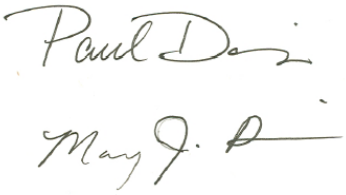
BEFORE THE REGIONAL FORESTER,
REGION THREE OF THE UNITED STATES FOREST SERVICE

In Re: Objection of Tajique Watershed	)
Restoration Project	)
Environmental Impact Statement on	)
the Cibola National Forest	)
	)
To:	)
	)
Reviewing Officer	)
Forest Service, Region 3	)
333 Broadway SE	)
Albuquerque, NM 87102	)

From:



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I. Introduction

The US Forest Service (USFS) has proposed a fuel reduction project under the Healthy Forests Restoration Act (HFRA) for the Tajique Watershed, Cibola National Forest, in Torrance County, New Mexico. The final decision of the Forest Service is documented in the Final Environmental Impact Statement (FEIS) for Tajique Watershed Restoration Project and was published in the Albuquerque Journal on October 17, 2005.

II. Notice Is Hereby Given

We, Paul and Mary Davis, residents of Forest Valley Subdivision , located within the Tajique Watershed and Torrance County, New Mexico, provide notice to the USFS that above-referenced action violates the HFRA and the National Environmental Policy Act (NEPA) and an objection to the proposed action is hereby filed.

III. Statement of Facts (description of project and objector's participation to date)

In late summer of 2004, the USFS began the scoping process for what would become the Tajique Watershed Restoration Project. At that time, the USFS staff met with Paul Davis and other local residents to discuss a "thinning project"; discussions were very general. We provided comments during the scoping phase, then attended the public meeting prior to issuance of the draft EIS. We also provided comments on the draft EIS.

IV. Arguments

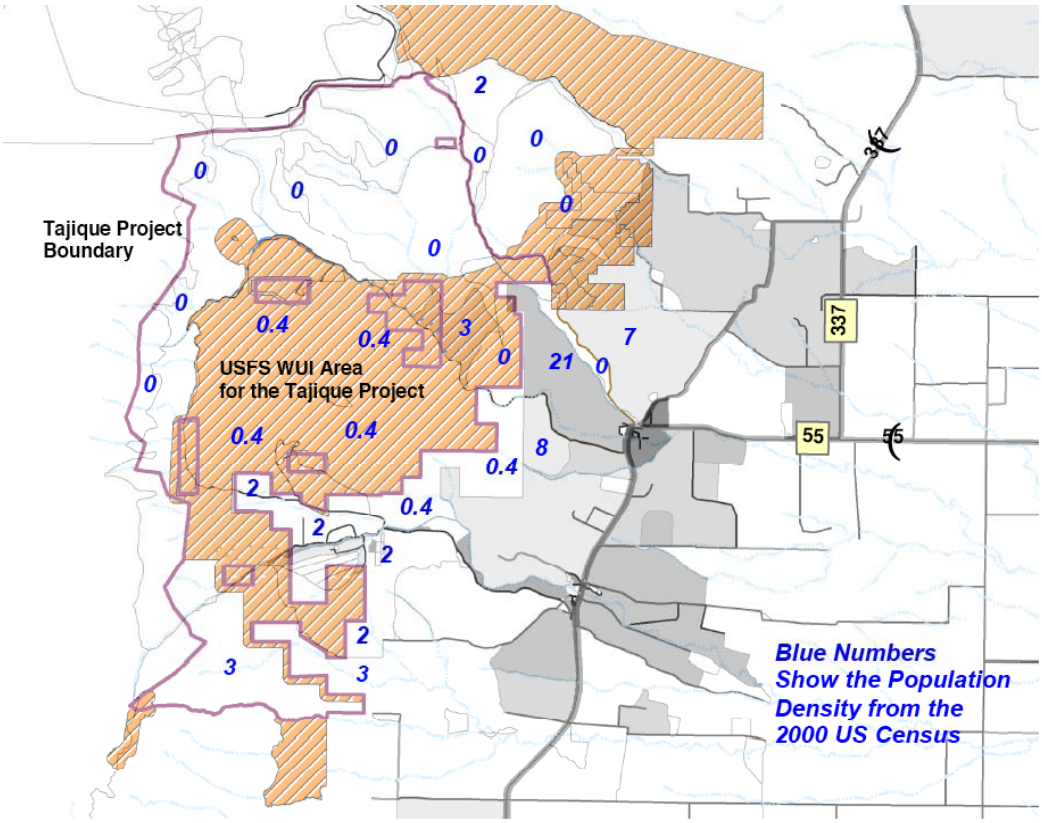
A. The USFS is acting in violation of the HFRA. The Tajique Watershed Restoration Project does not qualify as a fuel reduction project under the HFRA. The areas covered by the Tajique Watershed Restoration Project do not meet the definition of an Urban Wildland Interface (commonly referred to as WUI) community. The Tajique Watershed EIS does not address the definition of Urban Wildland Interface or the criteria satisfying the definition. Instead, the EIS appears to 'declare victory' and simply claims the project area is a WUI. The urban wildand interface community is defined by the Department of Agriculture in the Federal Register. (66 FR 651, 653, August 17, 2001.)

> "Under this definition, 'the urban wildland interface community exists where humans and their development meet or intermix with wildland fuel.' There are three categories of communities than meet this description. Generally, the Federal agencies will focus on communities that are described under categories 1 and 2. " [Category 3 is an 'Occluded Community' described as a park in an urban area and is clearly not applicable to this project.]
>
> "Category 1. Interface Community. The Interface Community exists where structures directly abut wildland fuels. There is a clear line of demarcation between residential, business, and public structures and wildland fuels. …"

Clearly, the Tajique project communities (Sherwood Forest subdivision and Forest Valley subdivision) do not meet this definition. The two subdivisions are tracts of land that were subdivided—the residences are isolated from each other, often by miles, and there is no central form of control or management. In most cases, individual dwellings have been constructed within the forest and a natural setting has been maintained. There is no line of demarcation.

> "Category 2. Intermix Community. The Intermix Community exists where structures are scattered throughout a wildland area. There is no clear line of demarcation; wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres. Fire protection districts funded by various taxing authorities normally provide life and property fire protection and may also have wildland fire protection responsibilities. An alternative definition of intermix community emphasizes a population density of between 28-250 people per square mile. "

The development and population density for Sherwood Forest and Forest Valley do not meet the definitional requirements. The following map is based on the US 2000 census (attached GIS file).



Sherwood Forest and Forest Valley do not meet the WUI criteria; in addition, they have not been identified in the Federal Register as communities at risk. The August 2001 Federal Register notice identifies a large number of communities at risk, including Sandia Park, Tijeras, Ruidoso, and includes "Manzano Mountains," which of course is not a community at all, but is a mountain range. (Id.) The Federal Register notice also provides direction on refining the initial list of communities: " The Federal Agencies will work with Tribes, State, local governments, an other interested parties to refine and narrow the initial list of communities provided in this notice, focusing on those that are at highest risk, as determined through the application of appropriate criteria." (Id. at __, emphasis added.)

A later grouping of communities was identified by the New Mexico Forestry Division, supplanting the Federal Register list. In the NM Forestry Division document, Sandia/Manzano Mountains is listed as a group with specific communities identified. These include Tajique, Torreon, Mountainair, but do not include Sherwood Forest or Forest Valley. (2005 New Mexico Communities at

Risk Assessment Plan, New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division)

In summary, the communities of Sherwood Forest and Forest Valley do not meet the WUI criteria, nor have they been identified as communities at risk. The EIS fails to address the criteria or their application to the two communities that are the subject of the proposed action.

B. The Forest Service action, proposing to implement a restoration project under the HFRA as described in the Final EIS for the Tajique Watershed Restoration Project, is arbitrary and capricious. The Agency's action directly contravenes the HFRA, as discussed below. The USFS fails to consider a number of critical environmental factors and makes conclusory statements contrary to scientific statements

First, the action as proposed will increase fire danger, not decrease it. This directly contradicts the intent of the HFRA, whose stated purpose is to "…reduce wildfire risk to communities, municipal water supplies, and other at-risk Federal land…." The proposed action calls for thinning of 17,000 acres, For convenience, expediency, or cost-savings, the Forest Service has decided to leave slash on the ground for years in the thinned areas. As stated by Mountainair District Ranger, Vicky Estrada,

> "Chipping, removal or burning occurs within 1-2 years after thinning. However, at any one time you may see material down on the ground. The number of trees thinned, the amount of fuel load left on the ground, and the risk of fire all come into play when determining how much and how quickly material is removed from an area. As an example: In an area where we want more grasses to come in, in order to reduce erosion and limit access by cattle, we may leave branches and limbs for multiple years until the grass re-establishes before we burn." (Mountain View Telegraph, October 6, 2005)

Figure 1 is a photo of slash piles remaining at the Thunderbird Restoration Project, just ten miles from the Tajique Project area. The slash is 3 to 5 feet thick throughout the Thunderbird area, creating an extreme fire danger that did not exist prior to thinning. These same conditions will exist at the Tajique thinning area following thinning. In addition, the Tajique proposed action will create new means of access for illegal woodcutters, poachers, off-road vehicles, all presenting new potential fire risks.

Second, the action as proposed will increase insect infestation, not decrease it. The legislative history of the HFRA clearly indicates that the Act is intended to address not only threats from wildfire, but also threats from insect infestations. (Senate Report 108-121, Healthy Forests Restoration Act of 2003) Until now, the Tajique Watershed, and, in fact, most of the Manzano Mountains have generally escaped the infestation of bark beetles which have plagued areas as close as the adjoining Manzanitas. (FEIS, pp.63-64) The Final EIS relates that a thinning effort by Isleta Pueblo, sharing a boundary with the Cibola National Forest lands in the Manzanos, resulted in bark beetle infestation. The EIS also notes that bark beetles preferred nesting grounds are pine slash. (Final EIS, Tajique Watershed Restoration Project, pp. 63 – 64) Remarkably, the Forest Service' plan to leave

slash on thousands of acres in the Tajique thinning area will not only increase fire danger, but will provide prime breeding grounds for the bark beetle.

> "During the summer of 2000, the Isleta Pueblo began constructing a fuelbreak through ponderosa pine along the pueblo and national forest boundary on the north end of the Tajique analysis area. As a result, western pine beetle killed approximately 2,600 acres of ponderosa pine along the national forest boundary, just north of the analysis area.…Piñon *Ips* in the piñon-juniper woodland and fir engraver beetle in the wilderness were the only insects detected during the 2003 aerial survey. The largest concentration of piñon mortality occurred on private land within Sherwood Forest. A minor concentration was also located northeast of Tajique Campground. *Ips* (*Ips confuses* and *I. pini*) attack small diameter trees and tops of larger trees, but their preferred host material is fresh pine slash. " (Tajique Watershed Restoration FEIS, pp. 63-64.)

Thus, the proposed action of the USFS will provide, in their own words, "preferred host material" for insect infestation in the project area.

Third, the USFS decision is arbitrary because it lacks a scientific basis. The FEIS contains numerous unsubstantiated conclusions, contradictory information, and biased evidence. The lack of a scientific basis is presented below in Argument C.

C. The Tajique Watershed FEIS fails to meet the requirements of the National Environmental Policy Act (NEPA) and HFRA. The USFS has used scientific information in a manner that is arbitrary and capricious to justify Alternative 1 and 3 and discount the No-Action Alternative. The FEIS relies on a litany of statements and claims that: 1) are not supported by factual evidence and are conjectural; 2) based on biased selections of data or scientific literature; and 3) are not based on the best available science. Appendix I contains a thorough analysis of the lack of scientific credibility associated with the Tajique Watershed FEIS. Appendix I is hereby incorporated into this objection.

The FEIS also fails to demonstrate that the proposed action would accomplish the stated purpose of protection and enhancement of water resources and watershed health. Appendix II analyzes the impacts of the proposed action and no action alternatives on the Tajique watershed and is hereby incorporated into this objection.

The USFS failed to adequately involve the public in the Tajique Watershed Project, as required by NEPA and the HFRA. A public meeting is required under the HFRA, along with public collaboration, including participation of interested parties during preparation of the fuels reduction project. In this case, the public meeting was held approximately 30 days before the issuance of the DEIS, which had obviously been prepared prior to meeting and without any true opportunity

for public input. The meeting was general in nature and provided no details on the scope and content of the proposed project. An earlier USFS meeting with local Forest Valley residents was also general in nature and did not provide any specifics on the project, and in particular, lacked information on the location and scope of the proposed thinning, the taking of large trees, the length of the project, etc.

In addition, projects under the HFRA are to be prioritized, including the following factor: "…the degree to which the community actively supports and invests in hazardous fuel reduction activities and programs. Support would be demonstrated by a combination of: developing partnerships with adjacent Federal agencies, States, and Tribes; sharing costs for hazardous fuels reduction and fire prevention activities; enhancing a fire-safe environment through enforcement of fire-related laws, regulations and ordinances; applying appropriate community planning practices; and participating in the organization of and support of fire safety and related environmental education." (66 FR 751, 754) No such support has been demonstrated by the local community, and in fact, a significant majority of Forest Valley residents oppose the Tajique Watershed Project in its entirety.

The USFS has also failed to consider public input through the comment process during the scoping phase and on the DEIS. No substantive responses were provided to concerns expressed regarding actual risk of catastrophic fire, actual watershed conditions, cost versus benefits, etc. In addition, during the scoping phase, when community involvement was identified as key by the HFRA, the USFS classified as significant portion of public comments as "non-significant" issues and labeled their responses as "Conjectural," "Not Support [sp.] by Factual Evidence," and "Beyond the Scope." These perfunctory responses dismissed comments related to: increased traffic, increased access resulting from new roads, the assumption of an unacceptable level of risk, the need to protect old-growth junipers from poachers, etc. We have enclosed our previous comments as Appendix III. Appendix III is hereby incorporated into this objection.

The USFS has demonstrated a total lack of commitment to community involvement, preferring to ramrod a predetermined outcome rather than consider public input in a meaningful way.

Finally, two connected actions have been alluded to in the FEIS but have not bee addressed. These two actions are: major road improvements (termed realignment) in the FEIS) and the biomass plant under development in nearby Estancia. Because the EIS does not directly address these two actions, we cannot evaluate their impacts or the impacts of the overall project as a whole.

CI. Request for Relief

- Address the related actions of road improvements and the Estancia biomass plant.

- Address our previous comments (Appendix III) that were provided during the scoping and draft EIS stages.

- A re-evaluation of the criteria for a wildland/urban interface as it applies to this project. If criteria are not met, conduct a standard NEPA process outside the HFRA.
- Incorporation of the Citizen's Alternative as the primary vehicle for project development and implementation.
- Re-issue the FEIS with full consideration of the Citizen's Alternative
- A re-issue of the FEIS incorporating accurate lightning-caused fire data along with an analysis of fire risk associated with lightning-caused fires. This evaluation should be directly incorporated into the decision making process.
- A re-issue of the FEIS incorporating accurate human-caused fire data along with an analysis of fire risk associated with human-caused fires. This evaluation should be directly incorporated into the decision making process.
- A re-issue of the FEIS incorporating a comparative trend analysis and between lightning and human-caused fires including a projection trend as a result of project implementation. This evaluation should be directly incorporated into the decision making process.
- Re-issue the FEIS using an accurate characterization of the No-Action Alternative and re-run all of its models using site-specific information;
- Facilitate and participate in the creation of a CWPP and prepare an alternative that reflects the final CWPP prior to a decision.
- Gather MIS population trend data and actually analyze the impacts of the range of alternatives to the actual population trends before approving this project.

USE OF SCIENCE

- Use the most up-to-date science on forest self-thinning to give an accurate representation of the no-action alternative and its effects on forest conditions.
- Obtain and use site-specific data in place of generic data or regional data for all analyses in the FEIS
- Use existing risk assessment methodologies techniques to estimate the probability of catastrophic fire for all alternatives and use the resulting probability to weight all benefits and negative consequences of all alternatives

CII. References

All references cited herein are included in electronic format on a compact disc (enclosed) with file names as cited.

APPENDIX I

Arbitrary and Capricious Use of Science to justify Alternative 1 and 3 and discount the No-Action Alternative.

The FEIS relies on a litany of statements and claims that: 1) are *Not Supported by Factual Evidence and Conjectural*; 2) based on biased selections of data or scientific literature; and 3) are not based on the best available science.

UNSUPPORTED STATEMENTS

The following numbered statements or claims are made in the FEIS without any scientific support either in the FEIS or in the referenced documents.

1. Tree densities will remain constant or even increase with time.

The believe by the USFS that tree densities will either remain the same or increase with time is evidenced by the following quotes from the FEIS. Note these are only a few of many such quotes throughout the FEIS.

> *Ponderosa pine stands would remain in an overstocked, unproductive, relatively homogeneous condition.*
> *FEIS, Table 4, p.23*

> *Under this alternative, no fuel reduction treatments would be applied within the watershed. Stands would be left in their current overstocked condition and the threat of wildfire would continue to exist.*
> *FEIS p.vii*

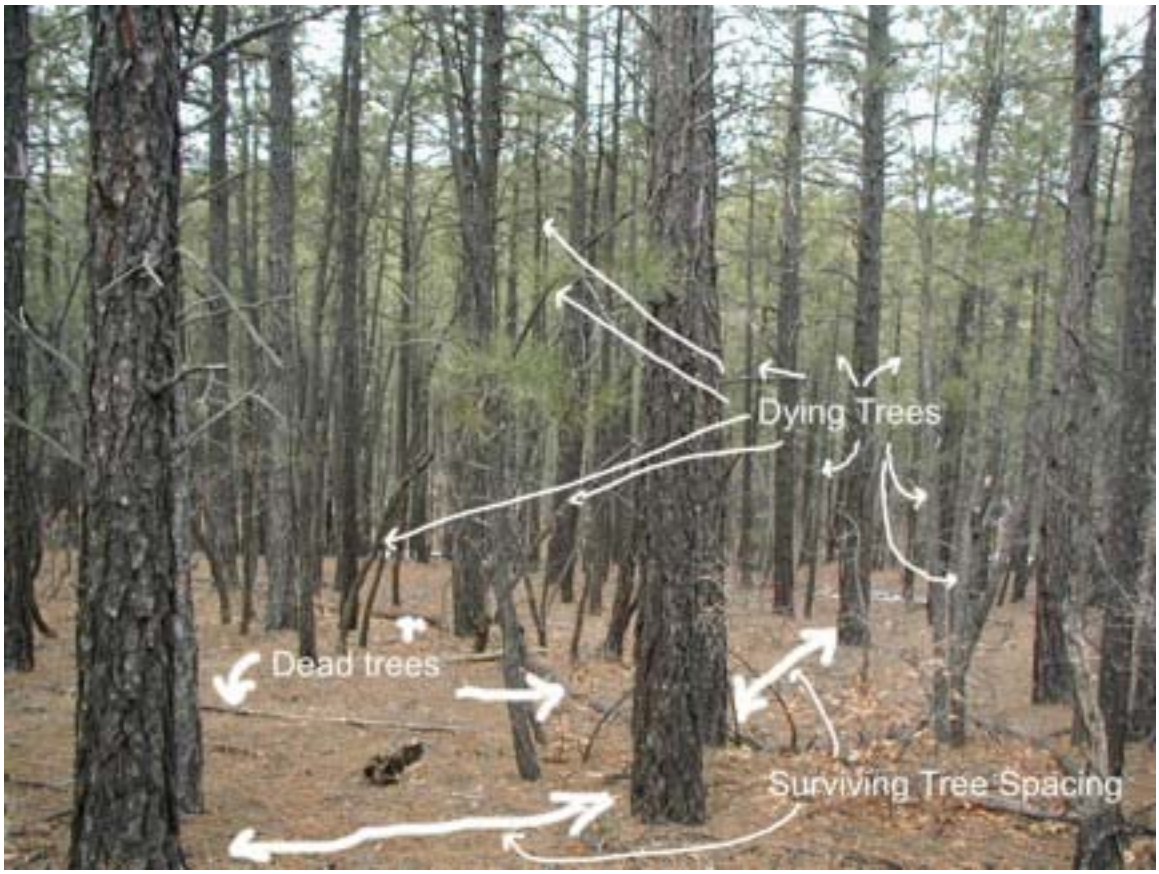
> *Without management activities in the analysis area, the current stand structure would remain similar to current conditions for many decades.*
> *FEIS p.67*

> *Without stand disturbances, the mixed conifer forest type would remain out of balance for decades to centuries.*
> *FEIS p.67*

Assuming that tree densities will remain the same or increase is a key unsupported misstatement that occurs in one form or another throughout the FEIS. For data support, this statement would require tree density surveys performed at the same location at different times. No such data are mentioned in the FEIS or supporting documents.

Beyond direct data, there are no scientific studies referred to or provided that substantiate this claim. What are left are USFS opinions, but opinions in the face of evidence to the contrary.

Following are a series of photographs from the Tajique project area demonstrating a significant and continuing decrease in the number of trees. So right now in the project area, the forest is successfully thinning itself. Not only do this pictures point out that tree density in the ponderosa forests is decreasing, they point out another inherent problem with the biasing of science that occurs in the FEIS. Specifically the first picture below is essentially equivalent to Figure 6 of the FEIS. However, the FEIS fails to show the other conditions that also occur within the ponderosa pine forest of the project area. Those pictures, (the second and third pictures below) show the majority of conditions within the project area and do not have nearly the tree density shown in Figure 6 of the FEIS.



Early stage of self-thinning. Picture taken at the location where the tree density was highest and there were the fewest trees had already died. Note the surviving trees were measured to be 16 to 20 feet apart.

Toward the final stage of self-thinning. Self-thinned trees (the dead trees) are on the ground, decaying.

At the end of self-thinning. Dead trees on the ground in the previous picture have rotted to become soil for the grasses seen in between the large healthy trees. This poses little or no threat of a crown fire according to the FEIS definition:

> *Agee (1996) determined that it takes a flame height of 4 feet to initiate crown fire when foliar moisture content is below 120 percent and the distance between the surface and the lowest live branches (crown base height) is less than 5 feet.*
> *FEIS p.89*

Perhaps more important, this forest has reached the same tree density that the FEIS considers optimum for a ponderosa pine forest. That is, the FEIS provides ranges of tree densities on page 69. These ranges are given in percentage of an SDI of 450 trees per acre. The percentages given in the FEIS range from 10 (45 trees per acre) to 35% (158 trees per acre). Therefore, without spending any taxpayer money, without increasing soil erosion, and without increasing fire risk, the forest has reached the desired conditions on its own.

Next, however, the FEIS contracts its statements about constant or increasing tree densities in the response to comments:

***8. Comment**: It needs to be recognized that the present "doghair" forest is functioning naturally according to the laws of plant succession. (J. Davis)*
***Response**: A forest will continue to self-thin given enough time…..*
FEIS Response to Comments

The FEIS however claims that this process will take essentially forever:

Forest Vegetation Simulator (FVS) predicts very minimal SDI value changes over 100 years with stands currently within the zone of imminent competition induced mortality (>50 percent max SDI).
FEIS p. 70

The above photographs prove the Forest Vegetation Simulator is wrong. The photographs show that some areas have already completed the self-thinning process and others are well on their way. However, sound science does exist that explains these conditions shown in these photographs. Forest researchers have long known of and quantified the self-thinning process (Reineke, L. H. 1933. Perfecting a stand-density index for even-aged forests. Journal of Agricultural Research 46:627-638). Researchers believe that the process is so well defined that they have defined and tested a so-called "self-thinning rule" (*2003 University of Calgary Kananaskis Field Stations Alberta Innovation & Science ISRIP Science Awareness & Promotion Program,* McRoberts and Miles, 2005). This rule is shown graphically in the following plot taken from the University of Calgary presentation mentioned above.

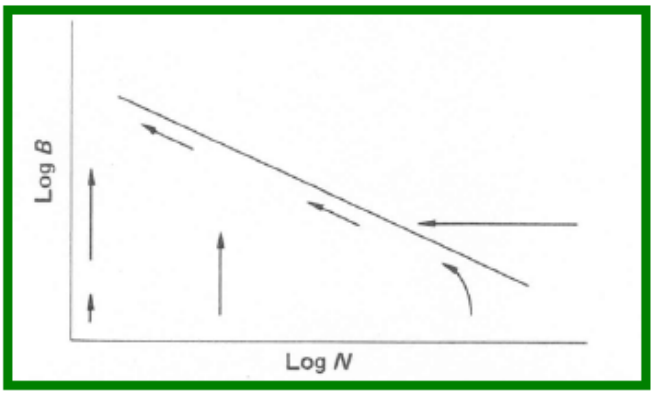


Figure 4.1 The *B-N* graph. The line of slope (-1/2) is the self-thinning line. Arrows indicate trajectories that stands follow at different biomass-density combinations. *(Adapted with permission from: Fig. 1, Pg 168. Westoby (1984) © Elsevier)*

The authors of this report describe the self-thinning rule as follows: *As an even-aged monoculture grows, it accumulates biomass until it hits the thinning line, then it follows the trajectory of the thinning line to the left of the graph. In other words, once the boundary has been reached the population's density* (N) *must be reduced before total*

biomass (B) *can be further increased. This reduction in density is a result of individuals dying.*

It is important to note that both axes of Figure 4.1 are drawn on a logarithmic scale. This means that after trees reach the self-thinning line, the rate of the weaker individual trees dying increases with time. Therefore, instead of a constant death rate, there is an ever-increasing death rate of the weaker trees. The above photographs show that the forest has reached the self-thinning rate (trees are dying) and that since part of the forest has finishing self-thinning, the rest is rapidly approaching the final desirable state.

On the other hand, compare the above natural low-fire risk conditions to the following photograph of the Thunderbird project, the USFS' most recent thinning effort in the Manzano Mountains.

Slash has been piled up at this location for years and our understanding is that it will stay this way for years to come. However, this very obvious, very high risk associated with thinning is downplayed and/or ignored throughout the FEIS.

2. The risk of fire is high and increasing

A key justification of the Tajique Watershed Restoration Project is the false assumption that the risk of catastrophic fire is high and increasing. This assumption is made throughout the document and is the basis for the evaluation of every alternative relative to every potential environmental consequence. In the analysis of the no-action alternative,

the FEIS goes so far as to assume that a catastrophic fire will immediately consume the entire project area is no action is taken.

Perhaps the most direct statement in this regard appears in the discussion on erosion and sedimentation where the FEIS states directly that the no action alternative is equivalent to a high severity wildfire:

> ***Alternative 2: No Action (High Severity Wildfire)***
> *FEIS, Table 35, p.143*

Statements like these (equating the no action alternative to a high severity wildfire) are found throughout the FEIS.

In addition, somewhat milder statements, still implying that if no action is taken there will be a catastrophic fire, pervade the FEIS. In fact, every comparison of the no-action alternative to Alternatives 1 and 3 include such statements. Below is a list of such statements along with the associated affected environment and environmental consequence being addressed:

Affected Environment – Ponderosa Pine

> *Within the unmanaged ponderosa pine stands there would be an increased risk of catastrophic fire events that were rare under historic stand conditions*
> *FEIS, p.50*

Affected Environment – Stand Density Index

> *In addition, the excessively high stand density index values would place these areas at risk for significant mortality density, fire, insect, or disease induced) within the next few decades.*
> *FEIS, p.70*

Affected Environment – Wildlife and Plant Species of Special Interest

> *Without treatments to abate fire risk, the Forest Service would not be meeting the intent of the MSO Recovery Plan or the Forest Plan.*
> *FEIS, p.113*

> ***Mexican spotted owl:*** *Without treatments wildfire could reduce canopy closure*

and density of trees, snags, and large logs below levels preferred by owls. Wildfires invariably destroy many existing large logs and snags, and few snags and logs created by fires are in the large classes preferred by owls.
FEIS, p.112

Affected Environment – Heritage Resources

Exposure to fire has the potential to affect all heritage resources, not just sites with wood
elements, in that all materials exposed to heat and flame can be altered to some extent.

FEIS, p.155

Affected Environment – Scenic Resources

If stand-replacing wildfire were to occur, this would also result in the loss of valued scenic character.

FEIS, p.164

Affected Environment – Recreation

… a catastrophic fire event, which would drastically change the experience of wildlife viewing and sightseeing.
FEIS, p.173

Affected Environment – Social Assessment

The greatest impact under this alternative would be if there was a landscape-scale wildfire.
FEIS, p.187

From these statements, it is clear; the USFS believes that if no action is taken a catastrophic fire will destroy all vegetation and soils over the entire project area.

The simple fact is with all the dangerous conditions the FEIS wants us to believe exist and with all of the lightening-strike fires the FEIS documents, there have been no large natural or man-made fires in the region for over 300 years (see fire risk analysis attached

to this objection) with the exception of the USFS 'controlled burn", referred to in the FEIS as the Tajique fire. It is important to point out that this period of time includes a large number of periods of drought including the recent severe drought periods of the early 1950s and the early part of this century. Except for the 'controlled' burns ignited by the USFS, all human-caused and lightening-caused fires have been very small. In fact, the FEIS states on page 118 that "*Fire history in the watershed is known for the past 70 years with the vast majority of fires being less than 0.2 acre."*

The FEIS attempts to justify their assumption of an imminent catastrophic fire in two ways. First, they point out how many lightening fires have occurred over the past 30 years (see Figure 8 and page 81). However, all of these fires are accounted for in their above statement about the minimal size of fires. Next, the claim that the fire risk is increasing due to increasing stand density and increasing population. The false claim of increasing stand density has already been refuted (see point #1 above). The claim of increasing fire risk due to increasing population is stated below:

> *Given the high number of fire starts in the east Manzano Mountains and the increasing population along the forest boundary, the risk of a fire getting started is on the rise.*
>
> *FEIS p. vii*

Not only is the statement totally unsupported within the FEIS or referenced documents, a review of USFS fire data (see included GIS fire coverage for the Cibola National Forest) shows that not a single man-made forest fire has ever originated on private land within or near the project area. In fact, within the past 5 years one home burned completely to the ground north of the USFS boundary and the project area but within a forested area. On that property, the area on the north side of the home was open pasture and the south side was forested. In this case, only a few trees very near the home were burned.

The other fire-risk related concept that is inherent in the FEIS is that no catastrophic fire will occur if either thinning alternative (1 or 3) is chosen. In fact, scientific studies indicate that the effect of thinning on catastrophic fires is mixed at best (see the attached paper "Modifying Wildfire Behavior by Carey and Schumann, 2003). While Carey and Schumann report of some successes with prescribed fire and the reduction of catastrophic fire, the fact is that most of the large fires in the southwest, specifically New Mexico were caused by prescribed fires. The only large fire that has occurred in the project area (fire number 202768 in the attached GIS coverage) was set by the USFS. The so-called Tajique fire was a controlled burn that quickly got out of hand. A fire that was supposed to burn only 45 acres burned 941 acres. In addition, alternatives 1 and 3 will require at least 10 years to complete during which time most of the land will be in the same state as it is in the no-action alternative. In addition, the FEIS clearly states that Alternative 3 would "… *not fully reduce the threat of crown fire since some stands would remain untreated.*" However, at no time does the FEIS include this fact in the evaluation of potential impacts even thought it is the same basis used for the virtually every evaluation of the impacts of the no action alternative.

To be consistent, the evaluation of Alternatives 1 and 3 should have considered the potential for a catastrophic wildfire during and after thinning.

In summary, the entire argument against the no-action alternative is not only baseless; the evidence is to the contrary. That is, the risk of catastrophic fire is much larger if Alternative 1 or 3 is chosen and the evaluation of Alternatives 1 and 3 was biased without the inclusion of the potential for a catastrophic fire.

3. Additional Unsupported Statements in the FEIS

Beyond the lack of support for the major contentions of the FEIS, an almost endless list of other unsupported statements is made. Following is a list of statements for which no scientific support was found in the FEIS or the referenced documents.

Vegetation conditions are such that shade-tolerant species would continue to reproduce in the understory and create high stand densities with significant ladder fuels. The accumulation of vegetation coupled with low crown base heights only further increases the risk of a fire moving from the ground into the tree canopy.

FEIS, p.vii

Wildfires would continue to be suppressed and fire suppression efforts would become more difficult with time as more trees die and add to the fuel load.

FEIS, p. vii

Southwestern willow flycatcher potential habitat would continue to decline from encroaching conifers.

FEIS, p. vii

Merriam's turkey habitat that would decline at the project scale.

FEIS, p. viii

Conifer encroachment would continue to reduce water yields over time.

FEIS, p.viii

Total present net value costs for replacing or repairing property in this watershed after damage from a catastrophic wildfire would be close to $9.5 million.

FEIS, p.viii

In addition, National Forest System lands encompass the headwaters of this watershed and contribute to water recharge for many domestic water systems. These values are all at risk of loss from wildfire due to overstocked stands and the proximity of private developments that adjoin Federal lands creating a wildland-urban interface zone.

FEIS, p. 5

The proposed activities are expected to temporarily increase water quantity and lengthen the season of flow within the mountain streams that are critical to nearby communities.

FEIS, p.6

The Citizen's Alternative proposed using only natural ignition to reduce fuel loads, which
could result in a large-scale uncontrolled wildfire across most of the watershed.

FEIS, p.19

Mortality among the oldest trees would occur at a faster rate due to resource competition, insects, disease, drought, and potential fire.

FEIS, p.23

Piñon pine mortality would increase and woodlands would become dominated by juniper and oak.

FEIS, p.24

Bark beetle infestations would increase in piñon-juniper stands as density increases.

FEIS, p.26

With the current road system conditions, access for fire suppression, in some areas, would increase the response time, which would allow more vegetation to burn if a wildfire started.

FEIS, p.28

Over the next decade, these stands would become susceptible to western pine beetle
outbreaks.

FEIS, p.50

Watershed health is declining

FEIS, p.55

…some soil and water systems are at risk of being unable to support beneficial uses.

FEIS, p.139

Storm responses show an increase in peak flows due to concentrations of flow in narrow channels.
FEIS, p.141

Based on the value of homes in this area, the value of the Inlow Youth Camp and Forest Service facilities, the value of timber, and repair costs for roads and trails, the total costs for replacing or repairing property in this watershed after damage from a catastrophic wildfire would be close to $9.5 million. This does not include fire suppression costs which could easily be several million dollars more.
FEIS, p.193

Channel incision has drained the low flood plains, relative to the historic streambed elevation, leading to a loss of water storage in the sandy alluvium that supported some extension of the base flows over what they are now.
FEIS, p.141

Some gullies have been stabilized by the growth of sedges and rushes on the downstream end of the headcut, thereby raising the water table.
FEIS, p.141

Many of the developments in Sherwood Forest and Forest Valley are located in the flood plains of Tajique and Torreon Creeks.
FEIS, p.141

The above list is only a few of the unsupported claims made in the FEIS. It is very important to reiterate what is meant by an unsupported claim. These are claims for which there are no scientific references or data provides in their support. Some of the statements may appear not to require support but that is not the case. For instance, take the last statement about developments residing in the flood plain. The FEIS presents no data or map showing the flood plain. More important, no home in these developments has ever been flooded. In addition, Forest Valley has covenants requiring that homes not be built in the flood plain. There is one home that violates these covenants but even that home has never been flooded.

Now take all of the statements about water and water supplies. Just briefly there are no measurements of water table elevation (p.141 quote), no measurement of base flows (p.141 quote), and no measurements of peak flows (p.141 quote).

It is interesting to also look at the assumed monetary savings of the project (see above quote). The FEIS claims that $9.5M of property is at

In each case listed above no justification is provided for the claims being made.

BIAS SELECTIONS OF DATA OR SCIENTIFIC LITERATURE

The next type of arbitrary and capricious use of science to justify Alternative 1 and 3 and discount the No-Action Alternative is bias in the selection of data and scientific literature. Throughout the FEIS, the USFS has chosen to use only data and studies that support their pre-selected alternatives (1 and 3) and ignore contrary evidence.

The most glaring examples of this bias have already been discussed: 1) ignoring all scientific literature and site specific data that confirm that self-thinning is occurring and occurring at a rapid rate and; 2) ignoring data on the real risk of a catastrophic fire with the most important risk, prescribed fires, being ignored altogether.

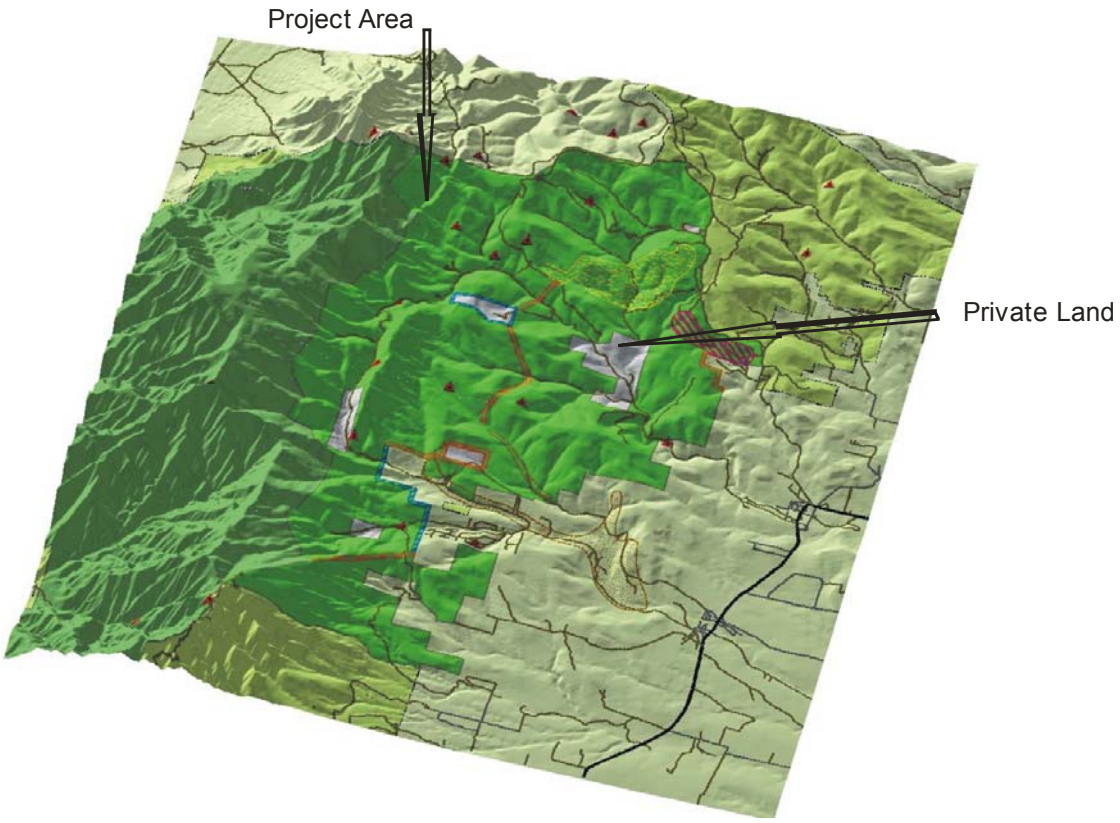
In addition to these two examples of biased use of data, one other major bias is evident throughout the evaluation of the no-action alternative. That bias arises from switching back and forth between the effects of fire and the effects of overcrowding whenever it is convenient. For example, on page 112 the northern goshawk is stated as heading toward extinction because the trees are (supposedly) getting "*even more densely stocked with young trees.*" Then on the same page, the claim is made that "owl habitat could be lost for decades" because of "*stand-replacing fires*." So in essence, the USFS wants to have it both ways depending on the issue being analyzed. They assume fire occurs when it is to their advantage and assume fire does not occur when that is to their advantage. There are many examples of this duplicity and other classic one is the evaluation of aspen stands. On page 56, the FEIS states that under the no-action alternative – "*Without treatment, conifer and hardwood competition for resources (sunlight, water, nutrients) would further reduce clone vigor. Mature stems would become increasingly susceptible to diseases, such as cankers, stem decay, and root rot (Hinds, 1985). Within 10 to 15 years, the mature stems would begin to die."* However, it is well known that fires are key to the regeneration of aspen (Moir and others – ponderosa pine ecology – attached) and FEIS is silent about the potential benefits of fires. Continuing with their inconsistency, the state ponderosa pine forests would be eliminated by a catastrophic forest fire (see page 50, last paragraph). Beyond these issues, the FEIS ignores science that shows one of the causes of the decline in aspen groves is cattle grazing (Moir and others – ponderosa pine ecology – attached).

Another example of bias in the selection of science to support the thinning alternatives and discount the no-action alternative is found in the assessment of insects and disease. First the FEIS clearly states that insect activity "*as a whole (insect damage) had been insignificant until 2001"*, 2001 being the time up to which insect surveys had been done. They then go on to state that insect infestation has been observed to be a problem on Isleta Pueblo because of the construction of a fuel break. In their remainder of the document they: 1) discount any problems of insect infestation related to fuel breaks and thinning; and 2) justify thinning (see page 64 for example) based on the threat of insect infestation if no thinning is done. This section also highlights the selective use of science in dealing with mistletoe. First mistletoe is called a pathogen (a name rarely if ever used in describing mistletoe) with respect to tree mortality. The existence of mistletoe is the only reason the USFS has provided for logging large diameter trees. However, mistletoe

also reduces the likelihood of catastrophic (see Moir and others, 1997 who by the way consciously do not label mistletoe as a pathogen). Moir and others(1997) also go on to state that "*Although there is evidence that mistletoe abundance has increased in the last century (Maffei and Beatty 1988), it has long been an important natural disturbance (figure 5). In addition to mistletoe shoots and associated insects providing wildlife forage, infections and brooms are especially suitable for roosting and nesting birds. Dead tops and snags created by mistletoe also enhance wildlife habitat (Bennetts et al. 1996; Hall et al. this volume; Rich and Mehlhop this volume).*" However, these documented benefits of mistletoe are never mentioned in the FEIS.

Then in describing fire weather (p. 85), the FEIS makes a number of false and misleading statements. First, the FEIS states that the fire season 'occurs early April to late July in most years. Actually, available USFS fire data (see attached GIS coverage) shows that for the years 1986 to 1996 lightening fires[1] occurred only from very late June through August (we requested the fire data shown in Figure 8 in the FEIS but it was never provided by the USFS). It is important to point out that the 7 out of 8 lightening fires occurred in either late July or late August as these are the two wettest months of the year (see the attached Tajique Weather Station data). Therefore, natural fires occur when the forest is wettest and least likely to burn. This could be part of the reason why 6 out of 8 of these fires burned less than 0.1 acres and the two remaining fires burned less than 1.0 acres. In fact, the only large fire in the project area, a controlled burn that quickly got out of control, was lit by the USFS during one of the drier times of year, 5/13/88. Next, this same section of the FEIS states that winds are normally from the west-southwest and range in speed from 8 to 30 mph. This first of these statements is false and the second is very misleading. The wind data for the Remote Automated Weather station is attached to this objection. From these data, the wind direction is shown to be from the south-south east. Looking the following map of fire locations (the triangles) and private land one can see that such winds would generally cause fires to spread away from private land not toward them as stated on page 85 of the FEIS.

[1] It is important to point out that lightening fires are the only fires the FEIS is concerned about.



The misleading part of the statement in the FEIS is the wind speed. The FEIS states that wind speeds range from 8-30 mph during the fire season. Actually, the data from this weather state shows clearly that the FEIS has chosen only to publish the range of maximum wind speeds. The true range of wind speeds is from 2-30 mph and that the mean wind speed is only between 2 and 4 mph. In addition, 75% of the fires occur when the maximum wind speeds are is 5 mph.

The FEIS acknowledges that land slope can affect fire spread and intensity (page 84) with fire normally spreading uphill. While acknowledging that a dominate eastward slope exists, the FEIS leaves the implication that all slope aspects are present in the project area and of equal importance. However, looking the map above, it is clear that the point not mentioned is that lightening fires generally occur on ridge tops above all of the private land.

Next, the fire danger is described to be high because expected flame lengths are estimated to be high enough to ignite existing tree branches (see Table 12, page 81). This estimation is based on the type of fuel models stated to exist in the project area. The FEIS states that fuel models 6, 9, and 10 exist in the project area and that fuel model 6 is estimated to have the largest flame length (most dangerous). However, the *Cibola National Forest Line Officer Briefing Package* (attached to this objection) describes only fuel models 2 (grassland), 9, and 11 being present in the Manzano Mountains and fuel model 11 (the worst case) being associated with thinning. The discrepancy between documents in this case is critical because the Line Officer Briefing package is used by

firefighters preparing to enter a fire. One would hope this source of data is more accurate than the FEIS. As has been observed over and over, the FEIS chose only data that supported its case and ignores the critical data that proves that their thinning project will create a higher risk than currently exists.

Throughout the FEIS, the negative impact of cattle grazing is documented (see pages 1, 43, 49, 54, 58, 78, 85, 98, 137, 139, 140, 200, 201 for example). However, the FEIS is so biased that removing cows (which solves most if not all of the problems the USFS believes exists in the forest) is not considered in any of the alternatives.

The FEIS is also biased in analyzing the temporal aspects of each alternative. For the no-action alternative, the assumption is made that a catastrophic wildfire immediately occurs and its affects last forever. This ignores not only natural succession and recovery but it ignores the fact that the USFS has programs for restoring burned areas. The Burned Area Emergency Rehabilitation (BAER) program is only one of many such programs (see Fire Recovery Programs.doc – attached). Then in analyzing the thinning alternatives the short term affects of thinning (increased fire threat – see above discussion) and soil loss (page v of the FEIS) are minimized while the risk of continuously burning and thinning the area forever to keep the Tajique Project Area in this single snapshoot condition is ignored altogether.

The FEIS states fire and the absence of fire is the primary reason for what the USFS describes as over crowded forests. In making these statements they ignore science such as the following: "Zimmerman and Neuenschwander concluded that "livestock grazing was probably the principal factor in creating and maintaining conditions that favored increased tree regeneration." (see fire-cows-tree-density.pdf attached).

The FEIS assumes that the fire risk is high in many pinyon-juniper areas throughout the forest (see page 82 for example) but fails to acknowledge that there has not been a large or perhaps any fire in pinyon-juniper woodland in the project are or maybe even the Manzano Mountains. The lack of a fire in these areas is understandable given the fact (see Figure 8) that most fires occur at higher elevations in the forest.

In summary, the FEIS is arbitrary and capricious in its choice of data and science in an attempt to favor the thinning alternatives (1 and 3) over the no-action alternative (2).

FAILING TO USE BEST AVAILABLE SCIENCE

Probably the most egregious failure to use the best available science is in the FEIS estimate (actually lack of estimate) of fire risk. The entire basis for any action under this project is that unfounded assumption that a catastrophic fire is about to engulf the entire project region. However, the likelihood of such a fire is never calculated. The closest the FEIS comes to estimating the probability of a catastrophic fire is in the Fire and

Resources section starting on page 79. The only way to approximate the implied risk is by combing statements found in different sections. On page 81, the FEIS states, "*this area has an average of five lightening-caused fires per year."* Review of Figure 8 of the FEIS and other fire data show this statement to be false but for illustrative purposes, the assumption is made that there are five fires per year. Then on page 79, the FEIS states that "*Approximately 1 percent of all wildfires have been found to escape initial attack and turn into a large- scale fire (Graham and McCaffery, 2003)*[2]*."* The combination of these numbers would lead to an expectation of one large-scale fire every twenty years. As stated before the analysis of the no-action alternative assumes that the occurrence of a catastrophic fire is an absolute certainty. Both of these estimates are obviously wrong as the only large-scale fire that has occurred any where near this area in recorded history was the Tajique fire, an uncontrolled controlled burn. As documented in our comments on the draft EIS, the likelihood of catastrophic fire is less than one chance in 300 years. The FEIS totally ignores this assessment. Instead of evaluating the analysis presented, the FEIS (p. 327, public comments), rambles on about fire hazard (not risk), flame lengths (not probability), and lightening strikes (not large-scale fires). They proceed to shore up their (lack of) position by citing others who have also failed to calculate the risk of fire. In addition, they make two conflicting statements. On the one hand they state that a GIS can be used to estimate risk and on the other that "*there is no proven method to quantify risk."* As someone who does risk assessment for a living, I find this statement to be incredulous. Fire risks are calculated continuously by insurance companies. Perhaps more important there are a number of published methods for calculating the risk of a forest fire (see for example Farris and others fire probability, attached to this objection). However, the FEIS fails to even directly address the issue of fire probability preferring to bury its head in the sand and ignoring on the ground evidence, site-specific analysis, and existing science.

Other examples of the FEIS failing to use best available science include assumptions used throughout the assessment of past conditions and modeling of future forest conditions. The FEIS continually prefers to use generic instead of site-specific data. For example on page 48, the FEIS describes a number of history tree density studies performed in other parts of the United States. However, the stumps of the old-growth forest are still on the ground within the Tajique Project area. Therefore, a direct measurement of historic tree densities is readily available (see the following photograph).

[2] Actually the Graham and McCaggery, 2003 report says no such thing. A copy of this report is included with this objection. This report makes no mention of the likelihood of any fire.


Old growth stump within the project area.

In addition, the FEIS assumes a Stand Density Index (SDI) of 450 trees per acre for ponderosa pine (page 68). The SDI is the maximum number of trees that an area can support. The number of 450 does not come from the project area (page 68). However, this number is used throughout the modeling documented in the FEIS. However, the USFS site-specific measurements of tree density (see attached excel spreadsheet - RMRIS_stand_information.xls provided by the USFS) show areas that exceed 450 ponderosa pine trees per acre.

As the Healthy Forest Restoration Act Field Guide clearly states:

> *Among other things the Healthy Forests Restoration Act (HFRA):*
> *• Strengthens public participation in developing high priority projects;*
> *• Reduces the complexity of environmental analysis allowing federal land agencies to use **the best science available** to actively manage land under their protection;*
>
> *HFRA Field Guide, p.1 (attached)*

and the HFRA ombudsman states:

The three keys to a district ranger or forest supervisor doing an HFI or HFRA project correctly are: (1) follow the law, (2) use good science, and (3) be honest and open with the public.

Cleary the Tajique Watershed Health Project FEIS fails to meet HFRA Guidance by: being arbitrary and capricious in its choice of which science to use; failing to provide scientific support for all of the key assumptions upon which the project is based; and biasing the selection of science and data to avoid choosing the obvious best alternative, no action, over their pre-selected thinning alternatives.

APPENDIX II

WATER RESOURCES

A major purpose for the activities described in the FEIS is the protection and enhancement of water resources and watershed health. Essentially the FEIS makes the following argument: 1) the Estancia Basin and the village of Tajique receive their water from the Tajique watershed; 2) that without any action these resources are in danger; and 3) the activities planned under this project will improve water quantities and quality.

Specifically with respect to current conditions the FEIS states:

> *The purpose of this project is to reduce hazardous fuels and protect values at risk such as riparian vegetation, fisheries, water quality, and federally listed and regionally sensitive species habitat. This watershed also contributes to water recharge for the community of Tajique and the Estancia Basin.*
>
> *FEIS p.iii*

and that

> *The Tajique watershed is also a closed basin that provides domestic water to the communities within Torrance County. The town of Tajique primarily receives their drinking water from this watershed.*
>
> *FEIS p. 7*

The FEIS goes on to list all of the negative consequences that the USFS can imagine happening to water supply and quality if no action is taken. Following quotes are indicative of these types of claims.

If nature continues the course it is on, the FEIS states:

> *Conifer encroachment would result in a reduction in base flow water yields over time.*
>
> *FEIS p. 35,*

> *The unsatisfactory condition* (soils) *relates to a Watershed Condition Class II, where portions of the watershed may exhibit an unstable drainage network and some soil and water systems are at risk of being unable to support beneficial uses.*
>
> *FEIS*
>
> *p.139,*

and

> *The combination of high road density and human developments, such as homes, in flood plains increases the risk of flood damage during heavy precipitation events. Many of the developments in Sherwood Forest and Forest Valley are located in the flood plains of Tajique and Torreon Creeks.*
>
> *FEIS*
>
> *p.141*

Then the USFS employs their fundamental assumption about what will happen to the entire watershed in 2006. That is, the entire project area will burn down in a catastrophic fire and every inch of ground will experience high burn severity (the worst case the USFS could imagine). Based on these unfounded (see comment ***** of this document), the FEIS goes on to state:

> *The values at risk include riparian vegetation, recreational fisheries, water quality, ...*
>
> *FEIS*
>
> *p. 5,*
>
> *These wildfires threaten residential areas, water supplies, communication towers, electrical transmission lines, natural resource values and endanger human life.*
>
> *FEIS*
>
> *p.79,*
>
> ***Fire Behavior,*** *... Soil damage and soil loss resulting from high intensity wildfire will reduce productivity of the site. This includes the potential for long-term loss of wildlife habitat, vegetation cover, organic matter, and soils in general. Adverse impacts to water*

quality and an increase in sheet erosion would also occur.

FEIS p.81,

and,

Beneficial uses, including fisheries habitat, can be negatively affected by these natural events (fires).
FEIS p.144

The FEIS goes on to claim that if they proceed with this project:

Removal of vegetation could potentially increase downstream water delivery.

FEIS p.iii

Treatment of mixed conifer stands may improve watershed health and function by increasing water flows in upper elevation streams where these stands occur.

FEIS p. 46,

Large woody debris would dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality.

FEIS p.128

The (erosion) *model indicates that a combined operation of thinning and prescribed fire could reduce sediment yield in the project area by 55 to 75 percent on an average annual basis, compared to the No Action Alternative.*
FEIS p.143

In each case (current conditions, effects of no-action, and effects of implementing their preferred alternative), the FEIS makes false, misleading, and/or unsupported statements to justify the Tajique Watershed Restoration Project and discount the no-action alternative.

Inherent in all of the above assertions is a relation between the water supplies of the Estancia Basin, the Tajique water supply, and the proposed USFS actions. No such relation exists. The hypothetical impacts of the activities proposed in the FEIS are on

surface water flow (mainly issues of erosion and sedimentation). On the other hand, no individual or community in the Tajique area or the entire Estancia Basin utilizes Tajique Creek or any other surface water body as a water supply. That is, water to all users is supplied by wells. (Regional Water Plan, Shomaker and Associates, 1997). For example, the Tajique municipal supply well is 400 feet deep and draws water from 240-400 feet below the land surface. Between the land surface and the water producing zone are hundreds of feet of soil, sand, silt, shale, and limestone.

So when the FEIS hypothesizes an increase in water supplies:

> *Removal of vegetation could potentially increase downstream water delivery.*
>
> *FEIS p.iii*

it fails to provide a single study or piece of data supporting this contention. Further, the Environmental Assessment for the USFS Thunderbird project (the most recent thinning project in the Manzano Mountains) states on pages 23 and 24 "*the mindset that greater increases in overstory removal will generate greater increases in groundwater recharge is not supported by research."* They go on to say that quote another USFS publication which states "*Strategies for dealing with water shortages should avoid relying on augmentation from National Forests as a substitute for practices to reduce water consumption and improve conservation."* Since the instigation of the Thunderbird project no monitoring has been undertaken that even addresses the relation between thinning and changes in recharge or stream flow.

With respect to water quality, the only issue the FEIS address is potential changes in erosion and sediment carried to Tajique Creek. The FEIS starts by acknowledging that erosion is a serious concern:

> *Proper functioning condition surveys classified most of the riparian areas in the watershed as functional-at-risk and portions as nonfunctional.*
>
> *FEIS p.140*

and goes on to list the main causes of erosion and sedimentation, roads and grazing:

> *Recent watershed surveys completed by the forest hydrologist indicate that past grazing practices have reduced vegetative ground cover in upland areas causing increased runoff during large storm events.*
>
> *FEIS p.139,*

Erosion is a concern in areas with many unclassified roads and trails, especially on steep slopes and areas of shallow soil.

FEIS p.139,

High road densities can compound the effects of infrequent, high magnitude precipitation events. Roads increase surface and subsurface drainage efficiency by routing upslope water into channels, thereby increasing floodwater levels.

FEIS p.141

The FEIS further acknowledges that when grazing and vehicle use are curtailed watershed conditions improve:

About 3,500 acres of riparian and upland habitat have been excluded from cattle grazing and off-road vehicle use in the analysis area. These projects have led to enhanced riparian vegetation conditions including improved species and structural diversity.

FEIS p.137

and

Riparian areas along Apache Springs, Albuquerque Trail Canyon, Ojo Tererro, and Troncon Negro are improving due to permanent exclusion of livestock grazing.

FEIS p.140

So does the FEIS recommend the elimination of grazing and road closure? No. The FEIS does not even recommend reductions in grazing and, if implemented, would result in about 14,000 acres being opened up to off-road vehicles (tree spacings resulting from thinning are given as 10-12 feet or larger, Appendix B of the FEIS, which is wider that most existing USFS unclassified roads).

And even with all of the current erosion problems, the FEIS states that least erosion would occur if the forest was left alone:

Canopy cover and stand densities would remain high in the project area's watershed, with most of the kinetic energy of rainfall intercepted, reducing short-term accelerated soil loss.

and

...potential risk of short-term accelerated soil losses, due to high canopy cover, remains lowest.

FEIS p.145 No Action Alternative

Instead of eliminating grazing and closing roads, the FEIS recommends spending millions of dollars based the unfounded assumption that a catastrophic fire is imminent. Based on this assumption the USFS ran two erosion models, one for the DEIS and a different model for the FEIS. Both models use the totally unrealistic assumption that a catastrophic fire happens immediately, destroys all vegetation and damages all soils over the entire project area and that no re-seeding or re-vegetation follows the fire (see the no-action alternative in the following FEIS table).

Table 35: Sedimentation rates (tons per square mile per year) by alternative for treatments that include both thinning and prescribed burning

Vegetation Treatment Areas	Alternative 2: No Action (High Severity Wildfire)	Alternative 1: Proposed Action*	Percent Change Compared to No Action	Alternative 3: No Temp Roads**	Percent Change Compared to No Action
Mixed Conifer	507	202	-60%	200	-60%
Piñon-Juniper	95	28	-71%	26	-73%
Ponderosa Pine	1,176	369	-69%	365	-69%
Ponderosa/P-J Transition	713	242	-66%	238	-67%
Fuelbreaks	144	37	-75%	36	-75%
Slopes > 40%	882	390	-56%	390	-56%
Inaccessible Areas	487	190	-61%	190	-61%
Tajique Fire	1,003	276	-72%	276	-72%

In the draft EIS, the Hillslope Erosion Model (HEM) was used:

The (HEM) model of the two watersheds indicate there may be a reduction in sediment yield of 11.5 percent in the south watershed

and 19.1 percent reduction in the north watershed after treatment and over time. Treatments that would restore the watershed to natural conditions may result in a 15.3 percent reduction in sediment movement within the project areas over the long-term.

DEIS p.147

Between issuing the DEIS and publishing the FEIS, the USFS switched to using the Water Erosion Prediction Project fuel management tool (model):

Most importantly, the WEPP model produced much larger erosion rates:

The model indicates that a combined operation of thinning and prescribed fire could reduce sediment yield in the project area by 55 to 75 percent on an average annual basis, compared to the No Action Alternative.

FEIS p.143

The published reason for switching models is provided in the FEIS:

The HEM (Hillslope Erosion Model) that was used in the DEIS was determined to be inappropriate for this analysis because the HEM is designed to be used in a steady state situation and does not incorporate re-growth or recovery of vegetation from disturbance. Sediment yield from the general purpose vegetation treatments and the specific purpose vegetation treatments can be more accurately predicted from the Water Erosion Prediction Project (WEPP) fuel management tool.

FEIS p.142

However this explanation is confusing because the WEPP model existed at the time the DEIS calculations were done. A more detailed evaluation reveals that a key parameter of the DEIS was changed. The DEIS and the FEIS recognize that the majority of erosion occurs during intense short periods of precipitation:

Deep snowpacks and heavy monsoon rains can cause significant flooding.

FEIS p.144

The DEIS modeling with HEM is consistent with this observation:

(HEM model) …Rainfall was calculated based on a 24 hour rain event.

Watershed Specialist Report, 2004 p.17

However, the FEIS is not:

(WEPP) *...The outputs are also based on 50 years of average precipitation.*
FEIS p.143

Therefore, the DEIS provides a more reasonable estimate of the potential erosion rates – assuming a catastrophic fire occurs over the entire project area.

Now apart from the absurdity of a catastrophic fire immediately encompassing the entire project area, there is the issue of the effects of a fire on erosion and streamflow. In 1988, the USFS lit a controlled burn (the Tajique Fire listed in Table 3 above). The Tajique controlled burn was soon out of control and ended up being a stand-replacing crown fire that burned 941 acres (see enclosed USFS GIS map of fire occurrences, fire number 202768). Apart from the discrepancy in the size of this fire between the FEIS and the USFS data, a more important observation is that this very large fire occurred, a large rainstorm followed the fire, and the stream quickly returned to normal conditions such that in 1990 the USFS concluded:

Water quality analysis conducted in the early1990s indicated that water quality is sufficient to support a fishery, although during drought years,portions of Tajique Creek are dry.

FEIS p.99

Thus, even if a fire were to occur the effects would be short-lived contrary to the modeling in both the DEIS and the FEIS.

In summary, the FEIS is not justified in stating that watershed health is a purpose for the proposed alternative.

Appendix III

March 18, 2005

Ms. Deborah Walker
Project Manager
Tajique Watershed Restoration Project
Cibola National Forest
2113 Osuna Road NE
Albuquerque, NM 87113

Dear Ms. Walker:

As residents of Forest Valley Subdivision within the Tajique Watershed Restoration Project, we have attached a number of comments on the Draft Environmental Impact Statement for Tajique Watershed Restoration Project, January 2005.

Thank you for the opportunity to comment.

Sincerely,

Paul A. Davis

For:
Paul Davis and M.J. Davis
P.O. Box 1736
Tijeras, NM 87059

1. There is no factual evidence to support the need for the proposed project. Monies are being provided to the USFS under the Healthy Forest Restoration Act (HFRA) to protect private residences at an urban-wildlands interface from the risk of catastrophic fire. However, the EIS provides no factual evidence that the risk of fire is large and unacceptable. In fact, the EIS fails to even provide a quantitative value for the risk of fire at all. In addition, the expected costs to be expended far exceed the value of the property being protected. See Appendix A for a detailed discussion of both of these issues.

2. We support the inclusion, analysis, and selection of the Citizen's Alternative as proposed by Forest Guardians in a letter to the USFS dated November 18, 2004. Of the alternatives analyzed in the DEIS, we endorse the "no action" alternative (Alternative 2) because it is much more cost effective, results in the fewest adverse environmental impacts, and the largest reduction in fire risk.

3. We urge the USFS to select a project area where a true "wildland-urban" interface exists. With only approximately 10 households each spread over many square miles, Forest Valley and Sherwood Forest does not meet the definition of urban. Because very few homes are being protected, the cost-benefit of this project is actually negative. That is, the value of the property being protected is worth less than the expected cost of the project (see Appendix III.A).

4. The DEIS is not supported by factual evidence and is conjectural in nature. Key questions that are not addressed include: How much will this project cost, both in terms of immediate costs to implement and long-term costs to maintain? How many logging trucks per day are expected? What is the value of the timber and other wood products to be extracted? What is the expected local benefit versus benefit to non-local commercial interests? What quantitative changes to watershed health are expected? What is the current risk of fire and what is the post-thinning risk of fire?

5. We object to the entire premise of the "no action" alternative, which assumes that a catastrophic fire will occur and analyzes impacts based on that assumption. We request that the no action alternative be reanalyzed based on a true "no action" scenario where current conditions continue and the actual risk posed by fire is addressed. (see Attachment A for a technical discussion of risk and an estimate of the actual fire risk).

6. We believe the proposed action will result in unacceptable impacts, including an increased risk of catastrophic fire. A number of significant impacts are avoided (not discussed) in the analysis included:

    - "Temporary" roads do not exist. Once a road is cut, it remains to be used by off-road vehicles, woodcutters (legal or not), and poachers. We have attached

pictures (Attachment B) of two "closed" roads off FR 55, both of which underwent substantial closure efforts by the USFS several years ago and both of which are now being used, as evidenced in the attached pictures.

- The current road density is unacceptable in terms of impacts to wildlife and interference with a natural environment. The current road density (see p. 94 of the DEIS) is (generally) twice that recommended by the Forest Plan. The addition of 28 miles of roads is an unacceptable impact that is not addressed in the DEIS. In addition, the deferral of analysis of this impact is not acceptable. The DEIS (p. 95) states: "Recommendations from the RAP [Road Analysis Process] Report to reduce road density would be analyzed at a later date with additional public involvement." This commitment is disingenuous—the USFS is proposing to select an alternative that significantly increases an already unacceptable road density and then delays evaluating the impacts until a later (too late) date.

- Traffic impacts associated with the preferred action are not addressed in the DEIS. All of the associated classified roads are currently in poor condition, with some portions now impassable by passenger cars due to the recent (welcome) wet conditions. Weight limits on the concrete bridges are _____ and are not sufficient to accommodate logging traffic. The narrow and winding nature of the roads, together with the poor road surfaces, makes current driving conditions hazardous. The addition of numerous (how many?) vehicles, including oversized trucks, is not analyzed. The DEIS must identify and analyze the impacts of substantially increased traffic. If the USFS is planning significant road/bridge improvements, this should also be addressed in the DEIS and should be provided for public comment.

- The proposed action significantly impacts the scenic qualities of the area, violating the Visual Quality Objectives of the Management Plan. Given the unique qualities of the area for recreation and fall colors, we believe the negative scenic impacts are unacceptable.

7. The proposed action allows the taking of trees up to 24 inches in diameter at breast height. Trees of this size in the Manzanos are the few remaining old growth trees. We have measured tree diameters along FR 55 and note that we could only find one tree larger than 24 inches in diameter. In other words, this plan allows for logging of virtually the entire forest. In addition, there is no stated limit on the number or percentage of trees of this size that will be logged. Please identify the limits to be placed on logging activities.

8. The preferred action requires significant use of prescribed burns to deal with the resulting slash. With each prescribed burn, the probability of a catastrophic fire increases. We believe this increased likelihood of fire is an unacceptable impact.

9. A major objective of the proposed action is to improve water resources (p.4 of the DEIS). However, no factual evidence is provided to either document the poor

watershed conditions or prove that the proposed actions will improve conditions. In fact, no water quality or water quantity data are presented in the EIS. Therefore, any statements about the need to improve watershed health are not supported by factual evidence and are therefore conjectural. In reality, the only major improvement in water quality would come from a reduction/elimination of grazing. In addition, the thinning will increase the probability of severe flooding especially since the thinned biomass will be removed. The DEIS should quantitatively address how the proposed action will result in improved water quality or this object/positive impact should be omitted from the analysis.

10. The implicit objective ("Catastrophic fire would likely result if tree density is not reduced…." p. 199) of preventing a catastrophic wildfire is not supported by the outcome of the proposed thinning project. While thinned areas may provide some limited window of opportunity to stop or slow down a wildfire, a catastrophic wildfire can and will spread beyond the thinned areas.

11. We object to the simplistic social assessment (Section 3.10) that attempts to veil inadequate Forest Service policies and analysis by presenting issues in terms of "us versus them." This technique has been used by the USFS in the past in an apparent attempt to distract the public from the real issues and cause animosity. Speaking as Forest Valley residents, one of which is a Hispanic native New Mexican, we assure you that we do not view the public lands "as an extension of [our] own private lands." P. 187 We enjoy the solitude and beauty of the surrounding area, but in no way would attempt to limit the same enjoyment of others. We also have never objected to the traditional uses (other than grazing, which has resulted in large scale eco damage) of the Forest lands, which has been a source of woodcutting, hunting, and recreation for hundreds of years. We note that these traditional uses have been small-scale individual activities, consistent with preserving a natural environment. The USFS should evaluate the comments of the public as they are presented and should not assign self-indulgent ulterior motives. To assume that most of the land grant population endorses the USFS proposed action is offensive to all of the public. (See p. 188. "[T]he majority [i.e., the land grant populations] of the persons most directly affected probably hold more of an anthropocentric view of how this area should be managed.") We believe that all persons directly affected should be provided the opportunity to speak for themselves, as we believe they are clearly capable. During the proposed elk elimination hunt, many locals (including land grant residents and Forest Valley and Sherwood Forest residents) came to the public meeting and spoke quite effectively for themselves. In that case, many of the same views were shared across your artificial boundaries. In addition, probably a higher percentage of the so-called local residents commute to Albuquerque and very few local residents have lived in the area longer than we have. In fact our children's entire lives have been in these mountains. So do you call them outsiders? We request that your biased social assessment be replaced by an objective analysis of impacts to the social well-being of the entire community. In addition, the HFRA is providing you money for the express purpose of reducing fire risk at the urban-

wildland interface. Therefore, none of the local communities should be described as affected, let alone "the most directly affected." There is at least three miles of private land between the forest service boundary and the so-call local communities. Therefore, nothing you do will 'protect' the so-called local communities. This is just pure nonsense that you made up to get support for your desire to perform this action without regard to the feelings of the people you getting paid to protect – us. If anyone is an outsider, it is you, coming in and trying to stir up trouble among the local residents.

12. We find it difficult to place faith in the surmised merits of this latest USFS initiative, given that past initiatives, also conducted in good faith and with much enthusiasm, resulted in grave environmental harm, including the current harm (forest overgrowth and lack of grasses) proposed to be remedied here. Past practices such as clear cutting, overgrazing, and fire suppression were all USFS initiatives in the past, perhaps supported by good intentions, but not good science. We see no evidence that the current initiative will result in better consequences.

13. The USFS was completely unresponsive to public comments. There responses to comments included only the following statements: 1) *not supported by factual evidence*; 2) *Conjectural*; 3) *beyond the scope*; and 4) *already decided by law.* In the meantime the USFS provides no data or facts to support the majority of their claims in the EIS. On the other hand when we say increased traffic will increase dust and noise they have the gall to label that as "*conjectural."* Never do they respond to any respondent's comment in a positive or receptive manner – not once. In fact they either are ignorant or callous since they do not even seem to have read the comments carefully. For example, when we pointed out that "Clearing the forest will increase access and increase the risk of fire from contractors and recreationists" they respond that "There is no evidence to support the fact that recreation use would increase as a result of the proposed activities." We never said it would. We said their access to cleared areas would increase. And to say that there is no increase of fire risk when contractors are using chain saws, smoking, etc. is, as you love to say – *conjectural and not supported by factual evidenced.* In fact in your answer you say it will increase fire risk by admitting that few fires do occur as a result of contractor activities. Few fires where once there were none are an increase in fire risk.

Appendix III.A – Fire Risk and the Value of Reducing it.

Unacceptable fire risk is the stated reason that monies are available to the USFS under the Healthy Forest Restoration Act (HFRA) for thinning 17,000 acres and installing 28 miles of new roads. However, the USFS never quantifies the risk posed by forest fires. Instead they confuse the concept of hazard with the concept of risk leading to an extreme exaggeration of the problem and leading many people to believe that 'something must be done.'

First we need to define what is meant by 'risk.' In the risk profession, the common definition comes from a friend of mine John Garrick, the past president of the Society of Risk Assessment. In what risk professionals call a 'classic paper' – Kaplan and Garrick (1981) defined risk as the combination of:

1) what can happen (the hazard)
2) what are the consequences of it happening
3) what is the probability of it happening

In our current discussion, the USFS talks about hazard (fire) as if they were speaking of risk. But risk must also incorporate probability and consequence.

The difference is far beyond semantic. Consider a decision to fly across the country and visit friends or relatives. In this case, risk is: 1) what can happen – a plane crash; 2) the consequences – you die; and 3) the probability that the plane will crash. If we only considered the hazard or the consequences, no one would ever fly – period. We get on airplanes for one reason and one reason only. The probability of a crash is very low. Does the fact that the probability of a crash is very low mean the plane you get on will not crash? No. However, a rational decision combining consequences lets you board the plane. This is such a critical point, I will give another example. Our homes are insured against fire because of the likelihood that they will not burn down. That is, if the insurance companies only looked at the hazard (fire) and the consequences (they would have to pay to rebuild our homes), they would never insure us or anyone else in the entire world against fire. Instead the probability that our houses will burn down is directly in their decision to insure us and their decision on how much we have to pay for insurance. In fact, all rational decisions are based on assessing the hazard and combining probability with consequences – whether it is driving a car or climbing on our roof to fix the rain gutter. If we only considered the hazards of every action we took we would be paralyzed as individuals or as a society. However, this is exactly what the USFS is asking us to do – think only of the hazard and not consider the consequence and the probability.

Now since the USFS and, more specifically, the so-called Healthy Forest Restoration Act (HFRA) state that they are protecting our personal property by thinning the forest we can state risk as:

1) what can happen – a forest fire
2) what are the consequences - personal property will be destroyed

3) what is the probability – this is the key unanswered question

In other words the goal is not to prevent or stop every forest fire but to prevent or stop only those that would damage personal property. The probability we care about is then the probability that: 1) a fire will occur; and 2) that that fire will destroy personal property. In recent emails you both present data that relates to the first issue – the probability that a fire will start based on historical data (lightening strikes, human-induced fires, and the one the USFS left out of the data – 'controlled' burns).

So what is the combined probability that a fire will start and one or more of our homes will burn down?

According to the data the USFS provided the risk of a forest fire occurring within the proposed thinning area is either 0.71 per year (24 fires in 34 years) or 0.47 (14 fires in 30years). However, none of these fires affected any of our homes or private property. So what is the probability that a fire will affect private land and our homes – less than 0.0033 per year or less than 1 chance in 300 years? How do I arrive at that number? First the Manzano Mountains were clear cut about 100 years ago. New trees grew which now occupy our land. Since the early 1900s there have been no catastrophic fires on the land any of us own. If there had of been a catastrophic fire, these trees of this age would not exist. That's 100 years without a catastrophic fire. Now if you happen to have looked at the stumps of the old growth that predate our current forest (there are many around my home) you can count the tree rings and find these trees were at least 200-300 years old. Therefore there has not been a catastrophic fire on our property for the past 300 to 400 years (200 to 300 years before the year 1900). Therefore the risk is less than 1 chance in 300 years and probably much lower since we have no evidence that a catastrophic fire ever occurred on the private property.

Certainly a fair question is whether or not the past data are representative of current and future fire risk. To address the possibility that the current or future risk is larger than the risk derived from historical data consider that factors that affect fire:

1) initiating events (lightning, campfires, controlled burns that get out of control)
2) forest conditions that are conducive to fire ignition and/or spreading (drought, tree spacing and health, and ladder fuels)
3) response to fires (fire fighting, restrictions on forest use, lookouts)

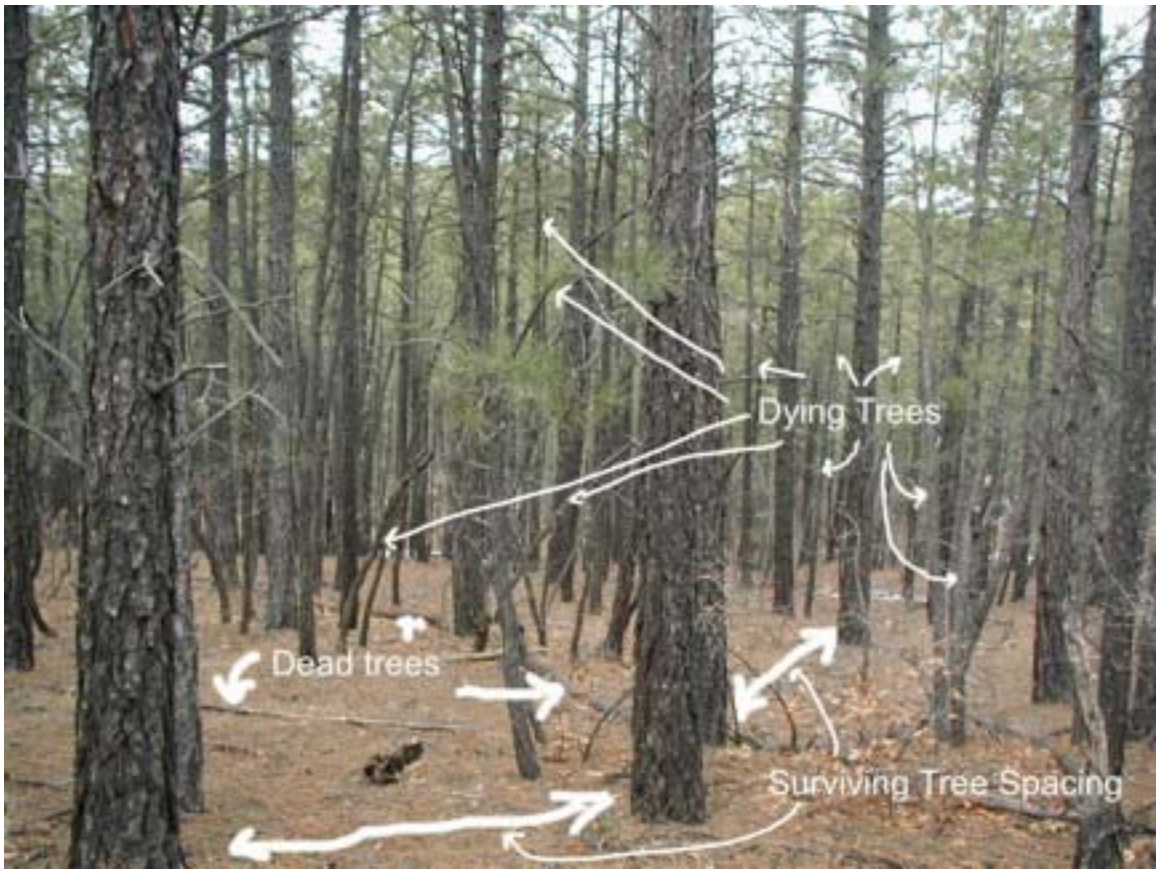
So which of these has or will change and how do these changes affect the probability of fire?

1) The USFS is claiming that the forest health is declining which leads to an increased probability of fire. However, the reverse is true. Following the clear cut of the early 1900s many more trees sprouted that could eventually survive. Continued growth led to over crowded conditions (at least from a human, fire-only point of view). However, over crowding is now killing trees at a faster and faster rate. Everywhere forest canopies have grown together

weaker trees have died and/or are dying. This is has been happening for at least 10 years even though the USFS says it is not happening and will not happen within "geologic time" (as I was told by the USFS NEPA specialist). What I find really interesting is that the spacing of the remaining healthy trees is exactly the same spacing as that of the old growth stumps (I have measured both and they range from 16 to 20 feet apart everywhere you measure). In other words, the forest is healing and will find its own optimum conditions if left alone. And as we know from the very existence of these old growth forests, their spacing was very resistant to fire propagation/damage.

Photograph showing the spacing of old growth trees.

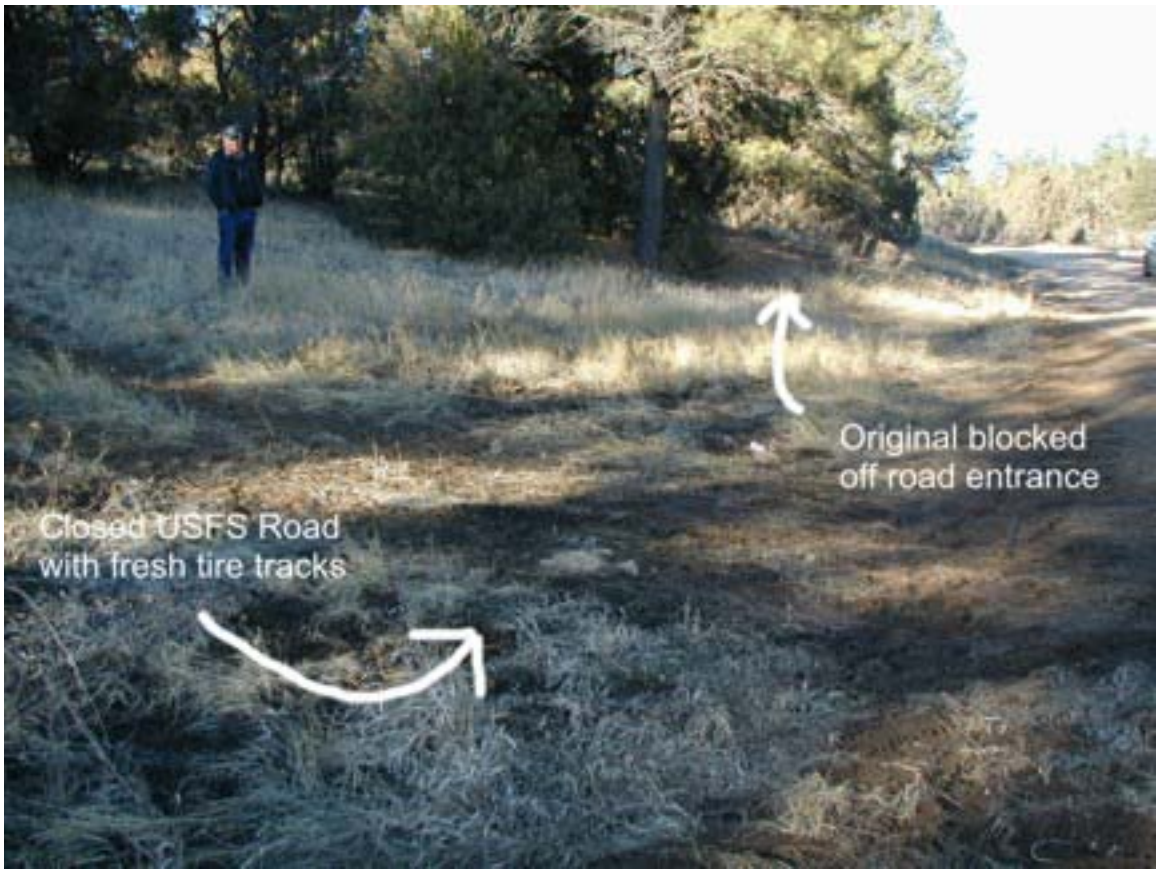
Photograph of old growth treed spacing



Photograph of tree spacing that will result from natural thinning.

2) Planned thinning will increase tree spacing and initially reduce the probability of fire.
3) Ladder fuels will increase as a result of thinning, increasing the probability of fire. USFS states this will happen and they have to use controlled burns to address this problem which leads to the next change.
4) Increased controlled burns leading to an increase in the probability of fire.
5)
6) Increased human caused fires due to thinning activities. First, workers with chain saws, campfires, cigarettes, etc. will increase the probability of fire. Second many miles of new roads will provide access to previously isolated areas increasing the probability of human-induced fire. Although the USFS is stating these roads will be 'closed' following thinning that turns out to not be physically possible. The Mountainair District performed road closures under District Ranger Susan Grey. This was a commendable effort but ultimately it did not work. These 'closed' roads are used now on a frequent basis by trucks, four wheelers, and motorcycles (see photographs below).


Closed USFS Road
with fresh tire tracks


Original blocked
off road entrance
Closed USFS Road
with fresh tire tracks

Also, whenever a path is cleared in the forest, those who have a desire to go will get there. In addition, once a path is cut in the forest it is there for a very long time (see the following photographs).

Photograph of 100 year old road in the Tajique watershed.

Photograph of erosion along a 100 year old road in the Tajique watershed.

7) Decreased health of the forest floor will increase the risk of fire. As the USFS has published, soil moisture plays an important role in the health of the forest and therefore in fire (initiating conditions and water available for trees which decreases the spreading of fire). The reason that the soil moisture will decrease is that the USFS is planning to remove the biomass that they cut in additional to the thinning activities themselves which harm and compact soils. In addition, runoff and soil erosion will increase until other vegetation takes hold. However the decrease in soil cover will hamper subsequent plant growth. Under the Citizen's Alternative, much less land is disturbed and, for the thinned areas, the biomass is left on the forest floor. In addition, thinned trees would be lain perpendicular to hill slopes thereby minimizing the erosive effects of surface water runoff.

Things that will remain the same or are already represented in the historical data include:

1) Drought. While we did recently have a period of relative drought, historically drought is not rare in duration or magnitude. The current forest and the past old growth forest endured many droughts, not the least of which was the severe drought of the early 1950s. Recently climatologists have been stating that drier conditions are the norm (maybe not this year). This does not mean the probability of fire is increasing. It means the forest has survived these

droughts and that the probability of fire (less than 1 chance in 300 years) already includes these dry conditions.

2) Grazing. The USFS research has documented that cattle grazing increases the danger of forest fires by keeping grasses low and encouraging the growth of ladder fuels. Without grazing, fires would stay low to the ground, burning through the grasses. With grazing, the probability of catastrophic fires increases due to the dominance of ladder fuels. Eliminating grazing could reduce the probability of fire as suggested in our Citizen's Alternative. However, grazing occurs now and will continue after thinning. Therefore the probability of fire is unaffected.
3) Responses to fire danger. To no avail, we have continuously pointed out that additional restrictions on forest access during droughts, more lookouts, and patrols, would reduce the probability of fire. However, none of the Alternatives in the USFS EIS chooses to address fire risk in this manner. Therefore, the calculated probability of fire is unaffected.

Now, the question could be asked as to how risk-based decision analysis would analyze the alternatives before the USFS. In most cases, the problem is cast in terms of cost-benefit. However, the combination of probability and costs are combined into something called expected costs. The choice of alternatives is then based on the expected costs. The notion is simple. How does an insurance company decide how much to charge you for fire-risk insurance? Consider the simple case of no profit and overhead costs for the insurance company (we wish this were true, but this is just an example). They use the expected cost of probability times cost of rebuilding. For example, if the cost of the home were $100,000 and here is 1 chance in 100 years that your house will burn down they would charge you $1,000 per year. What are they saying? Simple – over 100 years you will pay them enough to rebuild the house and for 99 of those years you pay, they don't and on the 100th year you pay and they pay for rebuilding the house. Now they actually do their statistics on the whole population of homes and they include overhead, and profit but the basic approach is the same – they can only insure you if they consider the likelihood that a fire will burn down your home, not just the consequence of your home burning down.

In our case, our houses may burn whether or not we thin. Probability is then the term that describes which is more likely and by how much. Therefore, to decide if it is worth it to do the thinning (this is after all our tax money), we must consider how likely it is that our houses will burn down in addition to the value of what is burned and the cost of 'protecting' us.

So what are the costs of thinning? The EIS fails to tell us. However, from their plans it is clear that the USFS is planning to spend an infinite amount of money to reduce the risk of fire by one half. Where is this from? First, the project has an initial contracted amount of $5.9M (from the EIS). This does not include USFS personnel costs of implementing the project (also your tax dollars). Assuming that the costs of the USFS are of the same magnitude gives a total cost of $11.8M (if the USFS will give me their actual costs for

the life of the project I will use those). However, more important, the USFS has stated that continuous thinning, controlled burns, and maintenance are necessary to meet their objectives – continuous being forever. The cost per year doesn't matter, the number of years are infinite therefore the cost is infinite. For sake of discussion, I will assume the total cost of maintenance (post thinning) is $250,000 per year for 20 years (or about 2 USFS employee's full-time costs (not salary)) or another $5M for a total cost of $16.8M. Now where does the one half come from? In previous discussions with the USFS, it appears that the best results (reduction in fires) they have achieved was on an area in Colorado where thinning and fire breaks reduced the frequency of catastrophic fires by one half.

It is interesting to try to understand the financial benefit stated in the EIS. They state that $11.5M will be saved by implementing Alternative 1. That figure includes $9.5M dollars for our joint properties plus fire suppression of $2.0M. It would be nice if, in the real world, our properties were worth $9.5M. However, if a fire starting on USFS property destroys our property, the USFS would not pay any of us a dime. Unless they caused the fire, we would pay to rebuild our homes. And then, why would they include the cost of fire suppression for a fire that they, by definition, did not suppress? It is assumed to have destroyed our $9.5M worth of property.

Of much more importance, in all of their alternatives analyses, they assume with absolute certainty (an impossible probability of 1.0) that catastrophic fire will occur and that fire will be so large it destroys all of our properties. In other words they followed the irrational thinking of focusing only on potential hazard and ignoring the likelihood that such a fire would ever occur.

From a cost-benefit perspective, we can use their hypothetical numbers to highlight a rational decision making process.

First, their costs of the thinning exceed the benefits of protecting our homes so there is no value in any of their actions even if a catastrophic fire is absolutely certain to occur. In other words they are spending $16.8M to save $11.5M. However, for sake of discussion I will work the problem backwards. What cost should we pay to reduce the probability by one half?

There are two alternative courses – either we live with the current low risk (1 chance in 300 years) and pay to have our homes rebuilt in the event of a fire or we pay some amount of money to reduce the risk by one half (1 chance in 600 years) and still pay to rebuild our homes in the less likely event that a fire occurs. In both cases, if a fire occurs we have to pay to rebuild our homes, so you can see that the decision to spend money to reduce the risk must incorporate the probability that a fire will occur. How is that done?

First we calculate the expected cost assuming no risk reduction (current conditions). That expected cost is:

The cost of rebuilding and fire suppression according to the USFS: $11.5M

times the probability that a fire will occur	* 1/300
	= $38,333/yr
	+
plus the cost of no fire occurring (no one's house burns):	$0
times the probability of no fire occurring:	*299/300
	= $0
For a total expected cost of:	$38,333/year

Next we calculate the expected cost assuming some money has been spent to reduce the probability of fire by one half.

If a fire occurs, the cost of rebuilding and fire suppression is the same: $11.5M however the probability is now lower:

*1/600	
	=$19,166/yr
	+
plus the cost of no fire occurring:	$0
times the probability that no fire occurs:	*599/600
	=$0
For a total expected cost of:	$19,166/yr

The results makes sense – if the probability of fire was reduced by one half, the expected cost is reduced by one half and the amount we should rationally spend to reduce the risk is $19,166/yr or $383,320 over 20 years not $16.5M. Or put another way, the USFS could justify spending $383,320 over 20 years to do the thinning they propose if we accepted all of their assumptions and adverse environmental impacts.

In summary, this very simple analysis highlights the critical issues with respect to the decision to thin the forests for fire protection. First, no rational decision can be made without explicitly quantifying the probability that a forest fire will burn down our homes and incorporating that probability into all decisions. Second, the probability of fire will increase as a result of thinning, not decrease. And third, there is no possible justification for the amount of spending on thinning in light of the likelihood that a fire will ever occur and the potential cost averted (the costs if a fire occurs).