumice mine project. The project area is located next to Forest Road 10 (FR 10) on the lower slopes of Cerro del Pino, approximately eight miles north of Ponderosa, within the Jemez Ranger District, Santa Fe National Forest, New Mexico. This action is needed because Utility Block Co., Inc. (Utility Block) has depleted their current mine and has submitted a plan of operations to open a new 5.7-acre mine based on their successful bid for pumice deposit removal by contract in June 2004.

This environmental assessment includes analysis of three alternatives:

- *No Action – do not authorize the pumice mine*
- *Proposed Action – authorize the pumice mine with permission to haul six truckloads of pumice per day (current management)*
- *Reduced Traffic Alternative - Authorize the pumice mine with permission to haul four truckloads of pumice per day*

Based upon the effects of the alternatives disclosed in this document, the responsible official will decide whether or not to authorize the pumice mining. If mining is authorized, the number of loads which may be hauled per day and other mining and reclamation requirements or design criteria will be specified.

During the scoping process, traffic related to the mine and its impacts on safety was identified as the major concern. Water quality impacts and cumulative impacts on local traffic from the mine were also identified as concerns.

Chapter 1 – Purpose and Need

Document Structure

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

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

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record (project record) located at the Jemez Ranger District Office in Jemez Springs, NM.

Background

Utility Block, a company which makes pre-cast lightweight aggregate concrete products in Albuquerque, has been mining pumice on the Santa Fe National Forest since the 1940s. During this period they have mined in numerous locations on the Forest; and according to numerous scoping comments received from this proposal and Forest Service compliance records, they have always been considered a good operator with regards to compliance and relations with nearby communities.

In September of 2003, they recognized their current ten-acre mine would be

depleted in a few years, and submitted an application to the Jemez Ranger District to explore test pits on the southwest flank of Cerro del Pino. A Categorical Exclusion was prepared for the exploration of three test pits in the mine site in 2002. The test pits were approved, and Utility Block determined that there was a deposit of pumice suitable for their use at the site. They then submitted a request to purchase a contract for the pumice material.

Based on Forest Service regulations, the Jemez Ranger District offered the pumice at the site at a competitive sale in May 2004. Utility Block submitted the successful bid, and was awarded the contract in June 2004.

Based on scoping, it was determined that the proposed 5.7-acre pumice mine and temporary access road would be analyzed in accordance with NEPA through an Environmental Assessment. The currently proposed mining project would exceed the actions authorized in the 2002 test pit Categorical Exclusion NEPA analysis. Analysis for the currently proposed alternatives will focus on impacts from mining and an access road on the entire 6.2-acre site and will include analysis or traffic impacts in surrounding areas.

Purpose and Need for Action

Utility Block Company, Inc. submitted a plan of operation to the Jemez Ranger District in accordance with 36 CFR 228 subpart C. This section of the Code of Federal Regulations requires that the Forest Service evaluate the submitted plan in a manner meeting requirements of the National Environmental Policy Act (NEPA). This Environmental Assessment is needed to disclose expected impacts of analyzed alternatives for the 5.7-acre mine site and temporary access road in accordance with NEPA and mining regulations as described in 36 CFR 228.

The proposed action is an extension of previous pumice deposit exploration of the site. The purpose of this analysis is to provide the basis for the Forest Service to make a decision which approves and/or requires modification of the proposed operating plan.

Proposed Action

The action proposed by the Forest Service to meet the purpose and need is to authorize the contract for the sale of pumice, which would be mined from the Cerro del Pino site in accordance with the operating plan submitted by Utility Block (see project record). Authorization of the operating plan submitted by Utility Block would be supplemented with the reclamation plan developed by Utility Block and the Santa Fe National Forest, and would include any additional stipulations needed to meet State and Federal regulations. Utility Block will be required to obtain a road use permit (36 CFR 251.50) prior to hauling on any Forest System Road.

The operating plan calls for pumice mining activities to occur on a maximum of 5.7 acres over six years (five years plus a possible one year extension). No more

than three acres would be stripped of ground cover for mining at any time. The only structures on site would be the crib to load the lower end of the conveyor with pumice material, the conveyor, and a self-contained portable toilet. There would be no permanent structures built.

Activities would include construction of approximately 1,200-foot (0.23 miles; 30 feet wide and 400 linear feet) mine access road from FR 10, which would include the installation of a culvert to facilitate drainage on the east side of FR 10. Once the access road is completed, clearing and stockpiling the timber will occur on-site for use during reclamation, or for sale by the Forest Service. Following the vegetation removal, the soil would be stripped and stockpiled as a berm around the edge of the mine site. After the pumice deposit is exposed, it would be mined using a bulldozer. Reclamation of previously mined 'blocks' would occur concurrently with the clearing and mining of new 'blocks'.

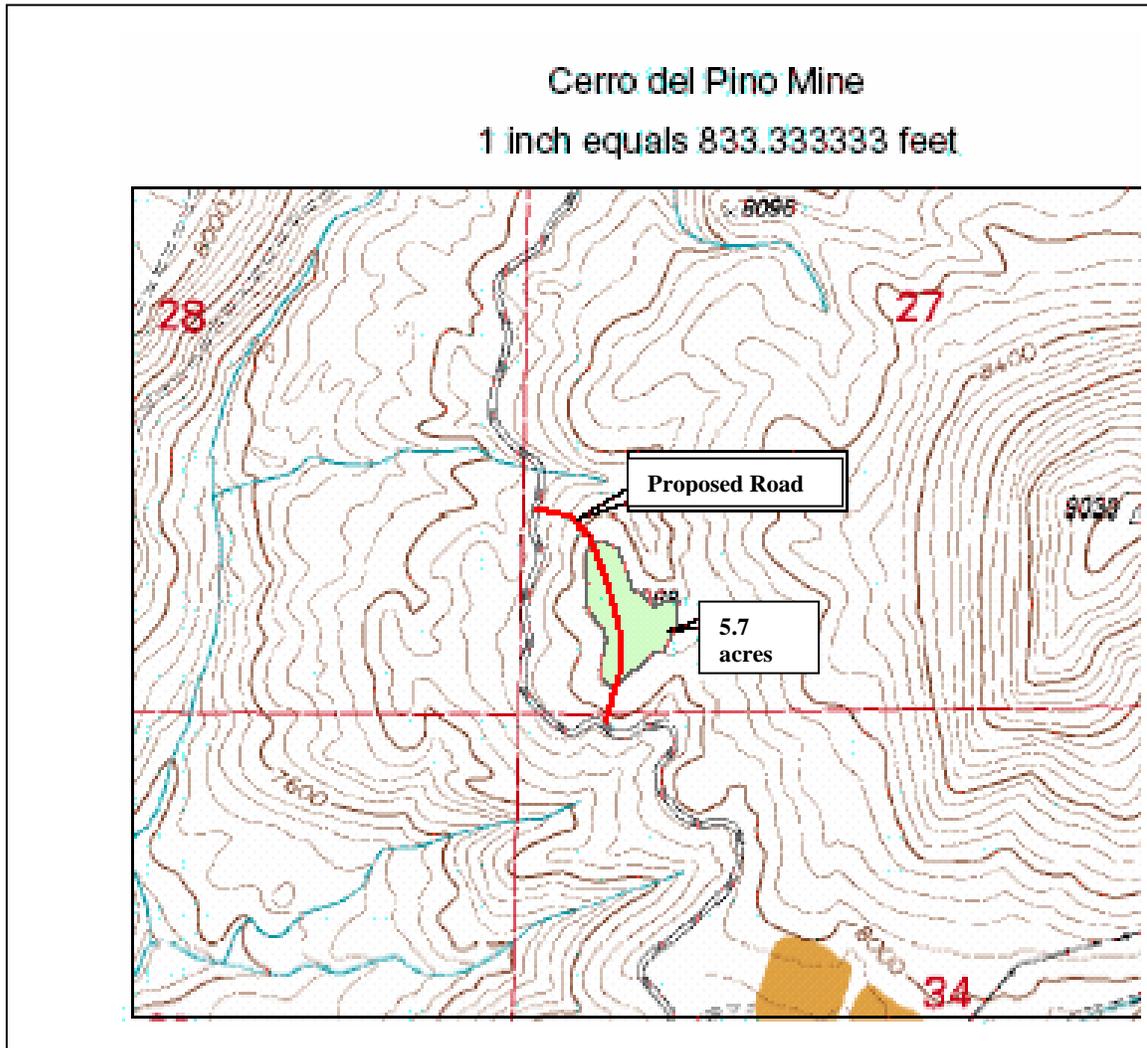


Figure 1. Proposed Cerro del Pino Pumice Mine with access road connecting to FR 10

The pumice would be loaded into 40 cubic yard semi-truck trailers using a gasoline-engine powered conveyor. The trucks would then haul the pumice from the site to Utility Block's facility in Albuquerque; a distance of approximately 65 miles. The pumice would be hauled on Forest Road 10 (FR 10), State Road 290 (SR 290), State Road 4, U.S. Highway 550, and State Route 528 toward the Utility Block Company, Inc. property in Albuquerque. The operating plan calls for no more than six loads (six roundtrips) to be hauled per day from the site.

At the completion of pumice mining in each block, reclamation would begin. Reclamation would include recontouring of the site to blend into surrounding topography, replacement of salvaged topsoil on the surface of the site, and revegetation with a seed mix approved by the Santa Fe National Forest (Appendix 1). Erosion control structures would be constructed as needed, and logs set aside

during clearing would be scattered on the site and across the revegetated access road.

Decision Framework

In accordance with the Federal Land and Policy Management Act of 1976, 36 CFR 228 subpart C, and the Santa Fe National Forest Land and Resource Management Plan as amended; a decision based on this Environmental Assessment will respond to the plan of operations submitted by Utility Block Company, Inc. for lease and operation of the Cerro del Pino pumice mine.

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

- Should the Santa Fe National Forest issue a Mineral Material Sale Contract for this material? Issuing a mineral sale contract is a discretionary action.
- If it is appropriate to issue a contract, how many pumice hauling loads per day is reasonable?

The Santa Fe National Forest Acting Forest Supervisor, as the responsible official, will decide whether to implement an action alternative with all stated mitigation and monitoring requirements, the no action alternative, or if documentation in an Environmental Impact Statement is required.

Project Area

The proposed 5.7-acre pumice mine would be located adjacent to FR 10 on a flat bench that sits on the western slope of Cerro del Pino. The proposed mine would be located less than one mile north of Utility Block's current 10-acre pumice mine.

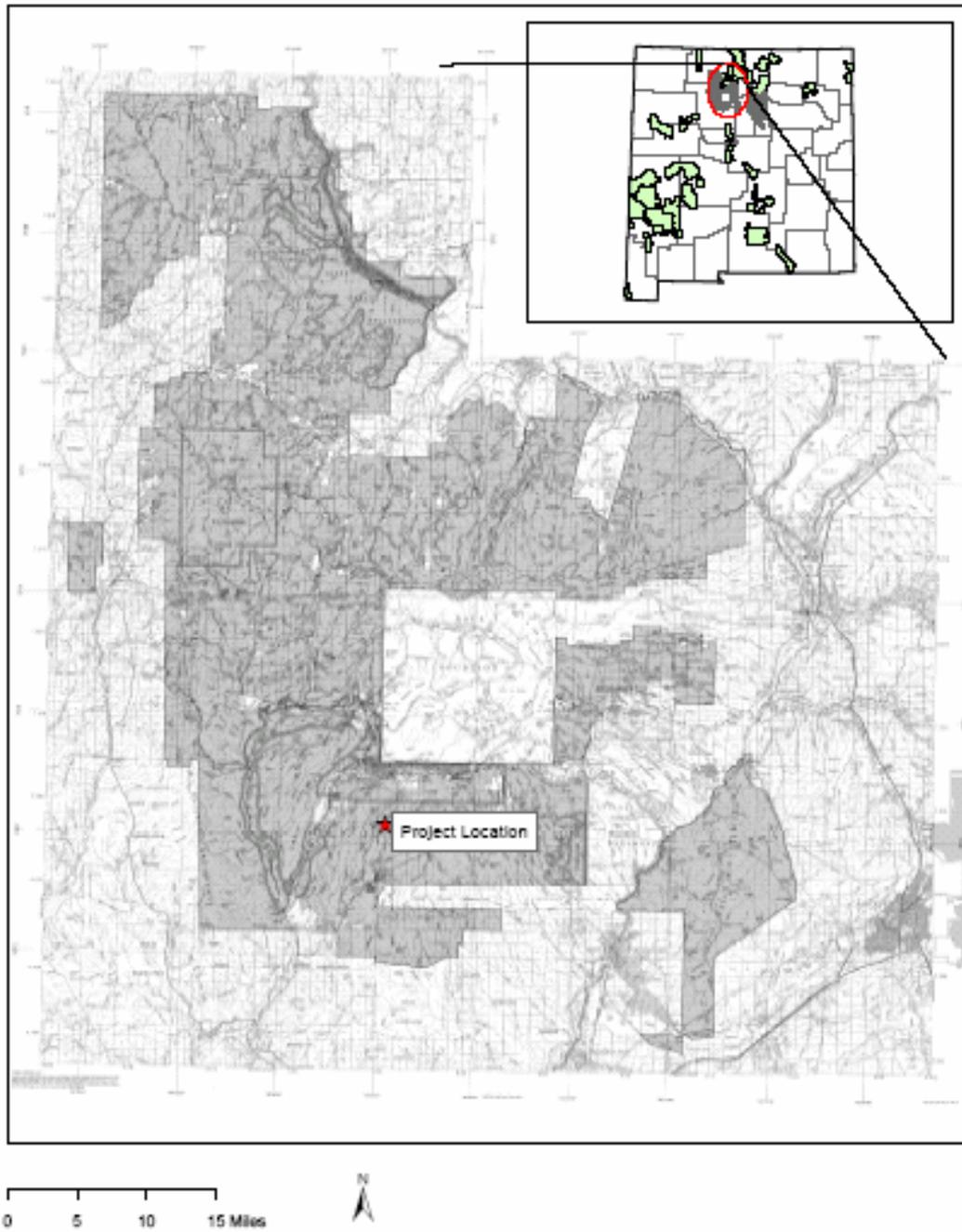


Figure 2. Project location map

Relationship to Forest Plan

The Santa Fe National Forest Land and Resource Management Plan provides direction and standards for the management of lands in and adjacent to the proposed Cerro del Pino pumice mine. Direction for mining on the Santa Fe National Forest is found on pgs. 80 and 81 in Chapter 4 – Management Direction. Standards and guidelines for the management area in which the proposed pumice mine occurs is located on pgs. 157 to 160 in standards and guidelines for Management Area P.

The proposed Cerro del Pino pumice mine is located entirely within Management Area P, which includes an emphasis on, “cultural resource location, inventory, nomination, and protection.” The forest plan indicates that Management Area P does not have any prescriptions specific to mineral material sales; however the Forest Plan does include applicable Forestwide prescriptions which are:

- Respond to requests for large quantities of mineral materials through the NEPA process, advertised sale (if appropriate), and permit administration where not needed for administrative use.

- Control surface uses in mineral operations through plans of operation and permits which provide for:
 - meeting Visual Quality Objectives;
 - preservation of water quality;
 - protecting watershed values;
 - reclamation to original or characteristic contours, or adapted to serve further surface resource uses;
 - revegetation or reforestation with appropriate species to attain soil stability;
 - cultural resources; and
 - Threatened and Endangered species and other wildlife habitats.

- Ensure reclamation of mineral areas to restore resource damage and remove public safety hazards, as needed. Reclamation will be managed for progressive development and rehabilitation. Operating plans, including appropriate bonding, will be the means for accomplishing this.

Public Involvement

The proposed Cerro del Pino pumice mine was scoped together with another proposed pumice mine expansion (South Pit pumice mine expansion) currently operated by Copar, Inc. Though many scoping responses separately commented on each mine proposal, many comments received did not specify which mine

proposal the comment addressed. In those situations where the commenter did not identify a specific proposal, the comment was considered for both mine proposals.

The Cerro del Pino pumice mine proposal was listed in the Schedule of Proposed Actions (SOPA) on October 1 to December 31, 2005 and on subsequent SOPAs. The proposal was provided to the public and other agencies for comment during scoping on October 3, 2005 through November 21, 2005. In addition, as part of the public involvement process, the agency held two public meetings announced in the local newspaper (one in Ponderosa and one at the Walatowa Visitors Center), met with the local Pueblo of Jemez, held on-site meetings with mine applicants, posted notices in local communities, and sent e-mails and letters to local agencies. The scoping notice with information on the proposed project and upcoming public meetings was also sent with the October water bill to the residents of the Community of Ponderosa.

In compliance with 36 CFR 215, a description of the proposed action, some possible alternatives, and anticipated effects were made available through a 30-day comment period beginning on the date of a publication of a legal notice published in the Albuquerque Journal on April 23, 2006. This Preliminary Environmental Assessment was mailed for comment to all parties that responded to scoping or expressed their interest in this project. It was also made available on the front page of the Santa Fe National Forest Webpage (<http://www.fs.fed.us/r3/sfe/>) beginning on April 23, 2006.

The Preliminary Environmental Assessment was finalized after considering comments received during the 30-day period. Comments were received from two different parties. As a result of these comments, minor changes have been made to the traffic analysis and the wildlife analysis to provide more accurate and up-to-date information.

The final EA will be the primary document used to inform the decision-making process. A decision based on this assessment is subject to appeal pursuant to regulations at 36 CFR 215. A legal notice of the Decision Notice was published in the Albuquerque Journal on July 2, 2006.

Issues

The Forest Service separated the issues received during internal and external scoping 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; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec.

1501.7, “...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)...” A list of non-significant issues and reasons regarding their categorization as non-significant may be found in the project record.

As for significant issues, the Forest Service identified three topics raised during scoping. These issues include:

Traffic: The number of pumice hauling trucks that would travel to and from the proposed mine site was a primary issue identified during the scoping process. The main concerns associated with pumice truck traffic included safety of Forest users, nearby residents, schoolchildren and pets; noise from hauling trucks in the community of Ponderosa; and interference of pumice hauling on FR 10 with other projects. As a result, traffic has been quantified by the measure loads/day of pumice hauled and this measure has been used to drive the two action alternatives.

Water Quality: Effects of the proposal on surface water and groundwater quality are analyzed and disclosed in this Environmental Assessment.

Wildlife: Effects of the proposal on wildlife are analyzed and disclosed in this Environmental Assessment.

Other issues discussed in this analysis include **Heritage Resources** since the proposed Cerro del Pino pumice mine is located entirely within Management Area P, which includes an emphasis on, “cultural resource location, inventory, nomination, and protection.”

Chapter 2 - Alternatives

This chapter describes and compares the alternatives considered by the Forest Service for the Cerro del Pino Pumice Mine project. It includes a discussion of how alternatives were developed, an overview of mitigation measures, monitoring and other features common to all alternatives, a description and map including specific mitigation measures of each alternative considered in detail, and a comparison of these alternatives focusing on the significant issues. Chapter 2 is intended to present the alternatives in comparative form, sharply defining the issues and providing a clear basis for choice among options by the responsible official and the public (40 CFR 1502.14).

Some of the information used to compare alternatives at the end of Chapter 2 is summarized from Chapter 3, “Environmental Consequences.” Chapter 3 contains the detailed scientific basis for establishing baselines and measuring the potential environmental consequences of each of the alternatives. For a full understanding of the effects of the alternatives, readers will need to consult Chapter 3.

Alternative Development Process

The Forest Service interdisciplinary team (IDT) used information from scoping, including the significant issues identified for the project (see Chapter 1), in conjunction with the field-related resource information, to formulate alternatives to the proposed action. The proposed action and each action alternative presented in this EA provide a different response to the significant issues; one alternative may respond to more than one issue. Each action alternative is also designed to meet the stated purpose and need for the Cerro del Pino Pumice Mine project, and the project-specific desired conditions.

Each action alternative represents a site-specific proposal developed through intensive interdisciplinary evaluation of current and desired conditions, based on field verification. Project area identification and design also made use of high resolution topographic maps and a large quantity of resource data available in geographic information system (GIS) format.

Forest Plan Consistency

All applicable forest-wide and management area standards and guidelines have been incorporated into all alternative design. The Forest Service uses many mitigation and preventive measures in the planning and implementation of land management activities. The application of these measures begins during the planning and design phases of a project.

Both of the action alternatives (Alternative 2 – Proposed Action, and Alternative 3 – Reduced Traffic) would not be in compliance with Forest Plan guidelines for the management of the northern goshawk as stated in the Forest Plan (Amendment #6 October 1996 – pg. 9). Specifically guidelines for management of the northern goshawk in ponderosa pine habitat limit forest openings to four acres and suggest that each acre has two snags. As a result, approval of a 5.7 acre mine for mining under either Alternative 2 or 3 would require a project-specific amendment to the Forest Plan to address this issue.

Project-Specific Mitigation

The analysis documented in this EA discloses the possible adverse and beneficial impacts that may occur from implementing the actions proposed under each alternative. Measures have been formulated to avoid, minimize, or mitigate adverse impacts. These measures were guided by the direction from the Santa Fe National Forest Plan previously described (in this chapter and in Chapter 1).

IDT specialists use on-the-ground inventories, computer (GIS) data, and various studies to prepare their reports. Resource reports show the cause and effect relationships between the alternatives and their specific effects, and indicate mitigations to reduce or eliminate those adverse effects in the design of the alternatives. These reports are summarized and referenced in this EA and may be found in the project record. Resource concerns and mitigation measures may be refined further during final design work, when specialists have one more opportunity to revise their recommendations.

Applicable Forest Plan standards and guidelines, the "Best Management Practices" (BMP's) used to meet the requirements of the Clean Water Act, and project-specific mitigation measures are identified below:

Both action alternatives (Alternatives 2 and 3) will include the following design criteria and mitigations:

To minimize potential traffic impacts such as safety, noise, increased traffic resulting from the proposed operation and pumice hauling, the following design criteria will be required:

- The operators will be required to apply for a Road Use Permit from the Santa Fe National Forest to use FR 10. The Road Use Permit will require the operator to maintain the road to Forest Service standards.
- Mine traffic is restricted during school days. On school days (when the Jemez Valley School is in session) mine traffic through the village of Ponderosa is not allowed between 7:30 to 8:30 a.m. and 3:00 to 4:00 p.m. (unless other times are agreed to for better coordination with school transportation).
- All pumice hauling will occur Monday through Friday; excluding Memorial Day, Labor Day and Independence Day holidays or holiday weekends; and seasonal restrictions.
- Pumice trucks hauling materials on FR 10 will be limited to 25 mph or as otherwise posted (e.g. near the Paliza Group and Family campgrounds where 10 mph is posted) to minimize dust and facilitate safety

Control surface uses in mineral operations through plans of operation and permits which provide for Threatened and Endangered Species and other wildlife habitat:

- To avoid and minimize impacts to nesting birds, no tree removal will occur between the dates of March 1 to July 31 each year.
- If a goshawk nest is found during operations, the district biologist will be consulted for mitigations to avoid disturbance.

Reduce disturbance in peregrine falcon suitable habitat area during the early breeding season. These mitigations are based on an interim site plan for the peregrine falcon and may be modified to reflect updates to the site plan.

- To reduce disturbance to potential nesting habitat:
 - 1) From March 1 through May 15, pumice trucks will not pass through the suitable breeding habitat area until after 10 a.m.
 - 2) From March 1 through May 15, Jake brake use is restricted in the suitable breeding habitat area.

Because of site confidentiality, specific locations are not included in this document, but are listed in the Biological Assessment/Biological Evaluation.

Control surface uses in mineral operations through plans of operation and permits which provide for minimizing long-term impacts and meeting Visual Quality Objectives

- No stockpiling of mining material on site (stockpiling of material for reclamation purposes is authorized).
- No permanent structures will be constructed as part of the mine; although at least one self-contained portable toilet is required to be on the site during all operations.
- Mining operations will avoid visual impacts as seen from FR 10 by maintaining a vegetation buffer between the mine and FR 10.

Reclamation will be required to restore resource damage, improve visual integrity, and remove public safety hazards (see reclamation plan, Appendix 1):

- The site will require concurrent reclamation so that no more than three acres will be unreclaimed at any one time.
- The project site will be seeded with natives and mulched with weed-free straw.

Control surface uses in mineral operations through plans of operation and permits which provide for preservation of water quality and protecting watershed value:

- Erosion control barriers consisting of certified weed-free straw bales, straw wattles, and/or silt fencing will be constructed as needed during mining or reclamation to prevent erosion from occurring.
- During mining, the mine pit areas will be designed to be internally draining.
- Soil should be stockpiled in situ and replaced so that the “A” horizon is back on the surface.
- Culvert placement needs to be at grade.
- Oil, fuel, and hydraulic fluids from machinery or equipment shall be changed, collected, and disposed of off of National Forest System lands.
- No storage of petroleum products will be permitted at the project site.
- A spill kit will be kept on site and spills would be contained and contaminated pumice will be disposed of in an authorized facility off of Santa Fe National Forest lands.

Alternatives Considered but Eliminated from Detailed Study

The following three alternatives were discussed by an interdisciplinary team of resource specialists, but eliminated from detailed study in this Environmental Assessment:

- Hauling north through Sierra los Pinos

A comment that was discussed more than once during scoping was that the environmental analysis for the Cerro del Pino proposed pumice mine should consider only allowing pumice trucks to transport pumice north on FR 10 from the mine site, through the community of Sierra los Pinos, to State Highway 4. This requirement would change the current route of hauling trucks, which are required to go south on Forest Road 10, to State Highway 290 through Ponderosa, and emptying onto the southern portion of State Highway 4.

Requiring at least a portion of pumice hauling to go through Sierra los Pinos would seem to be a more equitable alternative; however, this option would most likely result in additional safety and economic impacts. Requiring pumice trucks to go the northern route would mean that a larger amount of drivers are impacted by pumice hauling, and it would not address traffic along Highway 4. Additionally, none of the 20 comments received from private citizens that discussed traffic showed concern about Utility Block pumice truck drivers. Many concerns on this issue were received from Ponderosa residents, but these all focused on pumice truck drivers from other companies.

- Less than four loads per day

This potential alternative was identified as a result of scoping, which found traffic and traffic-related impacts resulting from pumice hauling as a primary concern of local communities. An alternative to authorize the proposed mine with a condition that less than four loads of pumice are hauled per day would result in infeasible logistical and economic impacts. Should the mine be authorized to haul less than four loads per day, it is unlikely that all of the pumice at the site would be able to be removed within the term of the Special Use authorization (project record).

- Increase in loads per day (more than six)

An increase in pumice hauling truck loads per day above the current six loads/per day was discussed as a possible alternative. This option was eliminated from further study based on the results of scoping, which identified traffic and traffic-related impacts resulting from pumice hauling as a primary concern of local communities.

Alternatives Considered in Detail

Alternative 1 (No Action)

Under the No Action alternative, current management plans would continue to guide management of the project area. The proposed pumice mine would not be authorized. There would be zero loads per day of pumice hauled by Utility Block once pumice mining from their existing mine site on Forest Road 10 is completed. The no action alternative may result in mining occurring at a slower rate at the existing Utility Block Mine. This would mean that the pumice hauling could continue to and from the existing pumice mine under the existing Special Use permit until September 2008, which is when the existing Special Use permit expires.

Alternative 2 (Proposed Action)

This alternative would include approval of a Special Use Permit for pumice mining for up to six years at a site on the southwest flank of Cerro del Pino, next to FR 10. The proposed site is approximately 5.7 acres and would be mined by Utility Block Company, Inc. This alternative will maintain current operating capacity of the mine by authorizing six roundtrips per day (12 trucks/day) to be hauled from the proposed mine site on Forest Service Roads.

Proposed Haul Route Cerro del Pino Mine

Alternatives 2 and 3

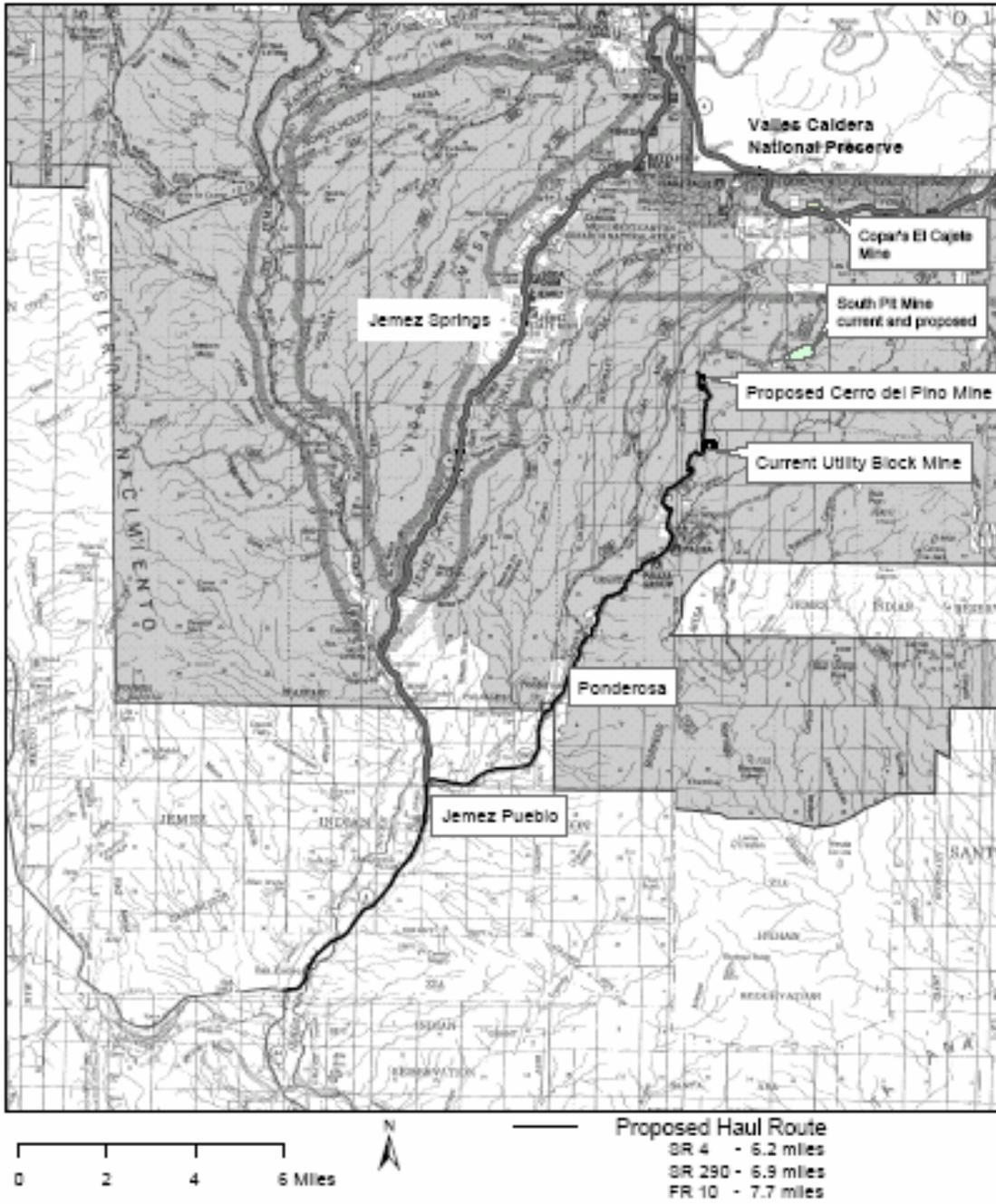


Figure 3. Proposed Cerro del Pino Pumice Mine haul route

Alternative 3 (Reduced Traffic)

This alternative would include approval of a Special Use Permit for pumice mining for up to six years at a site on the southwest flank of Cerro del Pino, immediately next to FR 10. The proposed site is approximately 5.7 acres and would be mined by Utility Block Co. This alternative will reduce current operating capacity of the mine from six roundtrips per day (12 trucks/day) to four roundtrips per day (eight trucks/day) to be hauled from the proposed mine site on Forest Service Roads. This decreases the amount of truck traffic currently authorized for Utility Block to two-thirds of pumice hauling on their current mine.

All mining activities besides hauling would remain the same, including reclamation. Given a reduced rate of pumice extraction from the mine, however, it is likely that pumice hauling from this site would occur over a longer time period than in Alternative 2.

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

Table 1. Comparison of Alternatives

	Alternative 1 – No Action	Alternative 2 – Six loads/day	Alternative 3 – Four loads/day
How well does the alternative respond to Forest Plan management guidance?			
<ul style="list-style-type: none"> Respond to requests for large quantities of mineral materials ... and permit administration where not needed for administrative use. Control surface uses in mineral operations through plans of operation and permits which provide for all resource objectives. 	<ul style="list-style-type: none"> Does not meet forest plan guidance N/A 	<ul style="list-style-type: none"> Alternative would meet Forest Plan guidance. Project design criteria and mitigations would minimize impacts associated with project implementation 	<ul style="list-style-type: none"> Alternative would meet Forest Plan guidance. Project design criteria and mitigations would minimize impacts associated with project implementation

	Alternative 1 – No Action	Alternative 2 – Six loads/day	Alternative 3 – Four loads/day
<ul style="list-style-type: none"> Ensure reclamation of mineral areas to restore resource damage and remove public safety hazards. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Ongoing reclamation will be required during mining operations. Monitoring of reclamation will occur to ensure compliance with reclamation mitigations and specifications. 	<ul style="list-style-type: none"> Ongoing reclamation will be required during mining operations. Monitoring of reclamation will occur to ensure compliance with reclamation mitigations and specifications.
How does each alternative respond to issues and concerns recorded during scoping?			
Traffic	Once the existing Utility Block-operated pumice mine on FR10 is fully reclaimed, pumice truck hauling would decrease by approximately 2.6 per /day on FR 10 and other currently used state highways.	Utility Block would continue to haul six round-trips of pumice per day except on weekends and holidays. Road use conflicts on FR10 would be most likely to occur in May – July during high recreational use and from September through November during hunting season and implementation of other projects on FR 10.	Utility Block operators would be limited to hauling four round-trips of pumice per day. Traffic conflicts would still be likely to occur during high recreational use or during other Forest Service approved activities; however, pumice hauling would be less frequent .
Water Quality	No impacts	Project design criteria and mitigation measures minimize potential impacts to nearby surface and groundwater sources.	Project design criteria and mitigation measures minimize potential impacts to nearby surface and groundwater sources.
Wildlife	No impacts	Mining operations would include the direct impact of	Mining operations would include the direct

	Alternative 1 – No Action	Alternative 2 – Six loads/day	Alternative 3 – Four loads/day
		removing 5.7 acres of Ponderosa pine habitat for a variety of local species. Additionally, traffic hauling would result in indirect impacts (i.e. noise and dust) that could disturb the lifecycles of many forest dependent species.	impact of removing 5.7 acres of Ponderosa pine habitat for a variety of local species. Additionally, traffic hauling would result in indirect impacts (i.e. noise and dust) that could disturb the lifecycles of many forest dependent species. Under this alternative, traffic impacts would have a slightly smaller impact.
Economics	A no action alternative would temporarily reduce the ability of Utility Block, Inc to produce a product and may result in reduction of one or more employees.	Mining operations and pumice hauling activity would remain the same as is currently practiced.	Reducing the amount of authorized pumice hauling would slightly reduce the need for pumice truck drivers by the company potentially impacting one or two jobs. Reduced profits as a result of less pumice is a possibility, but expected to be of negligible effect.

Chapter 3 - 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 comparison of alternatives presented in the chart above. This section is organized by resource. Within each section, the affected environment is briefly described, followed by the environmental consequences (effects) of implementing each alternative.

Past, Present, and Reasonably Foreseeable Future Activities Used for Consideration of Cumulative Effects

Discussion of environmental effects in Chapter 3 is placed in the context of past, present, and future environmental change through a cumulative effects analysis. This section discusses past, present, and reasonably foreseeable activities that will be discussed in consideration with the expected effects of alternatives.

The following activities have been identified as potentially contributing to the effects analyzed herein. These activities and occurrences have been part of the incremental change in ecological conditions in the project area, and may continue to influence conditions in the project area over the term of the project. Foreseeable future actions are those for which a proposed action has been approved or those proposed for NEPA analysis in the near future. Other possible future actions are considered too speculative to include in the analysis.

Table 2. Past, present, and foreseeable actions considered in cumulative effects analysis

Action(s)	Date of Action	Area	Size *	Comments
Prescribed burns				
Paliza Vegetation and Road Management EA	February 2006 through November 2009	Paliza Canyon, Guacamalla Canyon, Borrego Canyon, and parts of Cerro del Pino	7,000 acres	Prescribed burning in the Paliza area outside of the proposed Cerro del Pino mine location would contribute to traffic on FR10 and SR 290 during periods of active burning in the fall and possibly spring for the next several years. The southern
Paliza Fuels Treatment Complement	February 2006 through November 2009	Paliza Canyon, Guacamalla Canyon, Borrego Canyon, and parts of Cerro del Pino	2,100 acres	

Action(s)	Date of Action	Area	Size *	Comments
				portion of FR 10 would be a primary access road for much of the Paliza project and would experience temporary traffic impacts from fire personnel during prescribed fire activities.
San Juan Mesa Prescribed Burn	Completed in Fall 2004	San Juan Mesa	6,200 acres	Located approximately 1.5 miles west of the proposed Cerro del Pino mine
Timber and Vegetation Treatments				
There are no recorded past timber sales or vegetation treatments at the location of the proposed Cerro del Pino Pumice Mine. Past activities recorded within five miles of the proposed project site include the following:				
Paliza Vegetation and Road Management project	Completed 1999	Paliza		Vegetation management activities on approximately 1,700 acres in the Paliza management area
Pueblito Timber Sale	Completed 1982	San Juan Mesa	1,200 acre timber sale	
Paliza Campground Timber Stand Improvement	Implementation planned for 2006 - 2007	Paliza Group and Family Campground		95 acres in the Paliza Group and Family campgrounds will be treated by cutting and removal of diseased and bug-killed ponderosa pine trees. All activities will take place from October through March, when campgrounds are closed to the public. This operation could include the use of a skidder, loader, logging truck, and pick-up truck for a period of up to one month. Activities will take place when campgrounds are closed and equipment such as the skidder and loader will remain onsite during treatments.
Wildfires				
There are no recorded recent wildfires recorded at the Cerro del Pino Pumice Mine project				

Action(s)	Date of Action	Area	Size *	Comments
<p>location. There have been, however, six wildfires recorded within approximately three miles of the project. Wildfires recorded near the proposed project area have been 100 acres or less in size with the exception of the 400-acre Nicole fire in 1996 and the 200-acre Labor fire in 2002.</p> <p>Fire closures may be implemented in times of extreme fire risk (usually late June through early July). A closure order for the Jemez Ranger District would prevent any access to lands in the Jemez Ranger District unless otherwise approved. Closure of the Forest due to fire risk could result in potential increased concentrations of traffic on regular roads such as FR 10 during periods before or after closure.</p>				
Range Management				
Vallecitos Allotment	Ongoing – seasonal grazing (June 1 – October 1)	Paliza		The proposed mine site is located within the Vallecitos grazing allotment. The proposed project site is located more than a mile away from the nearest water development and approximately ½ mile from the nearest key area for range monitoring. Range management activities and permittee access via FR 10 may result in minor traffic.
Recreation				
<p>FR 10 is a commonly used graded road that provides access to popular camping areas and can be used to access much of the southeastern area of the Jemez Ranger District. FR 10 is one of the more commonly used roads on the Jemez Ranger District. Please see the traffic analysis in Chapter 3 for more detail regarding vehicular use on this road.</p>				
Paliza Group Site Rehabilitation	2007	FR 10, three miles north of the community of Ponderosa		The completion of the Paliza Group Site Rehabilitation project, including improvements to the Paliza Campground and Paliza Group Campground, is expected to occur in 2007. This popular area has been closed for the last two summers during construction to increase capacity and access for all Forest users. Re-opening of the campgrounds is likely to result in increased visitor traffic to the southern portion of FR 10 and on SR 290. This will result in increased traffic through Ponderosa and on the southern portion of FR 10 concentrated seasonally from Memorial Day through Labor Day primarily during weekends.

Action(s)	Date of Action	Area	Size *	Comments
Special Uses				
Ponderosa Water Line	2 months in duration during the period of Fall 2006 to Spring 2007	From Community of Ponderosa north to Paliza campground along FR 10	3 miles	Installation of a water distribution pipeline in the southern portion of FR10 may result in local traffic delays or temporary road closures during construction activities.
Roads/Transportation				
Forest Road 10 Tree Removal Maintenance	This activity may occur in 2006 or 2007	Southern 12 miles of FR 10 right-of-way	15 feet on either side of FR 10, 12 miles length (approximately 45 acres)	Tree removal on either side of FR 10 has yet to be implemented besides marking of trees. Implementation of tree removal on FR 10 may result in periodic traffic delays on FR 10 for up to two weeks occurring on workdays during business hours.
Road Maintenance	Ongoing; as needed	FR 10 south of the current and proposed Cerro del Pino Pumice Mine	FR 10 right-of-way	Road grading may occur as needed as specified in special use permits for pumice hauling
Mining				
South Pit Pumice Mine Expansion	Spring 2007	FR 270 , east of FR10	100 acres	A current proposal for an expansion to an existing pumice mine adjacent to FR 10 would result in pumice hauling traffic of up to six

Action(s)	Date of Action	Area	Size *	Comments
				roundtrips per day (12 trucks per day). The expansion is not expected to increase traffic from the South Pit mine, but would likely maintain current levels of hauling from Souhpit for another five to ten years.
Existing South Pit mine	Reclamation to begin in 2006 or 2007.	FR 270 , east of FR 10	9 acres	The existing South Pit mine's minerals mining contract expired in September 2005. A new mining contract under an emergency sale was approved for the existing 9-acre South Pit mine site in June 2006. This contract will last until December 2006. Once active mining operations are completed, Copar, Inc. will be reclaiming the 9-acre site. Reclamation will be completed using onsite mechanical equipment. Little or no traffic effects above current mine traffic are expected.
Existing Utility Block	Reclamation to begin in June	FR 10 south of	10 acres	The existing Utility Block

Action(s)	Date of Action	Area	Size *	Comments
Mine	2006	proposed mine		mine currently hauls at an average rate of 2.6 loads of pumice per day and is often halted during winter months due to icy conditions. During the fall (Sept, Oct., Nov.) up to 8 loads per day have been recorded. Pumice extraction at the existing Utility Block mine is expected to be completed in August 2006.
Utility Block Mine reclamation	To begin at the start of work on the proposed Cerro del Pino Pumice Mine.	Adjacent to FR 10, south of proposed Cerro del Pino Pumice Mine location	5 acres (previous acreage already reclaimed)	Reclamation of Utility Block's current pumice mine would occur simultaneously with mining of the proposed Cerro del Pino mine site. Active reclamation would include up to two weeks for re-contouring and site preparation and one week in spring for re-seeding. Active reclamation would be accomplished using machinery from the Cerro del Pino mine, so there would be minor contributions to traffic on FR 10

Action(s)	Date of Action	Area	Size *	Comments
				between the two mines during this period of active reclamation.
Non-Forest Service Activities				
Ponderosa dam reconstruction	Up to two months of construction sometime between summer 2006 and 2008	North of Community of Ponderosa; adjacent to SR 290 near it's junction with FR 10	n/a	Reconstruction of the dam spillway may contribute large truck traffic on SR 290 and may result in the temporary presence of heavy machinery on the SR 290 right-of-way near it's northern terminus.
NM Department of Transportation (NMDOT) bridge replacement	Two weeks of construction to occur in 2007	South of Community of Ponderosa on SR 290	n/a	The replacement of a small bridge on SR 290 by NMDOT will likely result in local traffic detours and could result in temporary traffic increases from heavy machinery on the southern portion of SR 290.

* All acreage estimates are approximations

Environmental Effects of the Significant Issues

3.2 Traffic

Traffic impacts on FR 10 and through the Community of Ponderosa on SR 290 were the primary issues discussed in comments received by the Forest Service during scoping on this proposal. This analysis will quantify current traffic levels on FR 10 according to available data, and will specifically discuss how Utility Block's operations on an existing pumice mine contribute to traffic levels on FR10 and SR 290. Section 3.2.2 will discuss expected traffic consequences for each alternative identified in this EA.

3.2.1 Affected Environment

The Forest Service only has authority over roads on National Forest Lands. FR 10 is the only road used by Utility Block while hauling pumice south to Albuquerque that the Forest Service has authority to implement management stipulations or regulate use. Many comments received during scoping on this proposal requested that the Forest Service limit the speed, times of travel, or noise caused by pumice hauling on state roads (especially SR 290 through the community of Ponderosa). Though the Forest Service can regulate the time of pumice hauling on FR 10, thus affecting the use of SR 290 and other connecting state routes, the Forest Service cannot directly regulate use of pumice trucks on these state roads.

Based on comments received from scoping regarding traffic concerns on state roads, the Forest Service has contacted the New Mexico State Highway Department and requested for a speed enforcement study to take place on State Route 290 sometime in early summer. The results of this study can provide the basis for increased enforcement of speed limit violations or for changes to the existing speed limit.

FR 10 is one of the main Forest System Roads used by visitors to the Jemez Ranger District. It is the main route used for access to the Paliza Group and Family Campgrounds, its southern portion provides access to two private inholdings located off of connector roads (FR 266 and FR 270). FR 10 also is used to access the Cerro Pelado look-out tower and can be used as a north-south running alternate to State Highway 4 when traveling between the communities of Ponderosa and Sierra los Pinos. FR 10 is considered a Level 2 Forest System Road, meaning it is a key access point for lesser used Forest System Roads and as such receives more regular maintenance to facilitate good road conditions.

FR 10 is an unpaved gravel and dirt road that stretches approximately eleven miles between the Community of Ponderosa north to the Community of Sierra los Pinos. At times the road winds its way over steep slopes with switchbacks and a drop-off of several hundred feet on one side or the other. Currently, only the southern eight miles of the road, south of the existing Utility Block mine, receives as needed maintenance by Utility Block in the form of road grading as authorized in their Special Use Permit. While only the portion of FR 10 adjacent to the Paliza Campground has a posted speed limit of 10 miles per hour, a speed limit of 25 miles per hour can be enforced on the remainder of the road based on the engineering specifications of the road.

There is very little data concerning vehicular use of FR10, though it is known that its use varies drastically according to season. FR 10 receives the lightest use in the winter months when icy conditions or snow often prevent vehicular access. In the spring and summer, recreational use near Paliza Group and Family Campgrounds result in substantially higher amounts of traffic on the southern one or two miles of the road with less traffic throughout the northern length of the route. In the fall, hunters and mine operators who are stockpiling supplies on nearby privately owned lands for use over the winter increase their use of FR 10 primarily on the southern eight miles of the road.

Data collection on vehicular use of FR 10 began through the installation of three infrared traffic counters on December 21, 2005. Two traffic counters were placed on FR 10 and one was placed on FR 270 to determine vehicular use along the length of FR 10 and to delineate the contribution of traffic on FR 10 from private property owners and pumice hauling on FR 270 and from those users that only use the southern five to eight miles of FR 10.

On March 10, 2006 these traffic counters were removed and there was no data collection between March 11 to May 25, 2006. Two traffic counters were then reinstalled on May 26, 2006 in time for data recording during the Memorial Day weekend – thought to be one of the highest traffic weekends on the Jemez Ranger District. One of these counters was placed at the southern entrance to FR 10 as before, and the other was moved to the access road to the existing Utility Block, Inc. mine nearby FR 10.

Preliminary data collected from traffic counters appears to be consistent with expected results; which are that traffic generally increases from December to June, that there is more vehicular use towards the entrance of FR 10 than several miles north, and that use of forest roads occurs for a longer part of the day as the seasons progress.

Table 3. includes a summary of the hourly data collected from the three traffic counters. The traffic counter located at the entrance of FR 10, near the Community of Ponderosa, receives the greatest use (almost twice as much as the other counters), most likely because it is the main entrance point to Paliza Canyon and other National Forest System lands nearby. In contrast to the other counters, which are located several miles north on FR 10 and on FR 270, the lower traffic counter closest to Ponderosa receives much more use on weekends than on weekdays. As the seasons progress toward spring and summer the data shows that though the majority of the traffic stays in the southern 3 miles of FR 10, a larger percentage of the traffic is occurring on the middle and northern portions of FR 10. Furthermore, based on the data it can be deduced that this recreational traffic is primarily contained within the southern five to eight miles of FR 10 and connecting forest roads.

Data collected over the Memorial Day holiday in late May and early June show that average vehicular use of the southern portion of FR 10 stayed approximately the same since March. This traffic data disagrees with expectations of greater use on the southern part of FR 10 during recreational use 'peaks'; however, it may not be a representative year due to the current closure of Paliza Group and Family campgrounds.

Table 3. Summary of traffic data collected on FR 10, FR 270, and the existing Utility Block access road

		Dec-05	Jan-06	Feb-06	Mar-06	May/June 2006
Lower FR 10 Counter - Placed at southern terminus of FR 10						
	Daily Count Average	58*	52	61	69	69
	Estimated vehicles per day	29	26	31	35	35
	Weekend Count Average**	n/a	59	71	87	93
	Weekday Count Average**	n/a	55	58	64	58
	Hour of greatest use	9am - 3pm	8am - 5pm	6am - 5pm	6am - 5pm	10 am - 3pm
	Daily Count Max	85	92	99	102	121
	DailyCount Min	23	28	28	51	23
	Number of days counted	10	31	28	9	13
Mid - FR 10 Counter - Placed immediately south of turn-off for current Utility Block mine on FR 10						
	Daily Count Average	23	19	36	33	
	Estimated vehicles per day	12	10	18	17	
	Weekend Count Average**	n/a	13	14	16	
	Weekday Count Average**	n/a	27	30	41	
	Hour of greatest use	7am - 12pm	7am - 12pm	7am - 1pm	7am - 1pm	
	Daily Count Max	38	36	50	50	
	DailyCount Min	6	3	7	10	
	Number of days counted	10	31	28	9	
FR 270 Counter - Placed approximately 1/2 mile east of junction with FR 10						
	Daily Count Average	4	3	19	39	
	Estimated vehicles per day	2	2	10	20	
	Weekend Count Average**	n/a	3	1	2	
	Weekday Count Average**	n/a	5	26	50	
	Hour of greatest use	10am - 4pm	10am - 4pm	7am - 12pm	7am - 12pm	
	Daily Count Max	10	23	53	60	
	DailyCount Min	0	0	0	0	
	Number of days counted	10	31	28	9	
Access Road Counter - Placed in road to existing Utility Block mine						
	Daily Count Average					19
	Estimated vehicles per day					10
	Weekend Count Average**					3
	Weekday Count Average**					26
	Hour of greatest use					6am - 8am
	Daily Count Max					52
	Daily Count Min					0
	Number of days counted					13

* One outlier of 122 counts was not included in the analysis

** May include days for months before or after

March analysis is based on data collected between March 1 and March 9

May/June analysis is based on data from May 26 to June 7

Data collected from haul tickets, which document the amount of pumice hauling from the existing Utility Block mine, also contributes information regarding the

vehicular use of FR 10. The Forest Service currently has no load per day limit for pumice hauling by Utility Block on their existing mine; however, data from haul tickets between July 2000 and February 2006 has been collected for this analysis. Based on data from haul tickets between December 14, 2005 and February 28, 2006 (similar to the time period of data collection by traffic counters) Utility Block hauled approximately 2 loads per day (2 roundtrips) on average from their existing mine.

Between July 2000 and February 2006, the average number of hauls per day has been less than three (2.6 roundtrips per day). Throughout the past six years of operation by Utility Block, pumice hauling appears to occur the least during winter months (December, January, February) when there is often less than one roundtrip per day. This is probably due to icy conditions or Seasonal Forest Road Closures that prevent vehicular access. The most use appears to occur in the fall (September, October, November), which averages approximately six roundtrips per day. Pumice hauling activity is most likely highest in fall because it is desirable for Utility Block to stockpile extracted pumice off of the Forest in areas with year-round access before the mine becomes inaccessible during winter. The highest use between July 2000 and February 2006 was an average of eight roundtrips per day, which occurred between November 1, 2002 and November 30, 2002.

During summer months (May, June, July, August) when total vehicular use of FR 10 is estimated to be highest, Utility Block has averaged approximately three roundtrips per day over the past six years. Pumice hauling by Utility Block has never increased over an average of four roundtrips per day during summer months.

3.2.2 Environmental Consequences

This section looks at the incremental impact of pumice hauling by the proposed action and other alternatives. This information has the dual purpose of informing the public of potential impacts of each alternative as well as providing information for an informed decision.

Alternative 1 - No Action

Under the No Action Alternative pumice hauling on FR 10 by Utility Block trucks would cease to continue once reclamation has been completed on their existing pumice mine. It is expected that reclamation would be completed on this mine before the end of 2006. Pumice hauling would continue for at least through December 2006 on FR 10; however, due to ongoing pumice mining activities occurring on the Copar, Inc. (Copar) South Pit Mine, which is located on FR 270 and connects to FR 10.

This alternative would result in a net average decrease of 2.6 pumice trucks per day in pumice hauling traffic. Though there would be no impacts from pumice mining under this alternative, the road maintenance of the southern nine miles of FR 10, 1.2 miles of FR 270, and 0.5 miles on FR 270C would be discontinued (maintenance requirements are currently part of the special use Road Permit for Utility Block) once operations on the current Utility Block mine are completed in 2006. The Forest Service would receive responsibility for continuing road maintenance on these portions of road. As a result, it is expected that road

condition would decline due to less regular maintenance activities and a greater response time after road damage as a result of storms.

Cumulative Effects

Since there are no negative impacts from the No Action Alternative, no cumulative effects are expected as a result of this alternative.

Alternative 2 – Proposed Action

Under the Proposed Action Alternative pumice mining operations would be authorized up to six roundtrips per day on weekdays excluding Memorial Day, Labor Day, and Independence Day. Additionally, to prevent impacts to schoolchildren pumice hauling would be excluded between 7:30 a.m. – 8:30 a.m. and 3:00 p.m. – 4:00 p.m. on school days.

Under this alternative pumice hauling could increase from the current average of 2.6 roundtrips per day to an estimated average of 4.1 roundtrips per day (based on a limit of six roundtrips per day for 250 days of the year). Thus, there could be a net increase of 1.5 roundtrips per day on average by Utility Block. Due to seasonal closures from weather conditions in the winter or fire conditions in the summer; however, it is highly unlikely that the daily average rate of pumice hauling would increase this much. Regardless, slight increases in pumice hauling traffic would likely be a result of this alternative.

Limiting pumice hauling to 6 roundtrips per day will result in possibly less traffic in the fall when Utility Block has historically hauled up to 8 roundtrips per day. This would result in slightly less traffic (2 roundtrips per day) on FR10 during one of the highest traffic periods of the year. This small positive impact would likely benefit hunters, firewood collectors, and others that use FR 10 on weekdays regularly in the fall.

Limiting pumice hauling to weekdays and excluding holidays would minimize traffic conflicts on FR 10. According to data collected on use of FR 10 (see table 3) as seasons progress towards the summer (when highest vehicular use is observed) vehicular use on FR 10 becomes concentrated during the weekends and on the southern portion of FR 10. Thus, though there would be additional traffic conflicts associated with approval of this alternative, these traffic impacts would affect a minority of weekday Forest users and would primarily occur near the entrance of FR 10, which is a portion of the road with wider road width and less elevation gain.

The roundtrip mileage from the proposed mine to the Utility Block processing plant is approximately 130 miles. At an estimated six trips per day for 250 days per year for the six-year operation period of the mine; an estimated 1,170,000 miles would be traveled during the proposed mine's operation. According to the National Highway Transportation System Administration's National Center for Statistics and Analysis, the average rate of large truck fatality accidents in 2003 was 2.19 per 100 million miles traveled. At the projected 1.17 million miles, the expected fatality accident rate would be 0.03 fatality accidents during the proposed mine's operation. The number of large trucks involved in injury accidents was 41 per 100 million vehicle miles traveled (National Highway

Transportation System Administration 2004). Thus, at the projected 1.17 million miles to be traveled through the operation of the mine, the expected injury accident rate would be 0.48 injury accidents during the six years of the proposed mine's operation.

Cumulative Effects

A net increase in pumice hauling by Utility Block under this alternative could result in cumulative impacts to traffic on FR 10 and SR 290 through Ponderosa for the six year period of the mine's operation. Present and foreseeable activities occurring on FR 10 and SR 290 such as the installation of a water line on FR 10 for the Community of Ponderosa, ongoing pumice hauling from the South Pit Pumice Mine, tree removal on southern portions of the FR 10 right-of-way, a prescribed burn by the Forest Service in Paliza Canyon and nearby areas, ongoing recreational use, the re-opening of the Paliza Group and Family Campgrounds in 2007, and bridge replacement and dam construction on SR 290 would be the main activities contributing to cumulatively to traffic impacts.

The installation of a drinking water distribution line for the Community of Ponderosa is currently under NEPA analysis by the Forest Service. If approved, implementation of this project would likely begin in late September and continue for two months for up to two consecutive years. Installation of the proposed water line would include trenching within a 300-foot length (at a time) on the western side of FR 10, effectively limiting traffic to one-way passage and periodically blocking traffic completely. In this situation, pumice hauling from the Utility Block proposed mine would be stopped completely or limited by traffic control provided during water line installation. This activity would result in traffic delays for all users on the southern three miles of FR 10 and could result in temporary closure of portions of FR 10 for up to one week for all users except water line installation equipment if it is determined that installation results in compromised driver safety.

Installation of this water line would reach to the southern portion of FR 10 and is not expected to cause traffic impacts on SR 290.

Ongoing pumice hauling from the South Pit pumice mine occurs periodically depending on the need for raw materials by the Copar processing plants in Española and San Ysidro. Both the proposed Utility Block mine and the existing Copar South Pit Pumice Mine haul pumice south on FR 10 and SR 290 through Ponderosa, potentially causing cumulative traffic impacts during periods when both operators are hauling at maximum rates. Since Copar currently derives most of its pumice from the El Cajete Mine, near Highway 4 on the Jemez Ranger District, the South Pit mine has not been regularly operated and there have been no reported traffic impacts from Utility Block operators or because of volume of pumice hauling trucks.

The net average increase of 1.5 pumice trucks per day could result in additional cumulative traffic impacts on FR 10 and SR 290 due to the increased volume of truck traffic on weekdays. These impacts are most likely to be concentrated during the summer months and especially the fall, when recreational use is high and pumice hauling has historically been the greatest. Increased pumice hauling

from this alternative can contribute cumulatively causing minor traffic delays for other users as passing pumice trucks require other users to stop or pull to the side of the road (on FR 10). Additionally, there would be an average net increase of 1.5 pumice trucks per day on SR 290 through Ponderosa.

Tree removal in the FR 10 right-of-way and prescribed burning in Paliza Canyon and nearby areas of the Forest would likely contribute to cumulative traffic impacts through the use of heavy machinery in the fall (September through November) and early spring (February to March 15) between 2006 and 2009. Impacts from these activities would be limited to FR 10, and are not likely to result in measurable cumulative impacts on SR 290. Prescribed burning activities near FR 10 would likely result in the temporary closure of this road, preventing the operation of pumice mines in the area and thus preventing traffic impacts. Tree removal activities and prescribed fire activities in other portions near Paliza Canyon, however, may result in concentrated use of FR 10 for access by fire engines and other heavy machinery for up to a week at a time in the early spring or fall. This would result in increased traffic on the southern portion of FR 10, which could temporarily affect recreational visitors and hunters' access to Forest areas adjacent to FR 10, FR 266, FR 271, FR 270, and FR 137.

The Paliza Group and Family Campgrounds are expected to re-open for public use after two years of construction before the summer of 2007. Thus, recreational use of the southern portion of FR 10 (where recreational use is thought to be primarily concentrated on FR 10) is expected to substantially increase in late spring through the fall, with a maximum of traffic on FR 10 near the Paliza Group and Family Campgrounds occurring during the summer months. This increased traffic will be concentrated in the southern three miles of FR 10 and will result in cumulative increases in total vehicular traffic when combined with net average increased pumice hauling under this alternative.

Since pumice hauling is limited to weekdays and excluded from holidays, cumulative traffic impacts will only affect those who use recreational facilities adjacent to FR 10 on weekdays. Since most recreational use occurs on weekends and holidays, pumice hauling combined with recreational use on the southern portion of FR 10 during the weekdays would affect a minority of Forest users through increased traffic on FR 10 and potential traffic delays as pumice trucks pass other vehicles on FR 10.

Bridge replacement on SR 290 near the southern portion of the Community of Ponderosa and dam repair adjacent to SR 290 near the northern terminus of the Community of Ponderosa would result in cumulative impacts to traffic on SR 290 at localized areas for short time periods. Though there has been no schedule set for either the bridge replacement or dam repair, these activities could begin as early as 2007 and could last through 2010. These activities would result in a greater increase of traffic by heavy machinery on SR 290, or in the case of the bridge replacement, impacts could include the construction of a temporary road and detours resulting in temporary traffic delays. Pumice hauling during bridge replacement and dam repair on SR 290 would cumulatively increase the concentration of heavy trucks present on SR 290 during construction activities. High concentrations of heavy machinery on SR 290 and delays caused by construction would result in more noise and greater traffic along SR 290 through the Community of Ponderosa.

In summary, this proposed alternative, which would increase net pumice hauling by an average of 1.5 roundtrips per day, would add cumulatively to traffic impacts such as noise, temporary delays, and potential safety concerns caused by planned activities on SR 290 and FR 10 between 2006 and 2010. The greatest impact would likely occur during weekdays of summer of 2007 through 2012 when recreational is expected to be highest and pumice hauling combined with other activities would result in regular use of FR 10 and SR 290. Additionally, pumice hauling operations during the fall would result in cumulative impacts to hunters, other projects on Forest Service Lands, and other forest users. Impacts in the fall would likely be more acute than in the summer, because the fall is when pumice hauling is at its peak and those who use the Forest in the fall are more likely to be present on weekdays. Cumulative traffic impacts are most likely to be concentrated in the southern 3 miles of FR 10 because this is where campgrounds are located, other Forest Service projects will be implemented, and where all vehicles must enter through for access to connecting Forest Service Roads in the Paliza Canyon and nearby areas.

Alternative 3 – Reduced Traffic

Under the Reduced Traffic Alternative pumice mining operations would be authorized up to four roundtrips per day on weekdays excluding Memorial Day, Labor Day, and Independence Day. Additionally, to prevent impacts to schoolchildren pumice hauling would be excluded between 7:30 a.m. – 8:30 a.m. and 3:00 p.m. – 4:00 p.m. on school days.

Under this alternative pumice hauling could increase from the current average of 2.6 roundtrips per day to an estimated average of 2.7 roundtrips per day (based on a limit of four roundtrips per day for 250 days of the year). Thus, there could be a net increase of 0.1 roundtrips per day on average by Utility Block over existing conditions. Due to seasonal closures from weather conditions in the winter or fire conditions in the summer; however, it is highly unlikely that the daily average rate of pumice hauling would increase this much. Rather it is likely that imposing a pumice hauling limit of four roundtrips per day would result in a net average decrease of pumice hauling by Utility Block.

Limiting pumice hauling to weekdays and excluding holidays would minimize traffic conflicts on FR 10. According to data collected on use of FR 10 (see table 3) as seasons progress towards the summer (when highest vehicular use is observed) vehicular use on FR 10 becomes concentrated during the weekends and on the southern portion of FR 10. Thus traffic impacts would affect a minority of weekday Forest users and would primarily occur near the entrance of FR 10, which is a portion of the road with wider road width and less elevation gain.

The roundtrip mileage from the proposed mine to the Utility Block processing plant is approximately 130 miles. At an estimated four trips per day for 250 days per year for the six-year operation period of the mine; an estimated 780,000 miles would be traveled during the proposed mine's operation. According to the National Highway Transportation System Administration's National Center for Statistics and Analysis, the average rate of large truck fatality accidents in 2003 was 2.19 per 100 million miles traveled. At the projected 0.78 million miles, the expected fatality accident rate would be 0.02 fatality accidents during the proposed mine's operation. The number of large trucks involved in injury accidents was 41 per 100 million vehicle miles traveled. Thus, at the projected

0.78 million miles to be traveled through the operation of the mine, the expected injury accident rate would be 0.32 injury accidents during the six years of the proposed mine's operation.

Cumulative Effects

Cumulative effects under the Reduced Traffic Alternative would be similar to those effects discussed under the proposed action. The primary difference would be that pumice hauling under this alternative would be limited to four roundtrips per day rather than six, possibly resulting in less intense traffic, noise, and potential safety impacts during periods of high traffic use such as in the fall and summer months.

3.3 Wildlife

This document includes analysis of effects on the following:

- Proposed, Endangered, Threatened and Sensitive Species
- Management Indicator Species
- Migratory Birds
- General Wildlife

3.3.1 Affected Environment

General Affected Habitat: The 5.7 acre project area and 0.5 acre access road (6.2 acre total) is located on a flat area in predominantly ponderosa pine. The understory is scattered ponderosa pine, sparse grasses and forbs. There are a few gambel oaks. Elevation is 8,040 to 8,068 feet. There are no streams or permanent water located in the project area. Downed wood is moderate in abundance. There is an old road through the middle of the site.

I. Proposed, endangered, threatened and sensitive (PETS) species

The Santa Fe National Forest Threatened and Endangered species list (USFS 2004), Southwestern Region Sensitive Species List (USFS 1999), and district maps and files were reviewed. The likelihood of occurrence for PETS species or their potential habitat within the allotment or in an adjacent area which could potentially be affected by projects in this analysis area is noted below.

Table 4. Potential for occurrence of PETS species in the Cerro del Pino pumice site

Species	Status*	Potential for occurrence
Bald eagle <i>Haliaeetus leucocephalus</i>	T	Possible transient roosting during migration

Mexican spotted owl <i>Strix occidentalis lucida</i>	T	Possible foraging habitat
Northern goshawk <i>Accipiter gentilis</i>	S	Potential roosting/foraging habitat present
Peregrine falcon <i>Falco peregrinus anatum</i>	S	No designated suitable breeding habitat in project area; access road for hauling goes through potential breeding habitat

* E = Endangered (federal) T = Threatened (federal) P = Proposed for federal listing

C = Candidate for federal listing S = Forest Service, Region 3, sensitive species

The proposed project area is outside of the range or contain no potential habitat for the following PETS species: Rio Grande silvery minnow, Pecos bluntnose shiner, Holy Ghost ipomopsis, western yellow-billed cuckoo, New Mexico meadow jumping mouse, swift fox, Goat Peak pika, boreal owl, white-tailed ptarmigan, Jemez Mountains salamander, northern leopard frog, Rio Grande chub, Rio Grande cutthroat trout, blue-black silverspot butterfly, hairless fleabane, Chiricahua dock, and Arizona willow.

Bald eagle (*Haliaeetus leucocephalus*)

The occurrence of breeding bald eagles in New Mexico is very limited. As of 2001, there were four bald eagle nests in NM, all on private land. Within Region 3, bald eagles nest on the Tonto, Coconino, Prescott and Apache-Sitgreaves National Forests in Arizona, and they winter throughout all 11 national forests in the region. Small numbers of eagles can be found wintering on all national forests in NM. The location and abundance of wintering eagles is dependent on food and availability of appropriate roosting and foraging habitat and can change year to year. In winter, the greatest number can be found along rivers and lakes; however, they can frequently be found in uplands where they use a variety of prey species, including prairie dogs (USDA 2004, pp. 152-156).

Affected habitat: There are no records of occurrence in or near any of the proposed project sites. There are no large water bodies to provide breeding/foraging habitat within or near the project site. Past records note that bald eagle occurrence is uncommon on the Jemez Ranger District. The Jemez Mountains do not contain known breeding habitat. Observations occur during the winter at various sites on the district. Recent observations include winter sightings along Forest Road 376, Fenton Lake, the Valles Caldera National Preserve and Jemez River valley. Wintering bald eagles near the Jemez Mountains are known to use Cochiti Lake (>15 miles from the project site) and the upper Chama River (>35 miles from the project site). Migrating/ wintering eagles could pass through

and roost, but it would be on a transient basis. The project site does not occur in any area that drains into identified bald eagle nesting habitat.

Mexican spotted owl (*Strix occidentalis lucida*)

The Mexican spotted owl (MSO) can be found in the forested mountains and canyons of central Colorado and southern Utah south through Arizona and New Mexico into Central Mexico. The owl's distribution in this range is not contiguous, but occurs in patches of suitable habitat. The MSO Recovery Plan divides the MSO range into six Recovery Units (RU). The Santa Fe National Forest occurs in the Southern Rocky Mountains-New Mexico RU, which has a fairly small portion of the known owl sites throughout its range. (USDA 2004c). MSOs use a variety of habitats but are typically associated with multi-canopied stands of mature mixed-conifer and ponderosa pine-Gambel oak forests. In the Jemez Mountains, most nests are on cliff ledges or cavities in steep-walled canyons.

Affected habitat: The project area is not located within an MSO PAC. It is about 0.3 miles from the boundary of the San Juan PAC (#100362) and about 0.9 miles from the suspected nest area within that PAC. The project area is a flat mesa in ponderosa pine forest with no riparian area, and therefore not in restricted habitat. The project site contains no breeding habitat, but would be considered foraging habitat. Surveys done in this area in the past for a drilling project associated with the pre-work for this pumice mine project, and for the Paliza prescribed burn, were negative (other than a response from the San Juan PAC owl at one calling point).

Critical habitat for the Mexican spotted owl

Cerro del Pino project area is not located with the boundaries of Critical Habitat for the MSO.

Southwestern Region Sensitive Species

Northern goshawk (*Accipiter gentilis*)

The northern goshawk reaches the southern limits of its nearctic breeding range in the highlands of Arizona, New Mexico and possibly western Texas southward to at least Jalisco, Mexico. The small New Mexico population occurs locally in mature coniferous forests of mountains and high mesas, and primarily at lower elevations (2800 to 5500 feet). The goshawk is a predator of small birds and mammals. Snags, downed logs, woody debris, openings, large trees, herbaceous and shrubby understories and interspersions of vegetation structure are important features contributing to the presence of prey populations (NMDGF 2005).

Affected habitat: The project area is at least 0.35 miles from the boundary of a goshawk post-fledgling family area (PFA). The project site is located on a flat mesa top of ponderosa pine and would not be considered high quality breeding habitat, but could be used for roosting and foraging. Existing vegetation structural stage (VSS) is estimated as VSS3/4, which means that it is at a mid-successional stage. Past surveys done in the this area were negative for goshawk presence.

Peregrine falcon (*Falco peregrinus anatum*)

The peregrine falcon was listed as an endangered species in 1970 after numbers of falcons had been reduced to a few hundred pairs in western U.S. and Mexico. Following a ban on the use of DDT and other chlorinated hydrocarbons, and successful captive breeding and release of over 6,000 falcons, there were over 2,000 pairs breeding each year across the U.S. The peregrine falcon was removed from the Federal Endangered species list in August 1999.

In New Mexico, breeding habitat is provided locally by cliffs in forested habitats in mountain and river canyons statewide. They prefer elevations from 6,500 to 8,599 feet but may be found from 3,500 to 9,000 feet. Data from NMDGF show that although productivity in the state had recovered from historic lows by the 1980s, it began trending lower after 1984. The goal for recovery is sustained occupancy of 85% of known territories. In New Mexico, pairs occupied 81% of known falcon territories in 2004. Occupancy increased; however, productivity was slightly below recent averages and below historic levels (Johnson and Williams, 2004).

Affected habitat: The project site is not within a designated suitable breeding habitat zone for peregrine falcons. There are no suitable breeding cliffs nearby. The project site could be used for transient foraging. The proposed route for hauling pumice goes through potential breeding habitat.

II. Management Indicator Species

A review of Management Indicator Species (MIS) for the Santa Fe National Forest (USDA 1995, page 96) shows the following MIS species have potential to occur on the site of this pumice mine project: **Merriams turkey, hairy woodpecker, mourning dove, Mexican spotted owl, and elk.** The project site contains no habitat for the pinyon jay, Rio Grande cutthroat trout or Rocky Mountain bighorn sheep. The Mexican spotted owl is discussed in more detail in the PETS section and will only be discussed briefly in this section. The Management Indicator Species Assessment for the Santa Fe National Forest (USFS 2003) contains more detailed habitat information and population trends for each species.

Merriam's turkey (*Meleagris gallopavo*)

Merriam's turkey is the most common subspecies of turkey. It is found in many mountainous areas of northern New Mexico. Surface water is a range requirement. Hens normally nest within ½ mile radius of water. The ponderosa pine is an essential component of its permanent habitat, and is utilized as a source of mast and as a favorite roosting tree. Turkeys forage in grasslands, brush communities, deciduous tree-brush and in ponderosa pine. They eat grasses and grasshoppers in the summer, and oak mast, piñon nuts, and mature ponderosa pine seeds in the fall. Tall grasses are eaten in the winter when the heavy snows come.

The SFNF as a whole contains approximately 1.3 million acres of suitable turkey habitat. The population trend for the Merriam's turkey is ranked as stable to slightly increasing on the Santa Fe NF level.

Because the project area is a dry flat mesa with no riparian area within about ½ mile, it is unlikely that this area would be used for nesting. Turkeys could roost or forage throughout this project area.

Hairy woodpecker (*Picoides villosus*)

Hairy woodpecker is a forest generalist which keys in on snags, down logs, and live aspen. Nests are primarily in trees averaging 17 inches diameter at breast height and approximately 60 feet high. Trees averaging 17 feet and down logs are important to support insect populations for foraging. Large trees which are future down logs and snags are maintained across the SFNF in accordance with the Forest Plan. There are approximately 900,000 acres of hairy woodpecker habitat available across the SFNF. The population of hairy woodpeckers is considered stable to increasing on the SFNF.

The 6.2-acre project area would be used for nesting/roosting/foraging by the hairy woodpecker. Based on the habitat available, hairy woodpeckers would be expected to be common in this area. Breeding Bird Survey (BBS) data for NM indicates a trend of about five percent increase in hairy woodpecker populations from 1980 to 2000 (Sauer and Hines 2001). Various surveys done on the Jemez Ranger District have recorded hairy woodpeckers (Dickson 2002; Fair 2002, 2004). They were common in surveys done in the Dome area (USFS 2002), on Lake Fork Mesa and Sandoval Ridge (USFS 2003).

Mourning Dove (*Zenaida macroura*)

The mourning dove is found across North America in many types of habitat including most forest types. It is widespread except in the Arctic and closed forests. Mourning doves are common to abundant in most counties in NM; nesting populations are stable or decreasing based on BBS in NM. The population trend on the SFNF is ranked as stable based on the statewide trend and BBS data in and adjacent to the Forest.

Throughout the SFNF, mourning dove habitat is abundant, approximately 989,993

acres. This species is primarily found in lower elevations of the Forest, however, they can occur in Douglas-fir, ponderosa pine, spruce-fir, aspen and piñon/juniper forest types. In all situations, abundant food and water must be available within 20-30 kilometers. Nests are either in small trees or on the ground. Water developments and underburning in ponderosa create favorable feeding areas.

This 6.2-acre project area would provide habitat for the mourning dove. Mourning doves have been recorded on various bird surveys on the Jemez District (Fair 2002, 2004; Dickson 2002; USFS 2003), and would be expected to use this area.

Rocky Mountain elk (*Cervus elaphus nelsoni*)

Rocky Mountain elk inhabit most forest types with good forage and cover. They utilize a variety of habitat types during the course of their lives. They appear to be extremely adaptable to both secondary successional and specific successional vegetation types. Certain types are of limited value to elk due to aspect, elevation, snow depth, lack of water availability and/or vegetation components.

The SFNF contains approximately 1,600,000 acres of elk habitat forestwide. The 6.2 acres of this project area would provide some foraging habitat, although because grass and forbs are sparse, this would not be of high quality so use would be transient.

Mexican spotted owl (*Strix occidentalis lucida*)

Approximately 303,000 acres of mixed conifer habitat are available across the SFNF as suitable habitat for the Mexican spotted owl. The population trend for the MSO is rated as stable to increasing on the Santa Fe National Forest.

III. Migratory Birds

On January 10, 2001, President Clinton signed EO13186 placing emphasis on conservation of migratory birds.

The Forest Service, Southwestern Region, currently analyzes effects (impacts) in the following manner:

- effects to Species of Concern listed by Partners in Flight
- effects to Important Bird Areas
- effects to important overwintering areas.

NM Partners in Flight considers eight risk factors in identifying conservation priority species: global abundance, NM breeding abundance, global breeding distribution, NM breeding abundance, threats to breeding in NM, importance of NM to breeding, global winter distribution, and threats on wintering grounds. Species with the highest risk factors are classified as “highest priority” for conservation action. This evaluation addresses general effects to migratory birds, and specific effects to highest priority species for the main habitat types found in

the project area.

Impacts to Partners in Flight priority birds: The priority bird populations and habitats established by New Mexico Partners in Flight for those habitats present in the project areas include:

- Ponderosa pine: flammulated owl, Virginia's warbler, Grace's warbler, greater pewee*, olive warbler*.

*The greater pewee, and olive warbler do not occur in northern New Mexico.

IV. General Wildlife

Affected Habitat: Based on the elevation, forest type, and topography, the general wildlife species expected to occur within the allotments include (among many others) mule deer, elk, coyotes, mountain lion, bear, bobcats, squirrels, bats, other small rodents, reptiles, and a variety of birds including turkey, hawks, owls, and songbirds. Because of the small size of this project area and the lack of water, it would be expected that this site would not provide high quality breeding habitat, but would be used for roosting and foraging for most species.

3.3.2 Environmental Consequences

Bald Eagle

Alternative 1 (No Action) would have no effect on the bald eagle. There would be no authorization of pumice mine activity. The 6.2 acres of ponderosa pine forest would remain intact. There would be no loss of perch/roost sites for migrating bald eagles. **Alternative 2 (Proposed Action), Alternative 3 (Reduced traffic)** may affect, not likely to adversely affect, the bald eagle. 6.2 acres of potential roost trees would be cleared over a period of six years. No more than three acres will be open for mining at any time. Reclamation of previously mined blocks will occur concurrently with the clearing and mining of new blocks. Short term, there will be noise and activity disturbance associated with chainsaw and equipment use to remove trees from the area. Any eagles in the area would be adults which would avoid this noise disturbance.

Long-term, there will be noise disturbance at the site related to the pumice mining—bulldozers, large trucks and other equipment on a daily basis (other than weekends and holidays); this noise would most likely affect roosting use for about a ¼ mile radius of the project site, depending on vegetation and topography, up to about 150 acres. The site will be reclaimed and will most likely remain in an open grassy stage for many years following the end of the pumice mining. Because this area or within ¼ mile radius of this area does not contain any large bodies of water that would be considered breeding or foraging habitat, eagle use of this area would be transient during migration. There would be roosting habitat available in other forested stands, so there would not be an impact to the eagle's ability to find

a roosting site outside of ¼ mile from the site.

Cumulative effects

There are no current or future projects that would contribute to noise/disturbance effects within ¼ mile radius of the proposed project site. Effects considered were those that would contribute to loss of roost trees within a two to three mile radius. Thinning projects in the Paliza Vegetation and Road Management project, Paliza Campground Timber Stand Improvement, and Pueblito Timber Sale removed/will remove large trees. Large trees will remain on site for roost/perch trees. FR 10 Tree Removal will remove large trees only within 15 feet of either side of FR 10. These projects have minimal impact on availability of roost trees. The proposed expansion of Southpit Pumice Mine will remove 100 acres of trees. Because of the large range of eagles, the expanse of the Jemez District available for roosting, and the transient use during migration, the combined loss of roost trees in these projects would not create an adverse impact, or result in inability to find roost/perch trees.

Mexican spotted owl

Alternative 1 (No Action) would have no effect on the MSO. There would be no removal of trees on this project site, thus, no disturbance associated with clearing this 6.2 acres. There would be no long-term impacts of noise and activities associated with mining pumice in this area. The foraging site would remain available for MSO use with no disturbance.

Alternative 2 (Proposed Action) may affect, not likely to adversely affect, the MSO. There will be no impacts to breeding habitat, however, foraging habitat may be affected. Short-term, there will be noise and activity disturbance associated with clearing the land. All activities associated with clearing the land and with mining pumice will occur during the day, therefore, the project site and adjacent forest would be undisturbed for night foraging.

Most pumice hauling would occur during the day when owls would not be foraging, however, early morning or late afternoon/evening hauling runs have potential to impact owls crossing FR10. This would be the same effect as current use; no increase in hauling is proposed. No more than three acres will be open for mining at any time. Clearing of the land will entail the trees and topsoil being removed (trees will be stockpiled around the edge of the mine site for later use during reclamation), leaving exposed pumice soil. This land surface would be unsuitable habitat for MSO prey species during the period of active mining.

Reclamation of previously mined blocks will occur concurrently with clearing and mining of new blocks. The clearing, active mining, and reclamation will occur over a period of six years. It can be assumed that one to 6.2 acres will be unsuitable for MSO prey and MSO foraging at any one time over that six years, and for a period of years following completion of the mining until land is suitably revegetated to support small rodent populations once again. The small area of foraging habitat impacted should not affect the ability of MSO to find prey. The affected area will most likely remain in an open, grassy state for many years

before beginning to be reclaimed again by forest. This open area would provide diversity of prey habitat within the adjacent forested area for the spotted owl.

Alternative 3 (Reduced traffic) may affect, not likely to adversely affect, the MSO. Effects would be the same as in the Proposed Action. Because there would be two fewer loads of pumice being hauled a day, there would be a less potential for trucks using the road late into evening when MSO would be foraging.

Cumulative effects

There are no current or future projects that would contribute to noise/disturbance effects within ¼ mile radius of the proposed project site. Effects considered were those that would contribute to impacts on foraging habitat within a two to three mile radius. Thinning and or prescribed burning in the Paliza Vegetation and Road Management project, Paliza Campground Timber Stand Improvement, Pueblito Timber Sale, and San Juan Prescribed Burn will provide more open, shrubby areas with overstory and midstory trees which will provide good quality foraging habitat. The proposed expansion of Southpit Pumice Mine will remove 100 acres of trees. It is anticipated that this proposal will be similar to other pumice mining, where only a small number of acres are open for mining at any one time, and then completed acres are reclaimed while new acres are being opened and mined. Therefore, following revegetation, reclaimed acres will be available for foraging. Because of the large range of owls, the expanse of the Jemez Ranger District available for roosting/foraging, the combined intermittent and temporary loss of forage areas will not result in inability of MSO to find undisturbed available hunting sites.

Critical habitat for the Mexican spotted owl

Alternative 1 (No Action), Alternative 2 (Proposed Action), Alternative 3 (Reduced Traffic) will have no effect on Critical Habitat for the Mexican spotted owl.

Cumulative effects

Because there is no Critical Habitat for the MSO located in the proposed project area, there is no contribution to cumulative effects.

Northern goshawk

Alternative 1 (No Action) will have no impact on the northern goshawk. There will be no short-term noise or activity disturbance from the clearing of the proposed project site, or long-term impacts of noise/activity disturbance from mining activities. There will be no short-term impacts on prey species. There will be no changes in VSS; there will be no conversion of 6.2 acres to VSS 1 (after reclamation) which could add prey diversity to the site. **Alternative 2 (Proposed Action); Alternative 3 (Reduced traffic)** may impact individual goshawks but there would be no decline in species populations or trend to Federal listing. There will be no impacts to breeding habitat, however, foraging habitat may be affected. Short-term, there will be noise and activity disturbance associated with clearing the land. No more than three acres will be open for mining at any time. However, the clearing of land will remove trees and soil surface leaving exposed pumice soil. This land surface would be unsuitable habitat for most goshawk prey species during the period of active mining. Long-term, reclamation of previously mined blocks will occur concurrently with clearing and mining of new blocks.

The clearing, active mining, and reclamation of the mine site will occur over a period of six years. It can be assumed that one to 6.2 acres will be unsuitable for goshawk prey and foraging at any one time over that six years, and for a period of years following completion of the mining until land is suitably revegetated to support small rodent and bird populations once again.

The Forest Plan goshawk guidelines (1996) for ponderosa pine note that VSS distribution should be 10% grass/forb/shrub (VSS1), 10% seedling-sapling (VSS2), 20% young forest (VSS3), 20% mid-aged forest (VSS4), 20% mature forest (VSS5), and 20% old forest (VSS6); opening size should be up to four acres with a maximum width of up to 200 feet, and that a group of reserve trees, three to five trees per group, will be left if the opening is greater than an acre in size. Two snags, three downed logs and five to seven tons of woody debris should be left per acre.

The proposed project will convert 6.2 acres of VSS 3-4 to VSS1, once reclamation is complete. It is expected that the proposed project will contribute to the desired condition of 10 percent of the landscape in VSS1.

These alternatives will not comply with Forest Plan goshawk guidelines (Forest Plan; Amendment #6, page 9) with respect to snags (2 snags/acre) and opening size (up to four acres). Because of the nature of this project, it is not within safety aspects to leave trees in the mined area because it would leave columns of pumice that could collapse. Therefore, specifications stated in the goshawk guidelines in the Forest Plan for snags and reserve trees are not feasible. Similarly, since the mine and access road encompasses a total acreage of 6.2 acres for both these alternatives, they would violate the opening size by 2.2 acres.

The area will be reclaimed following mining of each block; logs set aside during clearing would be scattered back on the site. Therefore, reclamation would restore

downed logs and woody debris to the site.

Long-term, the impacts of daily activity of mining pumice – noise and activity – can affect up to a ¼ mile radius around the project site. This would encompass about 150 acres. This would mean that goshawks would most likely avoid the specific area of disturbance (the mine site), but would also be limited for foraging in up to ¼ mile radius from the mine site depending on noise intensity, vegetation and topography. This disturbance radius does not extend into the goshawk PFA.

Daily activities of mining would impact the immediate site of one to two acres at a time, and a radius of up to about 150 acres surrounding the site. Because of the large foraging range of goshawks (approximately 6,000 acres), this would impact less than one percent of the foraging range. This impact would not affect the ability to find prey, because a large area would still be available for foraging. Long-term, the clearing and reclamation of this area would create a grassy opening which would attract more open grassland bird species – sparrows, etc. – and could increase diversity of prey available.

Cumulative effects

There are no current or future projects that would contribute to noise/disturbance effects within ¼ mile radius of the proposed project site. Effects considered were those that would contribute to impacts on roosting/foraging habitat within a two to three mile radius. Thinning and/or prescribed burning in the Paliza Vegetation and Road Management project, Paliza Campground Timber Stand Improvement, Pueblito Timber Sale, and San Juan Prescribed Burn will provide more open, shrubby areas with overstory and midstory trees which will provide good quality foraging habitat. The proposed expansion of Southpit Pumice Mine will remove 100 acres of trees. It is anticipated that this proposal will be similar to other pumice mining, where only a small number of acres are open for mining at any one time, and then completed acres are reclaimed while new acres are being opened and mined. Therefore, following revegetation, reclaimed acres will be available for foraging, with a change from forest birds to birds of more open, grassy habitat.

Because of the large range of goshawks, the expanse of the Jemez District available for roosting/foraging, the combined intermittent and temporary loss of forage areas will not result in inability of goshawks to find undisturbed available hunting sites.

Peregrine Falcon

Alternative 1 (No Action) would have no impact on the peregrine falcon. This alternative may increase potential for use of potential breeding habitat by reducing early morning disturbance of pumice truck traffic related to this pumice site. **Alternative 2 (Proposed Action)** may impact individual falcons, but there would be no decline in species populations or trend to Federal listing. There will be no direct impacts to breeding habitat, however, foraging habitat may be affected. Short-term, there will be noise and activity disturbance associated with clearing the land. No more than three acres will be open for mining at any time. However, the clearing of land will remove trees and soil surface leaving exposed pumice soil. This land surface would be unsuitable habitat for most falcon prey species during the period of active mining. Upon completion of mining, each block will be reclaimed concurrently with clearing and mining of new blocks.

The clearing, active mining, and reclamation will occur over a period of six years. It can be assumed that one to 6.2 acres will be unsuitable for falcon prey and foraging over that six years, and for a period of years following completion of the mining until land is suitably reclaimed to support bird populations once again. Long-term, foraging may be improved for the falcon with the conversion of the site from a forested stand to an open grassy area. Past discussions with raptor specialist, Terry Johnson, indicate that early morning runs of pumice trucks through suitable breeding habitat during vulnerable nesting periods may provide sufficient disturbance to disrupt nesting. Mitigation for a restriction of early morning hauling during this period will minimize this disturbance.

Alternative 3 (Reduced Traffic) would have the same impacts as Alternative 2. The reduction of a hauling limit of two pumice loads per day will decrease disturbance events by four times on FR10.

Cumulative effects

Those projects that could contribute to cumulative effects would be those that would increase existing and future traffic on FR 10. The proposed project would maintain the current use of FR10. Utility Block currently hauls six roundtrips/day. If the expansion for Southpit is implemented, Southpit would resume hauling up to six roundtrips/day (as they had in the past). This combined use will not exceed past use levels.

The FR 10 Tree Removal Maintenance could temporarily increase large truck use on FR 10 for about five months. FR 10 also receives heavy use from fuelwood collectors (pickup trucks with trailers), hunters, anglers, etc. that add to noise. The cumulative effects of current disturbance levels of traffic, campground use, etc. could contribute to unsuitable conditions for nesting habitat, although it is possible that some birds could become acclimated to activities and find a cliff site where disturbance levels would be more tolerable.

II. Management Indicator Species

Merriam's turkey

Alternative 1 (No Action) would result in no loss of habitat or and no impacts on forest-wide populations. There will be no short-term noise or activity disturbance from the clearing of the 6.2 acres, or long-term impacts of noise/activity disturbance for mining activities. This area would be available short and long term for roosting and foraging.

Alternative 2 (Proposed Action) would result in no loss of habitat for the turkey and no impacts on forest-wide populations. Long-term, following completion of mining, there would be an increase of habitat quality on the reclaimed project site. This increase in habitat quality is too small to have a significant effect on Forest-wide population and habitat trends. This project area would be unsuitable for roosting and foraging during the six years of active mining, and long-term, roosting habitat would be removed on the project site. Short-term, there will be noise and activity disturbance associated with clearing the land.

An area with a radius of up to about 150 acres surrounding the site could be affected by noise related to clearing the land and mining activity. No more than three acres will be open for mining at any time. However, the clearing of land will remove trees and soil surface leaving exposed pumice soil. This land surface would be unvegetated, and therefore, no seeds and few insects would be available. Long-term, reclamation of previously mined blocks will occur concurrently with clearing and mining of new blocks. The clearing, active mining, and reclamation would occur over a period of six years. It can be assumed that one to 6.2 acres will be unsuitable for foraging over that six years.

As each block is reclaimed and revegetated, seeds and insects would once again be available. It would be expected that these reclaimed acres would remain open and grassy for many years following the project. Although roosting opportunities will be decreased, the project area will provide seeds and insects for good quality foraging. Because the project affects a small area, this temporary loss of foraging, and long-term loss of roosting habitat would not impact population trends as other roosting and foraging habitat is available in the area. There is potential for direct impacts to turkeys along the FR 10 corridor from six round-trip pumice truck hauls per day. This is not increased over current conditions and would not impact forest-wide populations.

Alternative 3 (Reduced traffic) would result in no loss of habitat for the turkey and no impacts on forest-wide populations. Long-term, following completion of mining, there would be an increase of habitat quality. This increase in habitat quality is too small to have a significant effect on Forest-wide population and habitat trends. Impacts would be the same as in the Proposed Action; however, because of the reduction of two truckloads hauled per day, there would be a reduction in potential for direct impacts to turkeys and young when crossing roads.

Cumulative effects

Because the proposed project results in no long-term reduction of habitat or impacts to populations, there are no contributions to cumulative effects.

Hairy Woodpecker

Alternative 1 (No Action) would have no impacts on population trends or available habitat. There will be no short-term noise or activity disturbance from the clearing of the 6.2 acres, or long-term impacts of noise/activity disturbance for mining activities. There would be no reduction of available habitat. This area would be available short and long term for nesting, roosting and foraging.

Alternative 2 (Proposed Action), Alternative 3 (Reduced traffic) would have no impacts on population trends; long-term, there would be a 6.2-acre reduction in nesting/roosting/foraging habitat. This decrease in habitat is too small <0.01% to have a significant effect on Forest-wide population and habitat trends. Short-term, there will be noise and activity disturbance associated with clearing the land. An area with a radius of up to about 150 acres surrounding the site could be affected by noise related to clearing the land and mining activity. No more than three acres will be open for mining at any time. Clearing of the land will remove all trees; and logs set aside during clearing would be scattered back on the site to restore down wood.

The clearing, active mining, and reclamation of all 6.2 acres will occur over a period of six years. It would be expected that these reclaimed acres would remain open and grassy for many years following the project, therefore, large trees for nesting/roosting/grubbing would not be present long-term. The restored down wood would restore some foraging habitat. Because the project affects a small area (6.2 acres), this loss of 6.2 acres of habitat would not impact population trends as other habitat is immediately adjacent to this area.

Cumulative effects

Projects considered are those that would contribute to loss of nest cavity trees. Thinning projects in the Paliza Vegetation and Road Management project, Paliza Campground Timber Stand Improvement, and Pueblito Timber Sale removed/will remove some larger trees; however, large trees will remain on site for nesting/grubbing. The Paliza and San Juan prescribed burns will create more snags. FR 10 Tree Removal will remove large trees only within 15 feet of either side of FR 10. These projects have minimal impact on availability of nesting trees. The proposed expansion of Southpit Pumice Mine, if implemented, would remove 100 acres of trees, removing nesting habitat from that 100 acres.

Mourning dove

Alternative 1 (No Action) would have no impacts on population trends or available habitat. There will be no short-term noise or activity disturbance from the clearing of this site, or long-term impacts of noise/activity disturbance for mining activities. There would be no reduction of available habitat. This area would be available short and long term for nesting, roosting and foraging.

Alternative 2 (Proposed Action), Alternative 3 (Reduced traffic) would result

in no long-term loss of habitat for the mourning dove and no impacts on forest-wide populations. There will be slight improvement in foraging habitat which would be too small to have a significant effect on Forest-wide population and habitat trends. Nesting/roosting trees will be removed; however, the grassy open habitat that will exist post-project will provide improved grassy foraging habitat. Short-term, there will be noise and activity disturbance associated with clearing the land. An area with a radius of up to about 150 acres surrounding the site could be affected by noise related to clearing the land and mining activity. Clearing of the land will remove all trees.

The clearing, active mining, and reclamation will occur over a period of six years. It would be expected that these reclaimed acres would remain open and grassy for many years following the project, therefore, large trees for nesting and roosting would not be present long-term; however, revegetation of the site would restore seeds and insects to the site. Because the project affects a small area, this loss of nesting/roosting habitat would not impact population trends as other habitat is immediately adjacent to this area.

Cumulative effects

Because the proposed project results in no long-term reduction of habitat or impacts to populations, there are no contributions to cumulative effects.

Rocky Mountain Elk

Alternative 1 (No Action) would have no impacts on population trends or reduction in available habitat. There will be no short-term noise or activity disturbance from the clearing of the 6.2 acres, or long-term impacts of noise/activity disturbance for mining activities. There would be no reduction of available habitat. This area would be available for short and long term grazing. Because currently grass and forbs are sparse on the site, grazing is limited. This alternative would not open the site and increase grass/forbs for grazing.

Alternative 2 (Proposed Action) would result in no loss of habitat for the elk and no impacts on forest-wide populations. Long-term, following completion of mining, there would be an increase of grazing quality. This increase in habitat quality is too small (<0.01%) to have a significant effect on Forest-wide population and habitat trends. This project area would be unsuitable for foraging over six years of active mining. Short-term, there will be noise and activity disturbance associated with clearing the land. An area with a radius of up to about 150 acres surrounding the site could be affected by noise related to clearing the land and mining activity. No more than three acres will be open for mining at any time. However, the clearing of land will remove trees and soil surface leaving exposed pumice soil. This land surface would be unvegetated, therefore, unsuitable for grazing. Long-term, reclamation of previously mined blocks will occur concurrently with clearing and mining of new blocks. Reclamation would include replacement of salvaged topsoil, and revegetation with a seed mix approved by SFNF.

The clearing, active mining, and reclamation will occur over a period of six years.

It can be assumed that one to 6.2 acres will be unsuitable for grazing at any one time over that six years. As each block is reclaimed and reseeded, grass would be more abundant than before the project, therefore, grazing use of this area would be increased post-project. It would be expected that these reclaimed acres would remain open and grassy for many years following the project, therefore long-term grazing would be improved. Because the project affects a small area, short-term disturbance and loss of grazing would not impact population trends as high quality forage does not currently occur here.

Alternative 3 (Reduced traffic) would result in no loss of habitat for the elk and no impacts on forest-wide populations. Long-term, following completion of mining, there would be an increase of habitat quality on the reclaimed site. This increase in habitat quality is too small (<0.01%) to have a significant effect on Forest-wide population and habitat trends. Impacts would be the same as in the Proposed Action; however, because of the reduction of two truckloads hauled per day, there would be a slight reduction in potential for direct impacts on the roadways.

Cumulative effects

Because the proposed project results in no long-term reduction of habitat, there are no contributions to cumulative effects.

Mexican spotted owl

Although there is foraging habitat available on the project site, there is no mixed conifer habitat present for nesting or roosting. Therefore, there will be no reduction of available mixed conifer habitat resulting from implementation of this project and no effect on population trend for the Mexican spotted owl. Long-term, this project will remove ponderosa pine forest which will be replaced with grass/shrub vegetation which will provide habitat for prey species of the spotted owl.

Cumulative effects: Because the proposed project does not remove mixed conifer habitat, there is no contribution to cumulative effects on conifer habitat.

III. Migratory Birds

Alternative 1 (No Action) would have no impacts on overall populations of any migratory bird species or habitat. There will be no short-term noise or activity disturbance from the clearing of the project site, or long-term impacts of noise/activity disturbance for mining activities. There would be no reduction of available habitat. This area would be available short and long term for nesting, roosting and foraging.

Alternative 2 (Proposed Action) would not cause any decline in overall species populations. There would be a reduction of habitat for birds that nest, roost and forage in trees; post-project habitat would be created for birds preferring open, grassy habitat. Impacts that could occur from implementation of this project include disturbance from equipment noise and human activity during both clearing of the site and during mining activity. Nest trees would be removed over the project site; direct impacts would occur if trees were cut during the breeding

season; mitigation that no tree removal will occur between March 1 and July 31 will greatly reduce those impacts. **Alternative 3 (Reduced Traffic)** would have similar effects to Alternative 2. Because hauling would be reduced by two truckloads per day, potential would be reduced for direct impacts on birds in the road corridor.

Cumulative effects

Projects considered are those that would contribute to loss of nest trees. Thinning projects in the Paliza Vegetation and Road Management project, Paliza Campground Timber Stand Improvement, and Pueblito Timber Sale removed/will remove some larger trees; however, large trees will remain on site for nesting. The Paliza and San Juan prescribed burns will create more snags. FR 10 Tree Removal will remove large trees only within 15 feet of either side of FR 10. These projects have minimal impact on availability of nesting trees. The proposed expansion of Southpit Pumice Mine, if implemented, would remove 100 acres of trees, removing nesting habitat from that 100 acres, also converting that site from habitat from tree-nesting/foraging species to birds of open, grassy habitat.

Important Bird Areas: There is no designated Important Bird Area (IBA) affected by the project. The nearest IBAs to the project site are:

- Golondrino Mesa - >40 miles
- Chama River Gorge from El Vado to N. Abiquiui Reservoir - >30 miles
- Caja del Rio (BLM) - >15 miles
- Santa Fe Canyon Preserve (TNC) - >40 miles
- Randall Davey Center, Santa Fe - >40 miles
- Santa Fe River (BoR) (La Bajada/Cochiti Springs) - >20 miles

Overwintering areas: Many important overwintering areas are large wetlands. Important overwintering areas recognized on the Forest include the Rio Chama and Rio Grande corridor.

This area is not recognized as an important overwintering area because significant concentrations of birds do not occur here and no unique or high diversity of birds winter here.

IV. General Wildlife

Alternative 1 (No Action): There would be no effect on wildlife. There would be no removal of trees on this project site, thus, no disturbance associated with clearing the site. There would be no long-term impacts of noise and activities associated with mining pumice in this area. Because mining would not be continued, there would be reduced traffic on FR10 that would reduce potential for direct impacts to wildlife crossing FR 10 and noise disturbance to wildlife along the road corridor. There would be no conversion of this site to open grassy condition which would add to habitat diversity in the area.

Alternative 2 (Proposed Action): There may be impacts on individuals, but no decrease in overall populations or trend to Federal listing. Short-term, there will be noise and activity disturbance associated with clearing the land. Direct impacts will occur to burrowing species from clearing of trees and topsoil. An area with a radius of up to about 150 acres surrounding the site could be affected by noise related to clearing the land and subsequent equipment use for mining activity. Direct impacts to wildlife could occur from six round-trips per day on FR 10 for hauling pumice. No more than three acres will be open for mining at any time. However, the clearing of land will remove trees and soil surface leaving exposed pumice soil. This land surface would be unvegetated, and therefore, unsuitable for various wildlife food items--grass, forbs, seeds, insects. Also, there will be no cover from predators. Long-term, reclamation of previously mined blocks will occur concurrently with clearing and mining of new blocks.

The clearing, active mining, and reclamation would occur over a period of six years. It can be assumed that one to 6.2 acres will be unsuitable for wildlife use at any one time over that six year period. As each block is reclaimed and revegetated, food and cover would once again be available. It would be expected that these reclaimed acres would remain open and grassy for many years following the project. Therefore, large roosting trees would not be present long-term; however, the reclaimed project site would provide some diversity in habitat within the forested stand.

Alternative 3 (Reduced traffic) Impacts would be the same as in the Proposed Action; however, because of the reduction of two round-trip truckloads hauled per day, there would be reduced potential for direct impacts to wildlife on FR 10.

Cumulative effects

There are no on-going or proposed projects within ¼ mile radius of this project that would contribute to noise or activity disturbance. Pumice hauling on FR 10 will not increase over the current use with combined use by Utility Block and Southpit. There will be some project-related increase in vehicle use for Paliza prescribed burning, and FR 10 tree removal maintenance which could temporarily increase potential for impacts to wildlife along the road corridor.

3.4 Soil and Water Resources

This section will discuss existing soil, surface water and groundwater conditions at the proposed project area and then will discuss environmental consequences to each of these resources for each of the proposed alternatives.

3.4.1 Affected Environment

Soil

The 5.7-acre Cerro del Pino pumice mine site is composed of one soil type described in the Terrestrial Ecosystem Survey of the Santa Fe National Forest as Map Unit 631 (USFS 1993). This map unit is a Mollic Eutroboralf. This soil type is a deep, very cindery, sandy loam. The soil in this area developed in place from a bedrock of tuff. It has a moderate erosion hazard rating and is considered to

have low potential for mass wasting (erosion caused by gravitational pull).

Surface Water

The proposed Cerro del Pino pumice mine site is within the 5th Code Middle Jemez River Watershed (HUC 1302020203). This watershed is part of the larger 4th code Jemez Watershed (HUC 13020202). The proposed project area is approximately 0.5 miles due east of San Juan canyon. The stream in this canyon is not listed on the 2004 State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Report. That means that this stream has not been listed as impaired for any water quality parameters.

According to the Santa Fe National Forest's Geographical Information System (GIS) database, San Juan Canyon does not support riparian vegetation near the project area. It is likely that dispersed pockets of riparian plants do occur within San Juan Canyon in this area; however, they are probably isolated and are very limited by their surrounding soils. Riparian areas are identified by using the Santa Fe National Forest's Terrestrial Ecosystem Survey to locate complexes of community types and/or subseries communities that meet the definition of riparian area, specifically an area with a perennial or intermittent stream, hydrophytic plants, and hydric soil.

Groundwater

The proposed Cerro del Pino mine would be located above a deep aquifer identified in South Mountain Rhyolite. This aquifer sits in rhyolite material 200 to 300 feet below overlying clay paleosol and pumice materials (Self and Wolff 1988). Tritium dating of the water in this aquifer in nearby residential wells indicates that the water has been underground for at least 30 years and is thought to come from the higher peaks surrounding the Valle Grande on the Valles Caldera National Preserve (Colpitts 1994).

Water flow in the deep aquifer is probably controlled by fractures in the rhyolite. Field observations indicate that these fractures do not penetrate overlying materials such as pumice. In other words, though the pumice material is highly heterogenous and may seem porous, there is apparently a very small to insignificant water flux through the pumice material to the underground aquifer which runs under the proposed project area (Colpitts 1994).

3.4.2 Environmental Consequences

Soil

Alternative 1 (No Action). There would be no effects to soils from Alternative 1.

Alternative 2 (Proposed Action) and Alternative 3 (Reduced Traffic) The soil in the proposed project area would be converted from a well developed productive soil to a young soil due to the changes in soil structure and nutrient balance resulting from stripping, stockpiling, and re-spreading activities. However, because of the very small area impacted plus the mitigations of stockpiling in situ and the native seeding combined with mulching, the effects to the soil resource should be limited. Although revegetation would stabilize the area and minimize loss of soil productivity, restoration of full soil productivity will take many years. Therefore, the loss of soil productivity is considered to be an irreversible impact to the five acre project site that cannot be avoided.

Cumulative Effects

The current mining operations in the area plus the proposed expansion of the Southpit Pumice Mine would result in further loss of soil productivity in the watershed. However, reclamation activities are required for each of these activities which will result in the restoration of soil productivity on each site in the coming years.

Surface Water

Alternative 1 (No Action). There would be no effects to surface water resources from Alternative 1.

Alternative 2 (Proposed Action) and Alternative 3 (Reduced Traffic). The surface water 0.5 miles west of the proposed project area would not be affected from this project because of design criteria requiring internal drainage and no on-site stockpiling of materials. It is possible that a small amount of sediment might be moved off the project site as a result of proposed mining activities; however, it is highly unlikely that this sediment would reach San Juan Canyon.

Cumulative Effects

It is possible that the San Juan Mesa Prescribed Burn and the Paliza Prescribed Burn has/may elevated the amount of sediment deposited into San Juan Canyon. However, this amount would be extremely minimal due to back-burning operations that were conducted or will be conducted away from the stream.

Groundwater

Alternative 1 (No Action). Since there would be no mining activities under this alternative there would be no potential for effects to groundwater resources from Alternative 1.

Alternative 2 (Proposed Action) and Alternative 3 (Reduced Traffic). Under both of these alternatives mining activities would occur on 5.7 acres to extract

pumice materials. Pumice extraction would occur from approximately 10 to 15 yards below the ground surface, but would not go below 30 yards (90 feet).

Given this depth of pumice extraction and characteristics of the aquifer, it is highly unlikely that the proposed pumice mine will have any adverse effect on the recharge of the deep aquifer. The aquifer is overlain by approximately 200 feet of mostly impermeable coarse pumice and clay paleosol materials that would prevent flow into the aquifer from the proposed mine site.

In addition to the onsite materials that would prevent water flux with the aquifer, project design criteria would require that no fuel or oil materials be stored on-site and that spill kits are required on-site to contain spilled materials such as petroleum should a spill occur.

Cumulative Effects

Nearby pumice mines including the El Cajete Pumice Mine to the north and the Southpit Pumice Mine to the north and east are at least partially located in the same aquifer. Given that none of these projects are thought to affect groundwater resources and that data gathered from nearby wells has not shown any impacts to groundwater resources, no cumulative effects are expected to result from either of the proposed alternatives.

3.5 Heritage Resources

3.5.1 Affected Environment

The project area was previously surveyed in 1990 as part of the Paliza Canyon Area survey (Hill 1990) and in 1993 as part of the Los Griegos Diversity Unit II survey (Nightengale and Peterson 1993). During the course of these surveys no sites were identified in the proposed project area. The proposed project area and surrounding areas were again surveyed by archeologists on November 11, 2001. These surveys covered the project area and surrounding areas around FR10 for a total of 13.3 acres. Again no sites were observed.

3.5.2 Environmental Consequences

Alternative 1 (No Action), Alternative 2 (Proposed Action), and Alternative 3 (Reduced Traffic) would have no effect given surveys of the proposed project area and surrounding areas resulted in a finding that there are no heritage resource sites located in the project area.

Since none of the alternatives are expected to have any impact, there would be no cumulative effects to heritage resources.

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:

ID TEAM MEMBERS:

Team Member	Position	Contribution/Role
John Peterson	Jemez District Ranger	Responsible official
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Jo Wargo	Jemez Ranger District Wildlife Biologist	Wildlife analysis
Erica Nevins	Jemez and Cuba Ranger District Hydrology Specialist	Soil and Surface water resources analysis
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Larry Gore	Santa Fe National Forest Geologist	Proposed Action and editor
Sean Ferrell	Santa Fe National Forest Fisheries Biologist	Rio Grande cutthroat trout and Rio Grande chub analysis

FEDERAL, STATE, AND LOCAL AGENCIES:

- US Fish and Wildlife Service
- New Mexico Department of Game and Fish
- New Mexico Environment Department
- New Mexico Department of Transportation
- New Mexico Energy, Minerals, and Natural Resources Department

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Appendix 1

Reclamation Plan for the Cerro del Pino Mine

Site Description

The mine is proposed on a gentle (9 to 17 degree), westerly-facing slope currently vegetated primarily with ponderosa pine. The mine encompasses an area of 5.7 acres with a temporary road that adds 400 linear feet (or ½ acre) to the project area. There are no major drainages crossing the proposed mine area. The site is easily accessed from Forest Road 10.

Site Preparation

Prior to mining, the standing trees knocked over with roots attached (according to timing restrictions: outside of March 1 to July 31) and stacked around the upper edge of the mine site and along the access road. After the trees have been removed, the soil will be stockpiled as berms around the edges of the disturbed area.

While mining is ongoing, these berms will prevent runoff from the site. Waterbars and/or other preventative measures will be installed on the temporary access road to prevent runoff and unauthorized use of the road.

After the soil has been stripped, stockpiled, and the access road has been constructed, mining will begin. Estimated mine depth is less than 15 feet. As an area is mined out, the working face will be sloped to no more than a 3:1 (horizontal: vertical) slope.

At the conclusion of mining, the site will be reshaped to approximate the surrounding topography, with a sediment basin above Forest Road 10 to prevent off-site sedimentation. The stockpiled soil will be spread over the entire disturbed area. The access road will be reshaped, ripped (tilled or otherwise disturbed to prepare for plant germination), and revegetated to blend with the surrounding topography.

Seeding

Seed Mix. A seed mix consisting of at least five grass species and three forbs/shrubs from the following list will be applied by broadcast seeding in the Fall.

Common Name	Species	lbs/acre PLS
Grasses		
Mountain muhly	Muhlenbergia montana	2
Junegrass	Koeleria macrantha	0.5
Arizona fescue	Festuca arizonica	1
Pine dropseed	Blepharoneuron tricholepis	5

Squirreltail	Elymus elymoides	4
Indian ricegrass	Oryzopsis hymenoides	3
Sand dropseed	Sporobolus cryptandrus	2
Mountain brome	Bromus carinatus	1
Sideoats grama	Bouteloua curtipendula	2
Western wheatgrass	Agropyron smithii	4
Forbs and Shrubs		
American vetch	Vicia americana	1
Utah sweetvetch	Hedysarum boreale	2
Golden banner	Thermopsis montana	3
Currant	Ribes cereum	4
Woods rose	Rosa woodsii	4
Mountain mahogany	Cercocarpus montanus	1.5

Application of Seed.

- Seeds may be applied by broadcast seeding
- Ensure seed mixes are certified weed-free. Seed mix and its application should comply with the requirements of all federal statutes and regulations governing seeds, plants, and weeds. These requirements include but are not limited to: the Noxious Weed Control Act, the Federal Seed Act and Amendments, and all other rules and regulations pertaining to these laws.
- Provide certification substantiating that material complies with specified requirements by submitting seed bag tags and copies of seed invoices identified by project name.
- Obtain native grass seed from sources in New Mexico or surrounding states
- Do not seed during windy weather, or when topsoil is dry, saturated, or frozen.
- Immediately following seeding operation, lightly rake seedbed or loosen with a chain harrow to provide approximately ¼ inch of soil cover over most of the seed.
- Prohibit vehicles and other equipment from traveling over the seeded areas. Signs will be posted and other materials may be used (boulders or downed logs) in the reclaimed roadways to discourage travel into the reclaimed area. Forest Service will provide materials for signing.

Mulching and Erosion Control

Straw mulch is appropriate for slopes at or flatter than 2:1. Straw shall be from oats, wheat, rye, barley, or rice that are free from noxious weeds, mold, or other objectionable material.

- Apply straw mulch at a minimum rate of 1.5 tons per acre of air-dry material.
- Spread mulch uniformly over the area either by hand or by mechanical means to achieve 80 percent ground cover.
- Depth of applied straw mulch shall not exceed three inches.
- Do not mulch when wind velocity exceeds 10 mph.
- If straw mulched areas will not stay correctly anchored, crimping or hydraulic mulch wood fibers with tackifier may be used.
- Prohibit foot/vehicle traffic from hydraulically mulched areas.

Monitoring and Maintenance

The Forest Service will monitor the site until acceptable re-vegetation has occurred to minimize erosion and ensure noxious weeds do not become established in the disturbed area. Acceptable re-vegetation will consist of a minimum of 50% ground cover (live vegetation or vegetation litter) after at least three growing seasons.

- Utility Block, Inc. will be responsible for noxious weed control, maintaining posted signs, repairing excessive erosion, and re-seeding, mulching, or installing other erosion control devices if necessary until the reclamation is accepted by the Forest Service.
- Should excessive erosion develop due to steep slopes preventing revegetation, use erosion control blankets over native grass seeding or other measures such as bonded fiber matrix or watering, or the Forest Service may prescribe other measures.
- Reseed unvegetated areas greater than 10 square feet in area.
- After completion of reclamation, ensure the area is clear of excess soil, waste material, debris and objects that may hinder maintenance and detract from the appearance of the site.