

**Project Title:** Kenney Flats Fuels Reduction and Ponderosa Pine Restoration Project

**Location:** Pagosa Ranger District, San Juan National Forest

**Responsible Agency:** USDA Forest Service

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### ***ABSTRACT***

This Environmental Assessment (EA) documents the environmental analysis for the proposed Kenney Flats Fuels Reduction and Ponderosa Pine Restoration Project in Archuleta County, Colorado. The Kenney Flats landscape assessment process occurred from May - July 2002, prior to the development of this project's proposal. This assessment involved a series of public meetings and field trips and resulted in the development of desired future condition goals for the Kenney Flats area. Initial scoping for this project occurred from 8/26/02 – 9/13/02. Public field trips to the proposed project area were held in October 2002.

The proposed action would restore approximately 3,826 acres to Condition Class 1, including thinning 3,388 acres of ponderosa pine and warm-dry mixed conifer and mowing 438 acres of Gambel oak and ponderosa pine. The proposed action would thin between 12.5 and 13.5 million board feet of generally small diameter material. The project could require the construction of approximately 3.5 miles of temporary roads, reconditioning 8.9 miles of existing roads and reconstruction of 2.4 miles of roads. The No Action alternative and three action alternatives have been analyzed and the environmental effects documented in this EA.

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## CHAPTER 1 – INTRODUCTION

### Document Structure

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

*Chapter 1, Introduction:* This section includes information on the history of the proposed project, the purpose of and need for the project, a description of desired future conditions, and the agency's proposed action for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.

*Chapter 2, Alternatives:* This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public, Forest Service, and other agencies. This discussion also includes possible mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.

*Chapter 3, Affected Environment and Environmental Consequences:* This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource area. Within each resource area, the affected environment is described first, followed by a discussion of alternatives.

*Chapter 4, Consultation and Coordination:* This section provides a list of preparers and agencies consulted during the development of the EA.

*Chapter 5, Bibliography:* This section provides the source of references used in the development of the EA.

*Chapter 6, Glossary:* This section provides definitions for technical terms, federal acronyms, and regulatory terminology.

*Appendices:* The appendices provide more detailed information to support the analyses presented in the EA.

Additional documentation, including more detailed analyses of project area resources, may be found in the project planning record located at the Pagosa Ranger District office in Pagosa Springs, Colorado.

## Background

The following background information is taken from the Forest Service publication *Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy*, October 2000 (USDA Forest Service, 2000) also known as the *National Fire Plan*.

“The 2000 fire season was undoubtedly one of the most challenging on record. As of early October, more than 6.8 million acres of public and private lands burned – more than twice the 10-year national average. The magnitude of these fires is the result of two primary factors: a severe drought, accompanied by a series of storms that produced thousands of lightning strikes followed by windy conditions; and the long-term effects of almost a century of aggressively suppressing all wildfires that has led to an unnatural buildup of brush and small trees in our forests and rangelands.”

“Operating principles directed by the Chief of the Forest Service in implementing this report include: firefighting readiness, prevention through education, rehabilitation, hazardous fuel reduction, restoration, collaborative stewardship, monitoring, jobs, and applied research and technology”.

This proposal is focused on addressing primarily three of the principles:

**The hazardous fuel reduction** portion of this strategy called for the Forest Service to; “Assign highest priority for hazardous fuels reduction to communities at risk, readily accessible municipal watersheds, threatened and endangered species habitat, and other important local features, where conditions favor uncharacteristically intense fires.”

**Restoration** directed the agencies to “restore healthy, diverse, and resilient ecological systems to minimize uncharacteristically intense fires on a priority watershed basis...”

**Collaborative stewardship** directed that we “focus on achieving the desired future condition on the land in collaboration with communities, interest groups, and state and federal agencies. “

To accomplish this direction, the Forest Service worked with the Office of Community Service to lead an effort with citizens and other agencies to identify priority areas for hazardous fuel reduction. The *Archuleta County Community Fire Plan* (Fort Lewis College, et al. 2002), as a component of the *National Fire Plan*, is meant to help coordinate fire readiness efforts between local communities and federal agencies through four major goals:

- Ensure firefighting resources;

- Rebuild communities and ecosystems damaged by the fires of 2000;

- Thin vegetation in areas that are adjacent to public lands;

- Help local residents to reduce fire risk and improve fire protection.

The Pagosa Ranger District resource specialists also analyzed the district to determine priority areas for ecological restoration, based on departure from historic range of variation in terms of fire behavior and intensity and vegetative structure. Based primarily on determination of the need for ecological restoration, concerns for fuel hazard reduction, gentle terrain, feasibility of prescribed fire treatments, and existing road access, district specialists determined that Kenney Flats landscape area was a high priority area.

## Condition Class

The Pagosa Ranger District staff specialists prepared the *Kenney Flats Landscape Assessment*, in May 2002. Through the assessment, fire Condition Classes were identified.

The following describes the concept and specifics of condition class and is followed by a map depicting the distribution and extent of condition classes currently existing in the Kenney Flats analysis area.

Condition Class is defined in terms of an area's departure from the historic fire regime, as determined by the number of missed fire return intervals – with respect to the historic fire return interval and the current structure and composition of the system resulting from alterations to the disturbance regime. The relative risk of fire-caused losses of key components that define the system increases for each respectively higher numbered condition class.

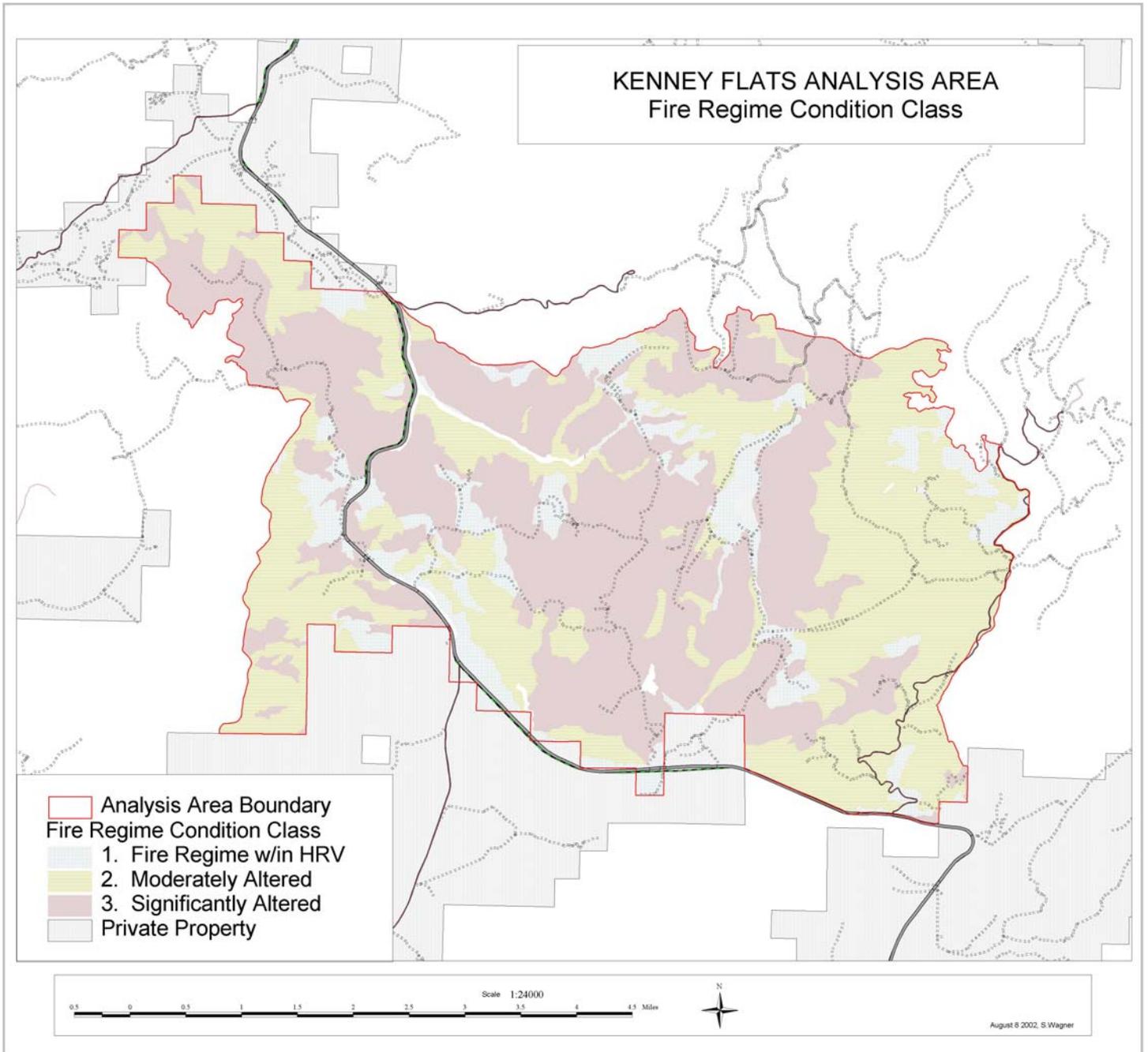
Condition Class 1 - areas where fire regimes are within an historical range and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within an historical range.

Condition Class 2 - areas where fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range.

Condition Class 3 - areas where fire regimes have been significantly altered from their range. The risk of losing key ecosystem components is high. Frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been significantly altered from historical ranges.

*Figure 2, Condition Class Map*, shows the current condition classes in the Kenney Flats Analysis Area. There are 7,206 acres of Condition Class 3 in the analysis area, 6,295 acres of Condition Class 2 and 2,148 acres of Condition Class 1.

Figure 1 Condition Class Map



### Desired Future Condition

To further the goals of collaborative stewardship, desired future conditions for Kenney Flats were developed during scoping for this project in 2002. These following statements are a product of a collaborative effort between interested community members and Forest Service resource specialists.

Desired future conditions related to ponderosa pine stand structure include:

- Less competition between trees in dense stands, with decreased stress and increased vigor;
- Less competition induced mortality, particularly in larger, older trees;
- Forests that are less susceptible to bark beetle attack;
- Improved size and age class diversity;
- More openness and increased amounts of herbaceous cover in the understory of pine stands;
- No further decline in large Gambel oak;

Desired future conditions related to changes in fire return intervals include:

- More acres in Condition Class 1, with fire playing a more active role in maintaining forest conditions similar to those that existed under the historic fire regime. Fire size, intensity and severity are more similar to that expected under the historic fire regime.
- The amount of ground fuels and ladder fuels is more reflective of what would have existed under the historic fire regime. Crown base heights have been raised;
- There is a lower risk of stand replacing wildfires and a reduced risk to firefighters, the public and property from wildfires.

Desired future conditions related to wildlife and watershed concerns include:

- Increased wildlife habitat diversity in ponderosa pine stands by having more age and size class diversity in pine stands across the landscape, more large trees and less uniform pine stands;
- An adequate number of snags in the area to provide for wildlife habitat;
- Adequate vegetative cover to prevent degradation of hillsides and drainages;
- Stable, well vegetated gully and headcuts with minimal to no active erosion.

### Purpose of and Need for Action

The Kenney Flats project is proposed at this time to respond to goals and objectives of the *National Fire Plan* (USDA Forest Service 2000), the *Archuleta County Community Fire Plan* (Fort Lewis College, et al. 2002), the *Amended Land and Resource Management Plan for the San Juan National Forest* (Forest Plan) (USDA Forest Service 1992) and the Kenney Flats Landscape Assessment.

This proposed action is needed because existing conditions vary from desired conditions and indicate a need for changes in ponderosa pine stand structure, reduced forest fuel loading; reduced risk of stand replacing wildfire; reduced risk to life, property and natural resources; and improved habitat for many native wildlife species.

There is a need to restore ponderosa pine forests in the Kenney Flats Analysis Area so that their forest structure and fuels structure more closely resembles that found under historic conditions (Forest Plan pgs. III-35 (03) (03b) (03c) (03d) (08d), III-11 (01c), III-84 (01), and *National Fire Plan* pgs. 6-10).

The purpose is to effect an immediate change in fire behavior, to reduce rate of spread and intensity, to maintain Condition Classes that support desirable fire behavior and increase forest and ecosystem diversity and resilience to disturbance. As tied to needs described above, the corresponding purpose of the proposed action will be to:

- Reduce densities in ponderosa pine stands;
- Increase vigor and decrease stress to trees in ponderosa pine forests;
- Improve size and age class diversity in ponderosa pine stands;
- Increase openness and increase amount of herbaceous cover;
- Reduce the fuel loading;
- Raise crown base height;
- Maintain large Gambel oak within the Kenney Flats Analysis Area;
- Better insure public and firefighter safety;
- Reduce wildland fire costs, losses and damages.

### **Proposed Action**

The action proposed meets the purpose and need by reducing fuels and restoring ponderosa pine over approximately 3,826 acres of National Forest System Land by means of prescribed fire, mechanical mowing and thinning of wood fiber. Depending on whether thinned material is treated on-site or removed it may be necessary to recondition between 8 to 10 miles of roads, reconstruct between 2 to 4 miles of existing roads and to construct between 3 to 5 miles of temporary roads.

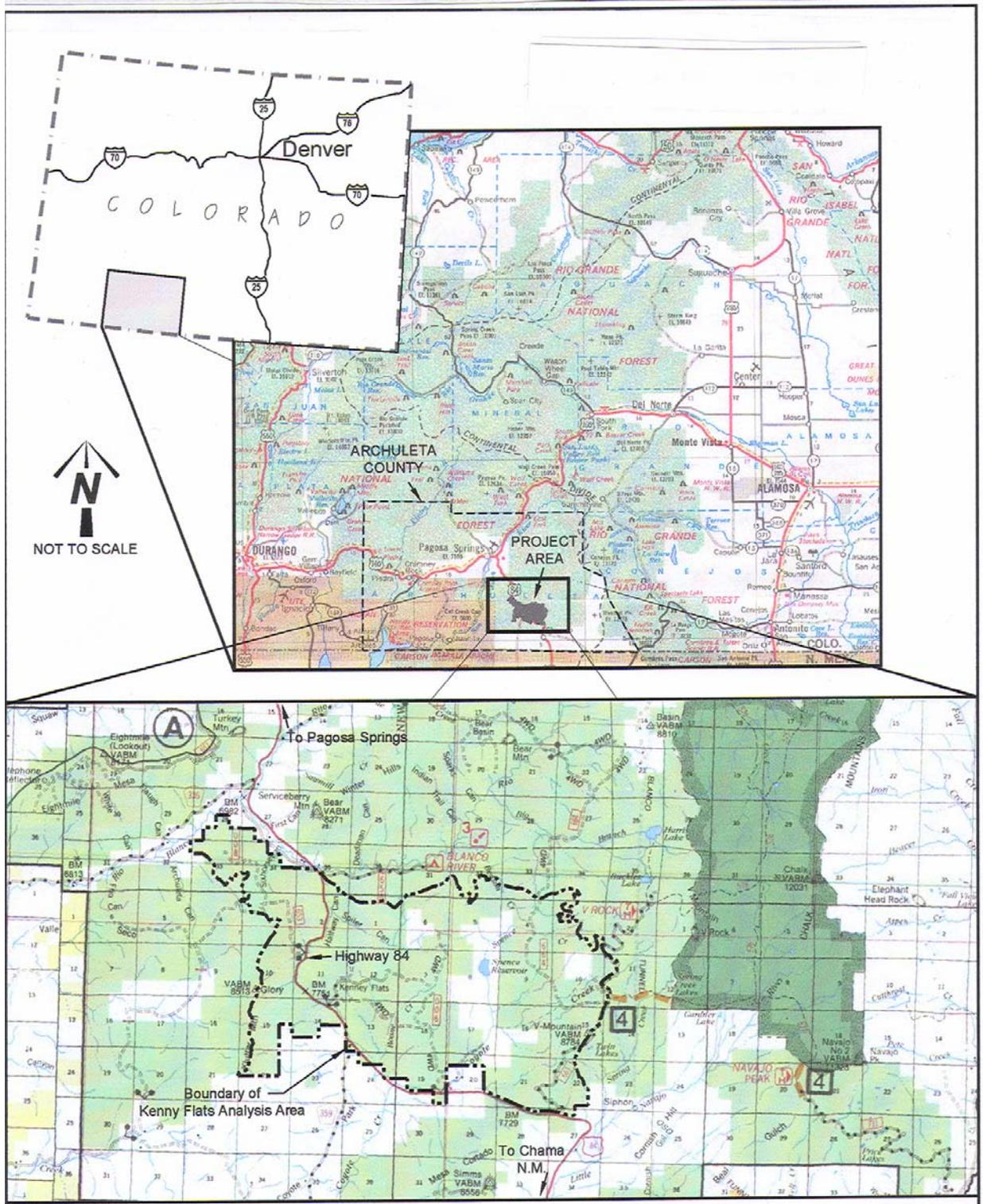
Alternative approaches for this proposed action are addressed in detail in Chapter 2. The prescribed fire portion of this project was previously analyzed and approved in the *Prescribed Fire Plan, EA, San Juan National Forest* and associated Decision Notice issued in April, 1997. The Kenney Flats EA is tiered to the prescribed fire plan and therefore no detailed resource analysis is necessary for the burning portion of this project; however, the combined effects of activities are considered in the cumulative effects portion of the analysis.

### **Analysis Area, Project Area and Timeframes**

This document mentions two types of areas. The "Analysis Area" is the larger, and defines the geographic boundary within which the vegetation analysis was conducted (please refer to Figure 2, *(General Location Map)*). The smaller area referred to in this assessment is the "Project Area", which encompasses the immediate locations where proposed activities, related actions, and direct effects would occur.

The Kenney Flats Analysis Area is approximately 13 miles southeast of Pagosa Springs, Colorado. The vegetative analysis area encompasses about 15,400 (includes private lands) acres in Archuleta County, Colorado, T33, 34N, R1, 1 ½W and R1E, New Mexico Prime Meridian. There may be some issues or resource effects discussed beyond this vegetative analysis area; the analysis area will be identified. The project area encompasses 3,826 acres, or 25% of the Kenney Flats Analysis Area.

Figure 2 General Location Map



The temporal scope of the effects disclosed in this EA is a period of 20 years. This 20-year scale is based on thinning cycles and forest re-growth, fire-return intervals, and reasonable knowledge of expected future management. Any deviations from this time frame will be revealed and explained for that particular resource.

### **Decision Framework**

Based on the environmental analysis in this EA, the San Juan National Forest Supervisor will decide whether and how to reduce fuel loading and restore ecological condition in the Kenney Flats Analysis Area in accordance with Forest Plan goals, objectives and desired future conditions. This decision will include:

The location, design, and scheduling of any of the proposed activities.

Whether or not to dispose of thinned material off-site;

Access management measures including temporary road construction and reconstruction and;

Mitigation measures to reduce or avoid environmental impacts.

### **Public Involvement**

Prior to the scoping activities specific to the Kenney Flats Fuels Reduction and Ponderosa Pine Restoration Project the Forest Service participated in public meetings hosted by Archuleta County in order to develop a community fire plan. A series of five meetings were held during late summer and early fall of 2001. This effort resulted in the *Archuleta County Community Fire Plan* (Fort Lewis College, et al. 2002).

The Council on Environmental Quality (CEQ) defines scoping as "...an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR 1501.7). Among other things, the scoping process is used to invite public participation, to help identify public issues, and to obtain public comment at various stages of the EA process. Although scoping is to begin early, it is really an iterative process that continues until a decision is made. In addition to the following specific activities, the Kenney Flats project has been listed on the San Juan National Forest Schedule of Proposed Actions (SOPA) since June 1, 2002. To date, the public has been invited to participate in the project in the following ways.

#### Public Mailing

On August 26, 2002, a letter providing information and seeking public comment was mailed to 345 individuals and groups. This included federal and state agencies, 69 tribal entities, municipal offices, businesses, interest groups, and individuals. A total of 9 responses to this initial mailing were received. Notice of the proposed project was posted on the San Juan National Forest's web site from August through September 2002.

#### Local News Media

An announcement about the proposed project was printed in the *Pagosa Springs Sun* in September 2002, requesting ideas, thoughts and concerns.

#### Public Meetings, Field Trips

Public field trips were held on October 5 and 9, 2002 to provide project area information, present the proposed action, and discuss local concerns and interests that should be addressed in the Kenney Flats EA.

Dr. Dennis L. Lynch, professor emeritus Colorado State University, presented a slide show on ponderosa pine restoration projects, at the Pagosa District Office, December 5, 2002. Dr. Lynch discussed the complexities of managing ponderosa pine, for long-term large diameter trees, with stocking levels close to historic levels. This presentation summarized principles described in *Forest Restoration in Southwestern Ponderosa Pine*, a case study focusing on ponderosa pine on the Dolores Ranger District (Lynch, 2000).

Several presentations were made to public groups on the National Fire Plan during the summer of 2002. Each identified the Kenney Flats area as under consideration for projects and invited people to join the fall field trips.

Using the comments from the public, the Colorado Division of Wildlife (CDOW), the Natural Resource Conservation Service (NRCS) and other agencies, the interdisciplinary team developed a list of issues to address.

### **Issues and Concerns**

During scoping for this proposed project, several significant issues were raised. These issues were used to formulate the alternatives analyzed in detail in this document. Other concerns were used to create mitigation measures or were analyzed in the environmental effects of alternatives. Specific comments are located in *Appendix B, Responses to Public Comments*. The significant issues include:

#### Wildfire Hazard

As previously described, this area was identified in a collaborative process because there is a high risk of unnatural, stand replacement wildfire in ponderosa pine stands due to changes in stand structure over the past 100 years, and this analysis area is adjacent to developing private land holdings and subdivisions. Indicators that can be used to measure whether this issue can be remedied by implementing one of the listed alternatives or mitigation measures include;

- Predicted change in fire behavior;
- Risk to firefighter safety;
- Suppression options identified.

#### Effectiveness of Fuels Treatments

Several comments focused on speculation that treatments could inadvertently increase the fire hazard by adding to fuel loading on the ground or creating new fuel ladders. Questions were raised on whether removal of thinned material was necessary, the effectiveness of pruning as an alternative to thinning, whether thinning could occur without burning, whether treatment goals could be reached by restricting treatment to areas immediately adjacent to private property, and the continued threat of wildfire from insect damage alone. In order to assess the effectiveness of the fuels treatments identified in the alternatives the following indicators will be used:

- Comparative costs of the treatments;
- Effect on crown base height;
- Effect on crown bulk density;
- Change in Condition Class;
- Timeframe to reach the fuels reduction objective;
- Fuel loading (expressed in tons/acre).

Ecosystem Restoration:

There is concern that existing forest conditions are not ecologically sustainable, and that these forests would lack the resilience to recover from a major disturbance such as wildfire or widespread insect/disease infestations. Questions were raised on the effectiveness of treatments designed to restore resilience. Addressing the following will assess the probable success of ecosystem restoration.

Resilience to disturbances such as wildfire, insects and disease;

Change in canopy closure, diameter growth, stems per acre

Erosion potential;

Structural diversity of the forest (including oak and snags). Diversity will be assessed at stand-level (including openness, clumpiness, variable size classes) and at the landscape-level (including size-class distribution and habitat structural stages).

Concerns:

All of the following concerns raised during initial scoping and early discussions about potential activities are addressed, analyzed and disclosed in Chapter III of this document.

Effects to wildlife species

Potential landslide and earth flow

Watershed degradation

Air quality

Retention of snags

Increased potential for illegal motorized use

Changes in surface drainage, water yields and subsurface flows

Vegetative diversity

Potential reduction in existing or future old growth stands

Spread of root disease

Fragmentation of habitat as a result of road building

Detrimental effects on existing social and economic values

Domestic livestock grazing could interfere with accomplishing stated goals

In addition to direct effects, some people were concerned that we fully explain all aspects of proposed treatments, including the purpose of each, when we would use dozer lines for burning, any impacts from proposed new roads, existing fire management policies, historic conditions that the proposed activities are designed to restore, and financial analyses. These items are addressed in Chapters II and III.

Concern was raised that any of the treatments be done in the most environmentally sensitive way available. Most of the mitigation measures described in Chapter II are directed at accomplishing that goal.