United States Department of Agriculture

Forest Service

Southwestern Region

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File Code: 1570-1 (2400)

Date: December 14, 1999

Certified Mail - Return Receipt Requested

Mr. John Talbert
National Forest Protection Alliance
P.O. Box 22488
Santa Fe, NM 87505-2488

Re: Appeal #00-03-00-0005-A215, Fort Valley Restoration (Phase I) Project, Peaks Ranger District, Coconino National Forest.

Dear Mr. Talberth:

This is my review decision on the appeal you filed, regarding the Decision Notice and Finding of No Significant Impact which provide for; thinning 1,700 acres using different approaches, fencing and meadow restoration, relocation/construction of 8 miles of recreation trails, closing/obliterating 19 miles of road following thinning activities, and prescribed fire to reduce fuel loading.

BACKGROUND

On September 10, 1999, Forest Supervisor Jim Golden issued a Decision on the Fort Valley Restoration (Phase I) Project. The Forest Supervisor is identified as the Responsible Official whose decision is subject to administrative review under 36 CFR 215 appeal regulations.

Pursuant to 36 CFR 215.16, you were contacted to discuss informal disposition of the appeal. The record reflects that informal resolution of the appeal was not reached.

My review of this appeal has been conducted in accordance with 36 CFR 215.17. I have thoroughly reviewed the appeal record, including the recommendations of the Appeal Reviewing Officer. My review decision incorporates the appeal record.

APPEAL REVIEWING OFFICER'S RECOMMENDATION

The Appeal Reviewing Officer recommended that the Responsible Official's decision on the Fort Valley Restoration Project (Phase 1) be affirmed.

APPEAL DECISION

After a detailed review of the record doucumented in the enclosed review and findings and the Appeal Reviewing Officer's recommendation, I affirm the Responsible Official's decision on the

Fort Valley Restoration Project (Phase 1).

My decision constitutes the final administrative determination of the Department of Agriculture [36 CFR 215.18(c)].

Sincerely,

/s/ James T. Gladen
JAMES T. GLADEN
Appeal Deciding Officer
Deputy Regional Forester, Resources

Enclosure

cc:
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Forest Supervisor Coconino National Forest
Forestry Staff, R3
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REVIEW AND FINDINGS

of

Forest Conservation Council, Flagstaff Activist Network, Forest Guardians and National Forest Protection Alliance, Appeal #00-03-00-0005-A215

of the

Fort Valley Restoration (Phase I)

ISSUE 1. Public Participation

Contention: The Forest Service has not prepared a supplemental environmental assessment (EA) nor provided the public with the required additional 30-day comment period as required by NFMA regulations

Response: The Forest Supervisor circulated the Fort Valley Environmental Assessment for 30 days for public review and comment in December 1998 (record at 138a, 138b, 154, 205). Comments were received from the public and documented in the Section B of Addendum #1 to the Fort Valley Environmental Assessment. Only one of the seven appellants chose to offer comments on the EA (record at 206). The Forest Supervisor made a decision to implement a portion of Alternative B on April 26, 1999. The decision was appealed and subsequently remanded on August 3, 1999, for additional documentation. Administrative appeal reviews include not only the EA, but the entire process record.

The documentation requested by the Appeal Deciding Officer was added to the project record (record at 250, 255, 255a, 256) and a new decision was made on September 10, 1999 (record at 257). A brief addendum to the Fort Valley EA was prepared noting that the additional project record documentation was completed and that the effects disclosure in the EA did not change.

The Fort Valley EA was circulated for public comment as required by regulation at 36 CFR 215.5 and 215.6 in December 1998. The aforementioned regulation includes no requirement for a second review of the same document. Since the EA did not materially change, neither the intent nor the letter of the regulation would be served by taking comment on the same information twice.

Finding: The Forest Supervisor complied with the requirements of 36 CFR 215. 5 and 215.6.

ISSUE 2a. Environmental Documentation - The Forest Service must prepare an environmental impact statement analyzing the direct, indirect, and cumulative effects of the Fort Valley project in combination with similar projects planned on Forest Service lands in the immediate vicinity. The project has a high degree of controversial and uncertain effects; and therefore, an EIS is required.

Contention: Appellants allege that the "projects are highly controversial, in a scientific sense, involve highly uncertain effects and involve unique or unknown risks related to fire, Northern Goshawk, and old growth management (40 CFR § 1508.27 (b) 4, 5)" and therefore, are significant.

Response: As it relates to the determination of significance, the term "controversial" refers to a substantial dispute existing as to the size, nature or effect of the federal action. The past and present research that has been and is being done on the benefits of thinning from below and the benefits from prescribed fire, are considerable. Thinning from below, fuel bed treatment, canopy spacing treatments, and periodic low intensity prescribed fire activities, are supported by most scientists and researchers who work from within and study and research fire adapted ecosystems.

The project analysis included extensive coordination and agreement with the Arizona Game and Fish Department and the U.S. Fish and Wildlife Service. Both of these agencies supported the Forest Service's decision (AR #157, 188). Scientific references were used to substantiate analysis of effects. In response to public comments (AR #206, p. 41) these references were updated and are included in *Addendum #1 to the EA* (AR #206, pp. 104-107). In addition, as a part of the project analysis, a comprehensive list -- *Studies in the Southwestern Forest Health Restoration and Wildland-Urban Interface Fuels Management Research Programs* -- was compiled by the Grand Canyon Forests Partnership to support predicted effects of the project proposal and alternatives.

It is inappropriate to make valid inferences about the impact of logging on fire potential without addressing the issue of fuels treatment. Logging without subsequent fuels treatment can be expected to increase the probability of fire occurrence and, under most conditions, the severity of fire. Logging, in conjunction with fuels treatment, can reduce the potential for catastrophic wildfires, if the fuels treatment is of good quality. Good quality fuels treatments effectively reduce the fuels that contribute to crowning, torching and spotting, and reduce the ecological damage of subsequent wildfires. Fuels change with time and the length of time that a treatment will remain effective varies with treatment and site potential. Therefore, proper fuels management must incorporate periodic reassessment and re-treatment.

The reference to Huff et. al. (1995) (pg. 5, line 14) is a quote from their abstract. They used repeated aerial photography to determine the degree of change in 49 watersheds varying in size from 12,500 ac. to 33,300 ac. They did not determine mapping accuracy (pg. 4). Huff et. al. (1995) assigned fuel models on the basis of whether or not areas were logged or unlogged. No information was available on fuels treatments (pg. 5). Therefore, their fire behavior analysis is based on logged versus unlogged areas regardless of actual fuel conditions. Their analysis was limited to low to moderate intensity surface fires (pg. 5) ignoring crown fire potential. Therefore, the extreme fire behavior potential (crown fires) in unlogged stands was left out of their analysis. This is not a valid comparison. Furthermore, the trends reported by Huff et. al. (1995) were not statistically significant (pg. 8). The primary issue in the Fort Valley treatment area is mitigation of the most extreme fire behavior (crown fires). The Fort Valley Restoration Project proposes to implement the recommendations of Huff et. al. (1995) (pg. 36).

It is true that fuels treatments cannot prevent all fires. Even quality fuels treatments may not protect an area from burning under the most extreme weather conditions. However, it is generally accepted that quality fuels treatments reduce fire damage. The appellants cite an

unpublished report on the Tyee fire in Washington to claim, "... that harvest treatments could exacerbate fire damage ..." (pg. 5, line 23). However, Pollet and Omi (1999, paper presented at JFSC Fire Conference "Crossing the Millennium: Integrating Spatial Technologies and Ecological Principles for a New Age in Fire Management, June 15-17, 1999, Boise, ID; in press) found that fuels treatment reduced fire damage on study areas in four wildfires including the Tyee fire. This would appear to support the appellants' claim that treatment results are variable and far from certain. However, the quality of fuels treatment is difficult to ascertain after a wildfire and the time since treatment was done affects fire potential. The Fort Valley Project proposes to determine the effectiveness of treatments and how treatment effectiveness changes with time. Pollet and Omi (1999) also studied the 1996 Hochderffer fire on the Coconino National Forest near the proposed Fort Valley Restoration Project area.

The appellants cite Weatherspoon and Skinner's (1995) (pg. 5, line 33) analysis of stand damage resulting from the 1987, wildfires in northern California. While it is true that Weatherspoon and Skinner (1995) found partial cut stands suffered more damage than uncut stands ("partial cut" is the terminology used by Witherspoon and Skinner, "thinned" is the terminology used by the appellants), the appellants choose to ignore the fact that the partial cutting conducted in the California stands was predominantly an overstory removal (i.e. cutting the largest most valuable trees) followed by little or no slash treatment. The results of such treatments can be expected to result in high damage as Weatherspoon and Skinner point out (pg. 444). Such harvesting and fuel treatments are not representative of those proposed in the Fort Valley Restoration Project. To quote Agee (1997, Northwest Science 71 [1] pgs. 153-156) who reviewed this paper, "...the major implication of this study is less an argument against logging than an argument against the types of logging and fuel treatments that were done in the past.") (pg. 155).

The appellants cite VanWagtendork (1996) (pg. 6, line 5). They ignore his conclusion that "... a management scheme that includes a combination of fuel treatments in combination with other land management scenarios is critical for successfully reducing the size and intensity of wildfires," (pg. 1164). By "... other land management scenarios ..." Van Wagtendork is referring to "removing a portion of the canopy ..." to reduce crown fire potential. A major goal of the Fort Valley Restoration is to reduce the potential for catastrophic crown fires.

The appellants cite Stephens (1998) (pg. 6, line 12). They correctly conclude that "restoration" treatments that include partial cutting without fuels treatment lead to more severe fires. Thinning without fuels treatment is, at best, only a partial restoration. Stand structure may be restored to some former condition, but other stand processes are not restored. The Fort Valley Restoration Project does not propose to leave fuels untreated except in small experimental plots that have a low probability of being burned by wildfire.

On page 6, lines 21-30 the appellants cite a secondhand newspaper account of research performed by Jack Cohen, RMRS Fire Sciences Lab, Missoula. It does not appear that they have looked at Jack's research or understand the context of his results. Jack's Structure Ignition Assessment Model (SIAM) looks at the likelihood of a structure being ignited by radiation from an approaching fire or from an ember igniting burnable surfaces such as shake shingles. Experimental results show that radiation drops rapidly with distance from the flame wall. Radiation fluxes sufficient to melt vinyl siding are not sufficient to ignite a structure or exposed wood surface. Thus the model does not predict the potential for damage to property, landscaping, etc., only the potential for catastrophic loss from excessive radiation, flame contact,

or a firebrand ignition. The potential for an ember to get embedded in an eve, in a wood pile, under a wood deck, etc., and igniting the structure depends on the building design and materials. The likelihood of a fire creeping up to the base of a house and igniting it would be determined by local landscaping. It is not the role of the Forest Service to dictate how private property is developed. The building materials used are determined by building codes and zoning regulations. There are two issues that are relevant to management of National Forest lands. First, the landscape needs to be managed so as to conserve and sustain goods and services from the National Forest. Among these are a generally healthy forest. Catastrophic wildfires are not consistent with this goal. The second is to minimize the potential for severe fires, particularly crown fires, that threaten private property. Management of the forest to prevent crown fires minimizes the potential threat to forest health and private property. If a fire can be stopped before it approaches a structure, then the landscaping around the structure is irrelevant. This is the intent of the Fort Valley project.

Numerous papers document the value of fuel treatments, often in conjunction with reducing stand density, for reducing fire potential. The appellants cite several of these papers. Each of the cited papers provide additional citations documenting the value of reduced stand density and/or fuel treatments for reducing the potential for catastrophic wildfires. The appellants pick and choose key phrases that build their case while ignoring the context and conclusions of the papers they cite.

The prediction of fire behavior and effects are not exact sciences. However, there is a substantial body of knowledge that supports the value of quality fuels treatments. There is also a strong body of evidence supporting the notion that crown fire potential is reduced by reducing canopy density and raising crown base height (c.f., ftp://fire.org/pub/NEXUS). The general consensus in the fire science community is that lower stand densities and reduced fuel volumes are necessary to maintenance of "fire safe" forests. As Agee points out (1996, pgs. 52-68 in: Proceedings 17th Forest Vegetation Management Conference, Redding, CA), "... "fire safe forests are not fire proof, but will have:

- Surface fuel conditions that limit surface fireline intensity;
- Forest stands that are comprised of fire-tolerant trees, described in terms of species, sizes, and structures;
- A low probability that crown fires will either initiate or spread through the forest."

The single most ecologically damaging and life threatening forest fire is the crown fire. The intensity of crown fires prevents direct fire suppression. The massive blizzard of embers associated with crown fires leads to long range spot fires which circumvent areas with little fuel. The presence of numerous spot fires leads to erratic fire behavior and rapid acceleration in a fire's growth. The most critical element in fire management is the prevention of crown fires. This is a primary goal of the Fort Valley Restoration Project. The preponderance of scientific literature strongly supports the fuels management goals of the Fort Valley Restoration Project.

Appellants allege that there is uncertainty of effects to the habitat of the northern goshawk. This is based on a "white paper" published by the Arizona Department of Game and Fish in 1993. However, the Arizona Department of Game and Fish has provided a letter as an interested party to the appeal dated July 6, 1999, in which they state "We also disagree with the level of concern expressed in the appeal regarding the impacts on the viability of spotted owl and goshawk

populations." It is clear that, in this instance, AZ G&F does not dispute Forest Service findings concerning these species.

The appellants also claim that logging in existing and recruitment old growth stands is highly controversial. However, appellants repeatedly claim that the lack of "big trees" is a major concern for the area in general, including old growth areas. Old growth areas in particular are usually characterized more by big trees than by any other attribute. There is research within the Fort Valley Restoration area at Taylor Woods that clearly shows that thinning the Forest is the best way to develop large trees, without which recruitment old growth stands will never achieve old growth function. Dr. Covington has stated that removal of small trees that are competing with large, old trees is necessary to retain the old trees. Furthermore, the Decision Notice states that no trees over 16 inches DBH will be cut. There is no controversy over the effects of the proposed action.

Finding: The Forest has done a thorough search of the literature on the subject and has shown that there is no substantial dispute concerning the anticipated effects of the action.

ISSUE 2b. The cumulative effects resulting from the project are significant and therefore an EIS is required.

Contention: Appellants allege that the "Fort Valley project is related to other actions with significant cumulative effects (40 CFR 1508.27 (b) 7)."

Response: The analysis must consider whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or breaking it down into small components parts (40 CFR 1508.27 (b) (7).

The project record includes an analysis of the cumulative effects of the proposed action with the remaining actions contemplated for the Flagstaff Urban Interface as described on pages 2 and 3 of the EA (record at 255 and 255a). The analysis points out that another analysis is underway for the Flagstaff/Lake Mary Ecosystem which might result in new management direction for the Flagstaff urban interface. The analysis concluded that while there is intent to investigate other parts of the Flagstaff urban interface, future actives are not known.

Finding: The Forest Supervisor appropriately found, "The effects of this project, when viewed incrementally with effects of past, present, and reasonably forseeable actions are not cumulatively significant.

ISSUE 3. The project's cumulative effects analysis is inadequate.

Contention: Appellants allege that the Forest Service did not complete the cumulative effects analysis required by NEPA, citing text in Addendum #3 which states, "The interdisciplinary team cannot conduct a cumulative effects analysis for future management..." Appellants claim that regulation at 40 CFR 1502.22 requires consideration of a range of scenarios when essential information is incomplete or unavailable. The appellants allege that "There are two major

shortcomings of the EA and project record in their treatment of cumulative effects: (1) while the EA lists activities that may result in cumulative effects, the analyses of effects on particular resources (vegetation, wildlife habitat, water/soil, air quality, recreation, fire, cultural resources, and roads) are devoid of any mention of cumulative effects, and; (2) the most significant cumulative effects known (the other 9 10K projects in the vicinity, as well as development and logging on private lands) are missing from the list of projects on page 101 of the EA allegedly considered in the cumulative effects analysis."

Response: Cumulative effects are the effects on the environment which result from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result in individually minor, but collectively significant actions taking place over a period of time. (40 CFR 1508.7)

The statement from Addendum #3, cited by appellants is arguably misleading. It leads the reader to conclude that the cumulative effects analysis excluded future actions and was therefore incomplete. The record indicates future actions were considered and found to be of an indeterminate nature (record at 255 and 255a).

Appellants claim that 40 CFR 1502.22 requires consideration of various scenarios is incorrect. This requirement was replaced in April 1986 (15 FR 15625, Apr. 25 1986). Both the original regulation and the replacement apply to preparation of an environmental impact statement (EIS).

The courts have implied that consideration of the impacts on the existing environment necessarily takes into account earlier and present actions and their effects. Therefore, an analysis of the existing environment is consideration of the effects of past and present actions. The EA (Chapter 4, pp. 38-102) and effects reports (record at 71, 92a, 122, 124, 129, 133) adequately describe in detail the existing environment and the past and present (ongoing) actions that shaped them.

The EA mentions that the Fort Valley Restoration Project is the "...first unit selected by the Partnership..." The EA also states, "It is the intent of the Partnership [Forest Service and the Grand Canyon Forests Foundation] to study one 10,000 acre unit (area) per year for the next 10 years." (EA, p. 2 and 3) These statements imply that something is known about reasonably forseeable future actions. The project record however, includes an analysis of the likelyhood of future projects and the speculative nature of future activities in the Flagstaff urban interface. The record also includes consideration of the cumulative effects on vegetation, wildlife habitat, water/soil, air quality, recreation, fire, and roads (record at 255, 255a, 256).

The cumulative effects analysis includes consideration of ongoing and forseeable future activities in the project vicinity. Other actions were reviewed for their potential for incremental effects when combined with the effects of the Fort Valley activities. Actions that the interdisciplinary team found to have potential for incremental effects are documented (record at 255).

Finding: The project record indicates that a cumulative effects analysis was completed and included consideration of reasonably forseeable actions. 40 CFR 1502.22 does not require consideration of scenarios as alleged. The record includes consideration of cumulatives effects on the components of the human environment. The cumulative effects analysis is adequate for

an informed decision and for the purpose of determining significance and whether or not an EIS is needed.

ISSUE 4. Forest Plan Adequacy

Contention: Addendum #3 to the Fort Valley Environmental Assessment makes the claim that the 1987 Coconino National Forest Plan adequately assesses the cumulative impacts of the proposed action. Appellants claim this is false because cumulative impacts must be analyzed at both the programmatic and project levels. Appellants also assert that the cumulative effects is being put off on the upcoming Flagstaff/Lake Mary Ecosystem Analysis.

Response: Appellants are correct in their assertion that cumulative effects must be considered at both the Forest Plan level and project level. The Forest Plan EIS, not the Forest Plan, analyzed cumulative effects of management across the National Forest. The statement in question is attempting to point out that the environmental assessment is tiered to the Forest Plan EIS, where the effects of the activities under analysis were considered in a broader context. Cumulative effects were analyzed at the project level as discussed previously. Statements about the upcoming Flagstaff/Lake Mary Ecosystem Analysis were made to further point out the uncertain nature of future activities in the area. The Flagstaff/Lake Mary Ecosystem Analysis is examining forest plan direction at the programmatic level and might change the types of activities proposed in the Flagstaff area in the future.

Finding: The statements with which appellants take issue are confusing. However, the record includes a cumulative effects analysis adequate for an informed decision and for the purpose of determining significance and whether or not an EIS is needed.

ISSUE 5. No-harvest alternative

Contention: The Forest Service is required to analyze a no-harvest alternative when proposing stewardship projects. Appellants quote Forest Service Manual 2432.22c stating, "Where timber harvest is proposed primarily for the purpose of achieving forest stewardship purposes... a full range of alternatives, including practical and feasible non-harvest options, must be analyzed in the environmental process."

Response: The formulation of alternatives is driven by significant issues identified in scoping 40 CFR §1501.2(c). For an alternative to be reasonable, it must meet the stated purpose and need, and address one or more issues. While the manual appropriately calls for a full range of alternatives, it goes on to state, "It is not necessary to include harvest or non-harvest options that are not practical or feasible from a biological, social, or legal standpoint or those that do not meet forest plan objectives or standard and guideline requirements..."

The record shows that a no-harvest alternative was considered. A prescribed fire alternative was discussed by the interdisciplinary team and eliminated from detailed study at a meeting on the 10/13/98 (record at 120). The team dropped the alternative from further study because it did not meet the project objectives (purpose and need). A "zero cut" was also considered and dropped

for the same reasons. The EA describes the prescribed fire alternative and why it would not meet the purpose and need for action and was therefore dropped from detailed study (EA page 15).

Finding: The analysis appropriately considered a no-harvest alternative, consistent with NEPA and it's implementing regulations and Forest Service Manual direction.

ISSUE 6. Water Quality

Contention: The Fort Valley EA and project record are devoid of any discussion or analysis of impacts to water quality.

Response: Water quality was not an issue in this project planning due to the fact that there are no perennial streams in the project area (AR 138, PPI. The water issues in this project area were appropriately focused on water yield. The EA did discuss the relationship of roads to non-point source pollution. Other considerations for water quality were also made, in that the scoping document and EA were sent to the Arizona Department of Environmental Quality, Surface Water Bureau for their comment (AR 11A & 138). No comments from ADEQ were received. In addition, Best Management Practices, those measures designed to minimize non-point source pollution to streams, are described for this project (AR 138, p. 34, 74, 76). Finally, the decision included actions for road obliteration and riparian restoration (AR 204) that will have a positive effect on downstream water quality.

Finding: Water quality discussions were appropriate and adequate.

ISSUE 7. Old growth allocation: The Forest Service has not allocated old growth in accordance with the 1996 plan amendments.

Contention: Appellants maintain that the EA and project record fail to establish that forest plan procedures for allocating old growth were followed. Appellants also state that there was no analysis of old growth distribution and function at multiple scales; no analysis of risks to sustaining old growth; no analysis that considered spatial arrangement of old growth areas and how that would benefit old growth related species; and no documentation of the process used to select management techniques.

Response: Twenty-three percent of the Fort Valley Landscape has been allocated for old growth management. Areas of old growth management are described and discussed on pages 62, 63, 67, 68, and 71 of the Environmental Assessment and pages 4-5 of Addendum #1 to the Fort Valley Environmental Assessment.

Forest plan old growth standards and guidelines require that an analysis be conducted at one scale above and one scale below the ecosystem management area.

Old growth analysis was conducted at multiple scales. At the scale above the ecosystem management area, old growth allocations to the South (A1 Ecosystem Analysis), the North (Kachina Peaks Wilderness), West (Wing Mountain Area) and East (Elden Area) were considered. Allocations in the Fort Valley project area tie to old growth allocations made on the

A1 Analysis area connecting a wildlife movement corridor. Additional allocations in A1 tie to Wing mountain and old growth allocations made on the Western portion of the Fort Valley EA (within the Pearson Goshawk PFA). On the northeast portion of the Fort Valley project area, old growth allocations included a block of mixed conifer within the Orion Springs PAC which connects to old growth located within the Kachina Peaks Wilderness and continues into the Elden Area. The last block described also lies within a wildlife movement corridor.

Old growth patch size is variable. Blocks of old growth within Fort Valley total several hundred acres incorporating Mexican spotted owl PAC's Northern goshawk PFA's, extending into adjacent planning areas and include the wildlife corridor. Blocks have been designed to provide for a variety of wildlife species dependent upon old growth structure, including Black bear, Mexican spotted owl, Brown creeper and Northern goshawk.

Analysis at one level below the ecosystem management area was conducted at the stand level. Addendum #1 to the Fort Valley EA states on page 4 that existing old growth stands were identified during field reviews and included stands that met or nearly met the old growth definition in the forest plan amendment (AR 206). This document further states that stands selected for old growth management were chosen because they had higher numbers of large trees.

Finding: The responsible official analyzed old growth at the appropriate scales, consistent with forest plan direction.

ISSUE 8. Viability - "The Fort Valley project (Phase I) will jeopardize the viability of species that find optimal habitat in interior forests, natural disturbed areas, and old growth."

Contention(a): "Habitat fragmentation will result from logging and roadbuilding activities planned in the Fort Valley project (Phase I)..., and is an underlying cause of many of the predicted adverse effects on native species."

Response: The sources used to describe the predicted effects of fragmentation are from studies in Eastern Forests where the fragmentation described is a patch of forest within a sea of non-forested land, often surrounded by urban development or rural farms. This is not the case in the Fort Valley Project Area where the Forest is in large blocks with treatments proposed within a portion of the Forest. Wilcove (1988), Finch (1999) and others have identified that the fragmentation effects are not found, or they are inconclusive, from studies of internal fragmentation of large forest tracts such as found at Fort Valley.

The effects of fragmentation in Eastern Forests that affect neotropical migrants are described; as high rates of nest predation, high rates of brood parasitism, high rates of interspecific competition, reductions in pairing success, and reduction in nesting success with patches less than 20 ha in size having few if any neotropical migrants present. Wilcove (1998) identified that while neotropical migrants were showing declines, permanent residents and short-distance migrants usually exhibit stable or even increasing populations within these same forests.

Several reasons were identified. First, the small patches in Eastern Forests are often surrounded by areas with high levels of nest predators, i.e. dogs, cats, crows, jays, etc. Several studies have

shown essentially no difference in predation rates between edges and interior forests where these high levels of predators do not exist (Wilcove 1999). Second, the rural areas often have high levels of cowbirds present increasing nest parasitism. Third, the small patch size and large distances between patches of forest habitat in the East may not allow individuals to find a mate if the population is low and competition for the small amount of available habitat is high.

For most if not all of the species using ponderosa pine habitat, thinning and fragmentation are not equivalent to each other (Shroufe 1999). The conditions described above for Eastern Forests where the effects of fragmentation are found to be high, do not exist in the Fort Valley Project Area. Thus any effects of fragmentation are not expected to be high and the effects may not be present at all.

Contention (b): "For most of the imperiled species affected by the Fort Valley project, the Forest Service has no up-to-date population data describing population numbers, locations, trends, nor monitoring data on which the agency can rely to determine that the actions proposed in the context of Fort Valley project (Phase I) will maintain numbers and distribution of these species sufficient for insuring long term viability."

Response: Northern Goshawk: There are three post-fledging family areas (PFA) in the Fort Valley Project Area and one adjacent to it. Based on inventories between 1991 and 1997, the District has concluded all suitable nesting habitat in the Fort Valley Project is currently within a PFA. Including foraging habitat, the entire Fort Valley Area is within Goshawk habitat. Monitoring has been conducted since 1991. Although no trend was provided by the Forest, young have been produced on a regular basis in three of the four areas, with two areas producing young in 1998. The Arizona Department of Game and Fish (Shroufe 1999) supports the project and does not agree with the level of concern for goshawk viability expressed by the appellants.

Mexican Spotted Owl: There is one Mexican spotted owl Protected Activity Center (PAC) within the Fort Valley Project Area and one adjacent to it. No suitable habitat for the owl is within the treatments proposed in Phase I. Road closures, trail relocations, and camping restrictions proposed with the project will reduce the existing impacts recreational activities are having on the owls within the project area, and thus will benefit the Mexican Spotted Owl. The U.S. Fish and Wildlife Service (Harlow 1999) found the activities proposed by the Fort Valley Project would not jeopardize the continued existence of the owl. A take statement was issued by FWS because the beneficial activities would not occur until after the 1999 breeding season, and thus recreation would still affect the owls in this PAC.

Flammulated Owl : The Forest reported finding several Flammulated Owls during Mexican Spotted Owl surveys, and have estimated there may be as many as 10 or 12 pairs in the area. Given the condition of the habitat and the paucity of old growth or mature forest, this figure may be high. No inventories have been conducted specifically for Flammulated Owls. No trend information was provided by the Forest, but the Arizona Department of Game and Fish (Shroufe 1999) does not consider this good habitat for Flammulated owls, and thus the Fort Valley Project should not have an effect on the viability of the species.

Bald Eagle: No Bald Eagle winter roost sites are located within the Fort Valley Project Area, but one is located several miles to the south. Sites chosen for winter roosting by the eagles are generally on slopes in large trees. None of the areas proposed for treatment are on slopes like

those used for eagle roosts, and no trees greater than 16 inches in diameter will be removed. Thus the Forest made a "may affect, not likely to be adverse" determination which was concurred with by FWS (Harlow 1999).

Abert's Squirrel : The thinning proposed in the Fort Valley Project will result in more open forest stands. This will result in less closed forest conditions needed by the squirrel for nesting and during severe winters. The thinned stands will still provide foraging habitat for squirrel use during spring, summer, and fall as well as, during less severe winters. The Arizona Department of Game and Fish (Shroufe 1999) anticipates and accepts that thinning treatments will negatively impact the squirrel in some of the treated areas. The Department is considering conducting more research to better understand the relationship between squirrel use of disjunct stands of ponderosa pine.

Neotropical Migrants: Seventy five percent of the birds using ponderosa pine forests on the Coconino National Forest use it as fringe, transient, or summer habitat (Forest Service 1997). Sixty one percent of these birds are passerines. Passerine use is highest in mature and especially old growth stands. Use by canopy density is evenly distributed across the three classes, 0-40%, 41-60% and 61-100%, with a slight preference for the 41-60% category. The thinning treatments in the Fort Valley Project will not reduce mature and old growth stands, and will decrease the time it will take for these sites to become mature forests. Since neotropical migrants use all structural stages and canopy closure classes, some species will be favored by these treatments and some will be adversely impacted (Finch 1999), while other treatments in other parts of the Forest will favor other species.

In Summary: Habitat conditions for management indicator species (MIS), threatened, endangered, and sensitive (TES) species, and the appellants' species of concern will generally be maintained or improved by the road and recreation management (through road and trail closures and/or relocation and camping restrictions) and silvicultural treatments proposed for the project area (Randall-Parker, 1998; Randall-Parker, et al, 1998; and Golden and Neary, 1999). Some short term reductions in quality may exist for several sensitive species as a result of prescribed fire, but these should return to existing or better condition in a short period of time and would not affect overall species viability (Randall-Parker, 1998; and Randall-Parker, et al, 1998). Abert's squirrel, neither an MIS or TES species, would have a slight decrease in habitat capability resulting from the project, but species viability would not be affected by this localized reduction in habitat quantity (Shroufe 1999).

Finding: Implementation of Phase I of the Fort Valley Project will maintain or improve the condition and/or amount of habitat for MIS and TES species found within the project area. Thus, there will be no reduction in the viability of these species. The Forest has found and the Arizona Department of Game and Fish has agreed that the proposed action will not jeopardize species viability for the appellants' species of concern. Also, the U.S. Fish and Wildlife Service concurred the proposed action would not jeopardize the viability of listed or proposed species found within the project area.

ISSUE 8a. Northern Goshawk nest sites and PAFs

Contention: "While the EA and T&E&S Evaluation...state that three goshawk nests and PFA's occur in the Fort Valley area, there is no indication that the requisite number of nests sites have been designated, that the nest sites are the proper size, or that the minimum acreage of nests per PFA has been met."

Response: The A-1 BA&E (pages 31,50,51) and the Fort Valley BA&E (pages 3-6) discuss the nesting and potential nesting habitat within the A-1 and Fort Valley projects, there is no direct evidence the Forest established the required 6 nests per PFA (# existing and 3 potential), that they are approximately 30 acres or more in size, that they total at least 180 acres, and that they are identified on a map. This is a standard requirement when establishing a PFA. There is also no evidence the Forest did not establish the 6 nest sites and just not display this in their EA and BA&E's. In A-1 they identified there was over 1,300 acres of potential nest habitat and that over 1,000 acres was to be managed as such. In Fort Valley they identified that PFA's had been established for all three sites and for a fourth site just outside the project boundary.

Finding: The Forest identified they established the 4 PFA's. Since identification of existing and potential nest sites is part of the PFA establishment, it can be assumed they have done so, especially in light of the supporting evidence about managing potential nesting habitat. Since the Forest did not provide documentation of this, I recommend they amend their Fort Valley BA&E to incorporate a map with the number and size of nest and potential nest sites for each PFA prior to implementing this project.

Contention: Failure to specify hand tools for treatments within goshawk nesting sites violates the Forest policy amendments. "The EA and T&E&S-Project File #2...do not state that hand tools are to be used within goshawk nesting territories, although many acres within the PFA's will be treated."

Response: The EA identifies it is implementing the Forest Plan Standards and Guides for the Northern Goshawk. These Standards and Guides identify the following:

> In nesting areas--use hand tools and fire to reduce loads, lop and scatter, hand pile, no dozer or grapple piling.
>
> Outside of nesting areas--limit piling debris, use hand or grapple piling when debris piles are necessary, limit the use of dozer for piling or scattering debris.

Finding: The Forest is meeting the Forest Plan Standards and Guides for the Northern Goshawk. It does not need to reiterate every portion of these Standards and Guides in an EA.

ISSUE 9. Socio-Economic Analysis - The economic analysis fails to assign any economic value to existing uses of the area, and fails to consider the externalized economic costs of logging.

Contention: The appellants allege that "the Forest Service has failed to complete an economic analysis of the Fort Valley project that provides the public with a full and fair accounting of net economic benefits."

Response: Forest Service Manual (FSM) 1970 and Forest Service Handbook (FSH) 1909.17 contain detailed guidelines for conducting economic and social analysis. However, FSM 1970.3(6) states, "Select cost effective methods of conducting economic and social impact analyses to ensure that the degree of analysis is commensurate with the scope and complexity of the proposed action." Obviously not every project requires the same level of analysis. FSM 1970.6 adds, "The responsible line officer determines the scope, appropriate level, and complexity of economic and social analysis needed." An EA should briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact (40 CFR §1508.9). Economic effects are not intended by themselves to require preparation of an EIS (40 CFR §1508.14). Economic effects of the project were not identified as an issue at any time prior to the decision. Therefore, economic effects were not needed as a basis for alternative development or comparison. The level of economic analysis is commensurate with the scope of the proposed action.

The purpose of the economic analysis in an EA is to assist in decision making. The Forest has prepared an economic analysis (AR 132) which displays estimated costs and returns of the alternatives for the decision maker. A summary of this analysis is displayed on page 100 of the EA.

FSH 2409.18 section 22 states that a financial analysis should be made to determine financial efficiency of timber sales. While the Fort Valley Project is not a timber sale per se, it has some of the aspects of a timber sale. The analysis in AR 132 is a financial analysis and meets this requirement.

Finding: The economic analysis is consistent with regulation and manual and handbook direction.

ISSUE 10. Expertise - Forest Service failed to utilize professionals with appropriate expertise.

Contention: The expertise of the interdisciplinary analysis team is inadequate for a project of such scale and uncertain consequences as the Fort Valley Project.

Response: Forest Service Handbook 1909.15 Sec. 12.1 directs that the disciplines and skills of the interdisciplinary team must be appropriate to the scope of the action and the issues identified. The teams will consist of whatever combination of Forest Service staff and other Federal government personnel is necessary to provide the necessary analytical skills. The Forest Service assembled an interdisciplinary team composed of journey level professionals representing many different land management specialties. In addition, the analysis was done in consultation with professional biologists from the U.S. Fish and Wildlife Service and the Arizona Department of Game and Fish and with experts from Northern Arizona University like, Dr. Wallace Covington, who is a nationally recognized expert in ponderosa pine ecosystem restorations. The Forest Service research branch was also involved through Dr. Carlton Edminster, who has extensive credentials in modeling to predict growth in forest stands.

Finding: This team is eminently qualified for this analysis.

ISSUE 11: Conservation of Forests - Forest Service is contributing to a vast global waste of wood products.

Contention: The Forest Service has failed to meet substantive obligations to conserve forests and promote use of recycled materials.

Response: Although this is a restoration project, timber harvesting will be done through timber sale contracts to meet the stated objectives in the EA. All commercial wood and pulpwood will be removed. Noncommercial wood will be made available to locals as fuelwood, fence posts, poles and/or special products all of which may or may not require a permits. If there is a market for chips this material could be utilized and chipped on site or hauled and taken to a collection center that may use this material locally. It is also recognized that not all material will be utilized, such as thinning and logging slash debris. Most of this debris will be burned to reduce the fire hazard. What is not burned will be left to provide ground cover and over time be recycled back into the ecosystem.

A key element of the Grand Canyon Forest Partnership will be the creation of a business sector based on ecologically and economically sustainable utilization of forest products. Businesses may include primary producers of forest products such as dimension lumber, wood chips and firewood as well as "value added" products such as bioenergy materials, and furniture (page 2 of EA).

Finding: The Forest Service has not failed to meet it's substantive obligations to conserve forests and promote use of recycled materials.