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Record of Decision

Rodeo-Chediski Fire Salvage Project

Apache-Sitgreaves and Tonto National
Forests



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RECORD OF DECISION

Rodeo-Chediski Fire Salvage Project

Apache-Sitgreaves and Tonto National Forests

Black Mesa, Lakeside and Pleasant Valley Ranger Districts

Coconino, Gila and Navajo Counties, Arizona

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Table of Contents

Decision and Reasons for the Decision.....	1
Decision.....	5
Reasons for Selecting This Decision.....	8
Other Alternatives Considered.....	13
Public Involvement.....	17
Findings Required by Other Laws and Regulations.....	20
Environmentally Preferred Alternative.....	26
Appeal Provisions and Implementation.....	26
Appendix A – Management Requirements and Mitigation Measures.....	29
Appendix B – Wildlife Management Restrictions.....	35
Appendix C – Monitoring Requirements.....	39
Appendix D – Response to Comments.....	43
Appendix E – Errata.....	73
Appendix F – Comment Letters	
Word Index	

RECORD OF DECISION

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**USDA Forest Service
Black Mesa and Lakeside Ranger Districts, Apache-Sitgreaves National Forests
Pleasant Valley Ranger District, Tonto National Forest
Coconino, Gila and Navajo Counties, Arizona**

Pursuant to 40 CFR 1503.4, upon review of the responses to public comments received upon circulation of the Draft Environmental Impact Statement (DEIS), only minor corrections to the DEIS were required and the agency did not need to supplement, improve, or modify its analysis; therefore the DEIS was not reprinted as a Final Environmental Impact Statement (FEIS). The decision and supporting documentation, Forest Service responses to comments, errata to the DEIS and copies of comment letters (Appendices D, E and F) are displayed in this document (40 CFR 1502.19).

Decision and Reasons for the Decision

This Record of Decision (ROD) documents the decision to implement Alternative 4 for salvage of dead trees resulting from the Rodeo-Chediski Fire of 2002 on the Apache-Sitgreaves and Tonto National Forests. This decision was reached after careful consideration of all the alternatives analyzed in the DEIS and comments from the public, local governments and other agencies. This document describes the choices and reasons for this decision.

Background

On June 18, 2002, the Rodeo Fire was ignited on the Fort Apache Indian Reservation near Cibecue, Arizona. On June 20th, the Chediski Fire was ignited on Chediski Ridge, also on the Fort Apache Indian Reservation. The two fires grew rapidly and merged on June 22nd. By the time the fires were contained on July 7th, the complex had grown to approximately 460,000 acres. Of this acreage, approximately 10,711 acres are on the Pleasant Valley Ranger District of the Tonto National Forest, and 164,440 acres are on the Black Mesa and Lakeside Ranger Districts of the Apache-Sitgreaves National Forests. Almost 8,700 acres of private lands were also burned.

Fires have been a recurring and defining element of the ponderosa pine ecosystem found in the southwest over many millennia. However, never before in recorded history has the southwest experienced wildfires as large and intense as the Rodeo-Chediski Fire. This fire occurred in fuels and under conditions deemed far outside the range of natural variability with fuels averaging 48-91 tons per acre across the landscape. Approximately 30,000 people were evacuated and over 450 homes and other structures were destroyed.

Conditions during the summer were hot and dry and followed a prolonged drought cycle that has lasted several years. Almost 95,000 acres of National Forest System lands were burned at moderate and high severity levels, killing many of the trees and other vegetation in several large watersheds and many smaller tributary drainages. Most of the forest canopy and soil organic

layers were removed, resulting in increased run-off and erosion rates in these areas. Other areas burned at lower severity levels or were unburned and were not as severely impacted, creating a mosaic of burn patterns across the landscape. However, a widespread beetle attack is underway across the landscape and expected to continue until this drought cycle has abated. Continued mortality of trees not killed by the fire will occur as this epidemic runs its course.

The fire perimeter remained closed to public entry throughout the summer for safety reasons. Access and travel management within the burned area is currently managed through Travel Restriction Order #01-377, signed August 27, 2002. Motorized vehicles, including off highway vehicles, are restricted to open roads listed and mapped in the Order. The remaining roads are closed to access by motorized vehicles, camping, and fuelwood cutting. Signing is minimal or lacking throughout much of the burned area. Portions of over 90 miles of trail remain closed to public entry. Many people feel confined, no longer able to go to their favorite hiking, picnic or camping areas, and their sense of well being was impacted throughout the region.

The fires and their aftermath took a toll on the local economy as well. Tourism fell dramatically, witnessed by local motel and outfitter/guide trip cancellations and the related decline in retail revenue. From the day-hiker to the backcountry enthusiast, to local residents, to area businesses big and small—all were impacted in one way or another.

Emergency Rehabilitation Efforts

The Forest Service and the Burned Area Emergency Rehabilitation (BAER) Team began planning and implementing emergency recovery work to address watershed and public safety risks that immediately followed the fire. The work focused on stabilizing soils, preventing erosion in areas most severely burned, and preparing for increased stream flows. By October 2002, the Forests completed almost 48,000 acres of aerial seeding, 16,500 acres of straw mulching, removed undersized culverts from 129 miles of roads and installed over 700 erosion control structures. Informal emergency consultation with the US Fish and Wildlife Service regarding effects of suppression actions to threatened and endangered species was requested on November 4, 2002 and a biological opinion was received September 9, 2003.

In addition, an interdisciplinary team of Forest Service resource professionals began analysis of the burn to determine treatments needed to reduce risks to public safety and property from standing dead trees that would rot and fall down within the next 3-5 years. Three Decision Memos were approved December 23, 2002 that focus on salvage logging in areas where a public safety hazard exists along main traveled roads, trails, administrative sites, developed and dispersed recreation sites, along fences that serve as private land boundaries, utility lines and the rights-of-way fences along Highway 260, and within one-half mile of private lands within the wildland/urban interface. These projects remove sawtimber and small diameter dead trees that pose a hazard to people and property by eventually falling to the ground and contributing to future fuel accumulations in the project area. Salvage logging would decrease probabilities of future high severity fires by reducing fuel loading and providing defensible fire-fighting zones in the above-described areas.

On January 8, 2003, four timber sales were auctioned off to timber purchasers to remove commercial sized dead trees approved in the above Decision Memos. On January 9, 2003, three of four sales were awarded to purchasers of the Ridge, Ross and the Yarrow Timber Sales. All

three Decision Memos were challenged in the United States District Court, District of Arizona (Phoenix) on January 9, 2003 (No. Civ-03-0054-PHX-FJM) by Forest Conservation Council of Santa Fe, NM. A fourth timber sale, the OW Timber Sale, was not awarded at that time due to pending litigation. All four timber sales involved treatments approved in the three Decision Memos.

The two Decision Memos for “Treatment of Dead Trees Within or Adjacent to Administrative Sites, Roads, Trails, Developed Recreation Sites and Concentrated Use Areas” and “Treatment of Dead Trees Within or Along Fences and Utility Lines” were upheld by the Court on July 9, 2003. The Court found that the third Decision Memo for “Treatment of Dead Trees in the Wildland/Urban Interface was not appropriate to meet National Environmental Policy Act (NEPA) documentation requirements for the project. The Order stated, “We do not enjoin the Forest Service from implementing its decision with respect to the treatment of dead trees in the wildland/urban interface, but if the Forest Service chooses to go forward, it shall simultaneously prepare an environmental assessment, and, if necessary, an environmental impact statement no later than six months after the filing of this order. Meanwhile, the Forest Service may proceed forthwith.” Salvage logging operations on the Ross and Yarrow Timber Sales were implemented shortly thereafter. The Ridge Timber Sale was re-advertised and awarded in September 2003. The OW Timber Sale was re-advertised and awarded in October 2003.

An environmental assessment (EA) was prepared in response to Judge Martone’s Order to determine if the project had any significant adverse effects that would require the preparation of an environmental impact statement. The proposed action was specific to the Wildland/Urban Interface (WUI) that was defined as National Forest System lands located within one-half mile of private land boundaries (also known as the WUI Project). Approximately 34,580 acres of National Forest System lands lie within one-half mile of private land boundaries. Just over half of this acreage is in the process of being treated for the removal of dead trees. Large-scale maps of proposed treatment areas are located in the project file at the Black Mesa Ranger Station, Apache-Sitgreaves National Forests in Overgaard, AZ.

On December 30, 2003, Elaine J. Zieroth, Forest Supervisor of the Apache-Sitgreaves National Forests and Andrea Wojtasek, Acting Forest Supervisor of the Tonto National Forest, approved a Decision Notice and Finding of No Significant Impact (DN/FONSI) for the *Treatment of Dead Trees in the Wildland/Urban Interface Resulting from the Rodeo-Chediski Fire*. The DN/FONSI approved the continued implementation of the treatments authorized by the Decision Memo signed December 23, 2002. The selected alternative will remove approximately 17 million board feet of commercial sized sawtimber over 3,875 acres and commercial specialty products will be removed from 3,185 acres upon completion of the project. Treatments such as chipping, chunking and crushing of non-commercial small sized woody materials are taking place over 12,400 acres to reduce or rearrange fuels remaining after salvage activities are completed. Legal notice of the availability of the DN/FONSI was published in both Forest’s newspapers of record on January 6, 2004.

Burned Area Recovery Project Planning

The framework for determining how to manage the burned area is provided by federal laws governing the management of national forests and the Land and Resource Management Plans (Forest Plans) for both the Apache-Sitgreaves and Tonto National Forests. The cornerstone of

this framework is the Organic Administration Act of 1897, which states national forests are established “to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of the citizens of the United States.” Congress expanded on these purposes in the Multiple-Use Sustained-Yield Act (1960) and the National Forest Management Act (1976), that direct the Forest Service to administer the resources of the national forests for multiple use and sustained yield of outdoor recreation, range, timber, watershed, wildlife and fish.

In 1985, the Forest Service adopted the Forest Plan for the Tonto National Forest and adoption of the Forest Plan for the Apache-Sitgreaves National Forests occurred in 1987. Both forest plans provide management direction to assure coordination of various multiple uses and values of each forest, consistent with applicable laws established by Congress and establish forest-wide multiple-use goals, objectives and standards. They also designate specific areas as suitable for timber production and individual management areas with specific goals and standards. Forest plan goals that are most relevant to managing the fire effects are addressed in each resource section found in Chapter 3 of the DEIS.

Consistent with the statutory and forest plan framework, an interdisciplinary team of resource professionals began evaluating post-fire conditions of the remainder of the burned area outside of the areas described in the three Decision Memos discussed earlier. Their task was to evaluate the magnitude of the fire impacts, predict future effects, and develop short-term strategies for removal of dead timber from selected areas while it still has economic value. Revenues collected from the sale of this material would be used to offset costs and to reduce the long-term fuel hazards that exist across the landscape. Recommendations from this document and associated public involvement provided the foundation for the proposed actions for salvage of dead trees analyzed in the DEIS and this document.

When looking at desired conditions for the forest, it is important to note that the Rodeo-Chediski Fire had much more impact to forest resources than historical fires. Because of this, desired conditions for a fully functioning and healthy forest are not realistic goals for a project at this time. Recovery of the burned area will take many years and a long-term restoration effort has been organized to look at all social and ecological needs of the burned area. The proposed action would begin to change current resource conditions and trends toward meeting some of the desired conditions for resources as described in the forest plans.

Purpose and Need

Information received during public involvement and the findings of the BAER Team and the Interdisciplinary Team, were used to develop the purpose and need for action, based on the management goals and objectives of both Forest Plans. The needs for the proposed actions are derived from the differences between current, post-fire conditions and desired resource conditions. Desired conditions are based on Forest Plan direction and management objectives, as described in Chapter 1 of the DEIS. The proposed action is designed to move resource conditions closer to desired conditions.

The primary need for this project is to remove dead trees from portions of the burn area while the trees still have economic value. Fuel loading across the burn ranges from 48-91 tons per acre and is far outside the range of natural variability. The long-term benefits from salvage harvest

would be the reduction of large woody fuels over a large area, and subsequent reduction of future fire intensity and severity. The long-term benefit of removing large trees is much greater than the short-term fuel loading associated with salvage-generated slash. Removing large fuels and treating the slash would lower the fire risk compared to not harvesting in the area. Without logging, it would take approximately five to 10 years to reach pre-fire fuel load levels at the expected rate of fuel accumulation.

Due to rapid decay rates of trees killed by the fire, harvest must occur in a timely manner to recover any economic value of the wood fiber. Salvaging dead trees is one method of providing products to meet the public's demand for wood products and provide economic opportunity for communities and wood products industries, which in turn provide jobs and income. As a benefit from salvage logging, future fuel loading and risk of further damage from high intensity wildfires would be decreased, erosion reduced by creation of woody debris from logging slash, and soils would receive coarse woody debris to begin the restoration process.

The Forest Service developed five alternatives, which includes a no action alternative and proposed action alternative, in response to issues raised by the public and internal comments, that meet the purpose and need for the project. Three other alternatives were considered but eliminated from further detailed analysis. They are listed in the *Alternatives Considered But Eliminated From Detailed Study* section of Chapter 2 in the DEIS.

Scope

The scope of the project and this decision are limited to activities prescribed to meet the purpose and need. The project is limited to those National Forest System lands that were burned at moderate and high severity levels that have potential volumes of dead trees to make commercial timber sales economically viable. Without this tool, removal of these dead trees must be borne at great costs to the taxpayer through use of appropriated funds, which may or may not occur. This is a site-specific decision and is not a general management plan for the area as would be provided in a forest plan. This decision does not preclude the potential for future decisions to help meet desired conditions in the project area.

Decision

Introduction

After careful consideration of the potential environmental, social and economic impacts of the alternatives analyzed in the DEIS and the comments of the public, local governments, and other agencies, it is our decision to implement Alternative 4 (DEIS, pages 19-20). This Record of Decision (ROD) authorizes the following activities to be conducted in portions of the Apache-Sitgreaves and Tonto National Forests burned by the Rodeo-Chediski Fire of 2002:

- Conduct salvage logging activities to harvest dead standing trees with merchantable value that are 12 inches and larger diameter at breast height (dbh) on approximately 34,156 acres. Dead trees are defined as trees that contain no green needles.

- Utilize ground-based yarding systems (tractors, skidders and other mechanical equipment) in areas with slopes less than 40 percent, yielding approximately 68.3 million board feet (mmbf) of sawtimber.
- Harvest fuelwood, specialty wood products and sawtimber on an additional 6,903 acres, yielding approximately 7.5 mmbf of specialty wood products and sawtimber and 7,300 cords of fuelwood.
- Maintain and repair approximately 223 miles of currently open National Forest System roads and their drainage systems that were damaged during the fire and subsequent weather events for use during salvage harvest operations.
- Open approximately 100 miles of currently closed National Forest System roads (Level 1 roads) to facilitate salvage operations. These roads would be closed and reseeded after use.
- Construct approximately 18.2 miles (36 segments) of temporary roads following Best Management Practices (BMP) design criteria to provide access to landing sites. These temporary roads would be decommissioned and reseeded after use.

The actions in this decision represent a conservative, but balanced salvage program to remove a portion of the trees killed by the fire on both the Apache-Sitgreaves and Tonto National Forests. Implementation of this alternative does not require any permits, licenses, grants, or special authorizations from other agencies.

This decision will reduce fuels on approximately 41,000 acres, improve watershed conditions in key drainages, and provide economic opportunities that would partially offset costs of removing this material at taxpayer's expense through appropriated funding. Treatments would occur on 54 percent of the acreage burned at moderate and high severity levels out of more than 175,000 acres of National Forest System lands within the fire's perimeter. Specific areas to be treated are displayed on Map 9 (East and West) in Appendix G of the DEIS.

Fuels Reduction

Fuel reduction activities would be accomplished using tools such as commercial timber sales while this material still has value in areas burned at moderate and high severity levels:

- 34,156 acres of fuel reduction using salvage logging and lopping slash to within two feet of the ground.
- 6,903 acres of fuel reduction using salvage logging, lopping slash to within two feet of the ground, and through removal of sawtimber and specialty products such as fuelwood, poles, posts, vigas, etc.

Fuel reduction objectives would be accomplished in a cost efficient manner that provides for resource protection and coarse woody debris to benefit soil productivity and reduce erosion. Reduced fuel loads would be achieved in part by harvesting a portion of the marketable dead trees. Large dead trees would also be retained in harvest units to meet wildlife needs.

The long-term benefits from salvage harvest would be the reduction of large woody fuels over a large area, and subsequent reduction in future wildfire intensity and severity. The long-term benefit of removing large trees is much greater than the short-term fuel loading associated with salvage-generated slash. Removing large fuels and treating the slash would lower the fire risk compared to not harvesting in the area (DEIS pages 97-98, 109). Without logging it would take approximately five to 10 years to reach pre-fire fuel load levels at the expected rate of fuel accumulation (DEIS page 109).

Watershed Stabilization

This decision authorizes implementation of watershed stabilization activities in the burned area as specified in Alternative 4 (DEIS pages 19-20, and ROD Appendix A). These activities would make progress toward Forest Plan goals and desired conditions for watersheds by improving soil conditions and reducing sediment sources. Reduction of sediment from the road system would also be achieved (DEIS page 198). The activities are:

- Create approximately 30 percent ground cover from logging slash over approximately 41,000 acres in areas burned at moderate and high severity levels where little or no ground cover exists (DEIS pages 30, 48, 54, 220).
- Improve soil quality, defined as the ability of the soil to accept, hold and release water, by addition of ground cover (DEIS pages 60, 218).
- Enhance soil productivity through incorporation of organic materials by equipment operation throughout treatment areas (DEIS pages 60, 218).
- Encourage water infiltration with ground cover by providing additional surface roughness to slow runoff down before leaving the site (DEIS pages 60, 62, 64, 138, 140, 157, 165 218).
- Protect soils from the effects of intense and prolonged fire intensities resulting from future re-burn by reducing larger fuels (DEIS pages 97-98).
- Reduce sediment yield and surface runoff in areas where salvage logging occurs through generation of slash and leaving un-merchantable tops that have been lopped within two feet of the ground (DEIS pages 60, 68, 218).
- Maintain and repair the drainage systems on approximately 223 miles of currently open National Forest System roads that were damaged during the fire and subsequent weather events for use during salvage harvest activities (DEIS pages 20, 198-200).

Management Requirements, Mitigation Measures and Monitoring

With this decision, the management requirements and mitigation measures specified for Alternative 4 (DEIS pages 19-20) are adopted for implementation. Additional management requirements such as Best Management Practices are also displayed (DEIS pages 22-26 and Appendix B. pages 287-304). The management requirements and mitigation measures for

Alternative 4 are also provided in Appendices A and B of this document as part of the detailed description of this decision.

Through selection of Alternative 4, the monitoring program specified in Appendix F of the DEIS is adopted to ensure quality results on the ground. These results are to be measured by an interdisciplinary team of resource specialists, assigned to carry out and oversee monitoring of this project. The monitoring plan is designed to complement and build on existing quality control protocols as well as current forest plan monitoring requirements and schedules specified for both the Apache-Sitgreaves and Tonto National Forests.

Based on the analysis in the DEIS, the cautious project design combined with required mitigation and monitoring, demonstrates that significant environmental harm would be avoided. All practical means to avoid or minimize environmental harm from the decision have been adopted. Mitigation and monitoring would be applied as described in Appendices B, C, and F of the DEIS, and the results of monitoring or other research would be used to determine if other feasible measures can be employed to achieve results similar to those predicted in the DEIS. If so, activities or mitigation measures may be adjusted on this project to achieve those similar results that protect resources. This type of adaptive management would be important to achieving quality results on the ground and furthering knowledge of burned area recovery.

Reasons for Selecting This Decision

It is the desire and obligation of both National Forests involved to manage the results of this fire in a way that conserves their priceless resources for future generations. The challenge in making this decision is how to best integrate Forest Plan goals and objectives and recovery needs in light of the conditions that were created by the fire, while assuring the long-term health and productivity of soils, watersheds, wildlife habitat, and other resource values. The potential environmental, social and economic effects of the alternatives presented in the DEIS were carefully considered during deliberations leading to this decision. Suggestions and concerns that the public, other agencies, and elected officials provided in comments about this project were also considered (see Appendix D, Response to Comments and Appendix F, Comment Letters).

Federal laws directing the management of the national forests guided this decision. The Multiple-Use Sustained-Yield Act and the National Forest Management Act directs the Forest Service to administer the resources of the national forests for multiple use and sustained yield of outdoor recreation, range, timber, watershed, wildlife and fish. The Multiple-Use Sustained-Yield Act defines multiple use as including the “harmonious and coordinated management of the various resources, each with the other, without the impairment of the productivity of the land....” Following the direction of these statutes, this decision strives to harmonize and coordinate the management of fuels, timber, recreation, watershed and wildlife.

Alternative 4 was selected because it achieves the purpose and need of the proposed project. It removes merchantable sized dead trees while they still have commercial value from areas burned at moderate and high severity levels. It reduces the potential for future wildfires of undesirable size, intensity and severity. This alternative would not disturb wildlife at the same level as other action alternatives and provides additional habitat components such as additional large snags. It also reduces sources of sediment and otherwise promotes watershed recovery by providing badly

needed ground cover in the form of logging slash. Soil quality, productivity, and its ability to absorb water would be improved where treatments occur within the fire perimeter.

The focus of this decision has been to find the best possible strategy to manage the risks posed by the heavy fuel accumulations that would result from the fire in the long-term. This alternative will provide sustainable patterns of forest succession and fire disturbance while reducing the risks posed to the public by falling dead trees and from future wildfires. This alternative will also maintain soil productivity, restore or maintain properly functioning watersheds, promote healthy wildlife populations, satisfy public needs for wood products, and contribute to a healthy and diverse local economy. An attempt has been made to build upon the positive spirit of cooperation that the people of the communities involved in this tragedy developed through their shared experiences during the Rodeo-Chediski Fire.

Fuels Reduction

Managing risk (as guided by both Forest Plans) is a primary reason for fuels reduction in the project area. These risks include minimizing the chance that small fires would escape initial attack and become large conflagrations that threaten firefighter safety, communities, and resources in areas where such disturbance is not compatible with current goals and objectives. The Forest Service has control over only one factor affecting risks, that of fuel loading. The decision to reduce fuels in specific areas is proactive management to lessen risk (DEIS page 109).

While it is true that removing large-diameter fuels would tend to increase small woody fuels in the short-term, fine fuels pose less resistance to control and lower fire intensities. Removing large fuels and treating activity generated slash would lower the fire risk compared to not harvesting in the area. Salvage logging would remove a significant portion of the heavier fuels, whereas without logging, it would only take approximately five to 10 years to reach pre-fire fuel load levels at the expected rate of fuel accumulation (DEIS page 109).

Concerns about the future continuity of heavy surface fuels and regrowth of additional fuels in the long-term, adding to an average fuel loading of 48-91 tons per acre present across the analysis area, led to the decision to remove commercial sized material and smaller sized material as specialty products and fuelwood, while providing for wildlife needs (DEIS pages 103-106 and 126-165, Appendix C). The long-term benefits from salvage harvest would be the reduction of large woody fuels over a large area, and subsequent reduction of future fire intensity and severity. The long-term benefit of removing large trees is much greater than the short-term fuel loading associated with salvage-generated slash (DEIS page 109).

Most of the effects analyzed relate to the abnormal fuel loading that would occur five to 10 years from now and become a threat in 20 to 25 years. Fuels would increase from 5-20 tons per acre to 50-90 or more tons per acre in that time period. Snags left for wildlife habitat would begin to fall with the majority falling to the ground in the next 10 to 20 years. This increase in woody material on the forest floor would support ignition, rapid spread, and development of high intensity fires (DEIS page 109).

In the long term (10+ years), wildfires occurring in areas burned at moderate and high severity levels that do not receive treatment would have high resistance to suppression and control due to

the amount of fuels on the ground. Fires would be more difficult to control because of inaccessibility to areas (down trees across roads and trails) and greater flame lengths and fire intensities predicted in the moderate and high burn severity areas. This condition would produce an unsafe situation for fire-fighting personnel, and make suppression costs higher from increased use of aerial retardant (DEIS pages 107 and 109). The longer residence time from a wildfire burning in large fuels would increase soil damage (DEIS page 107). Alternative 4 will reduce these larger fuels and improve safety to fire-fighting personnel and to the public.

This decision complements an earlier decision approved in the Decision Memo signed December 23, 2002 to treat dead trees within one-half mile of private lands within the wildland/urban interface to create defensible space for firefighters to safely initiate suppression activities should a future wildfire occur. A subsequent Environmental Assessment and Decision Notice/Finding of No Significant Impact for *Treatment of Dead Trees in the Wildland/Urban Interface Resulting from the Rodeo-Chediski Fire*, was approved December 30, 2003.

Soils and Hydrologic Resources

Salvage logging proposed under Alternative 4 would generate various levels of ground cover from logging slash and non-merchantable trees pushed over or crushed by logging equipment. Depending on the number of trees harvested and their density per acre, this alternative would create ground cover where none existed before harvest, particularly in areas burned at high severity levels. On average, treatment areas within the eastern portion of the analysis area may harvest around 12 trees per acre that are 12 inches dbh or larger. On the western portion of the analysis area, up to 28 trees per acre may be harvested. This would provide approximately 30 percent ground cover that would make a difference in sediment yield and surface runoff (DEIS page 54).

All action alternatives would reduce discharge amounts over baseline by about 11 percent, with Alternative 4 discharging the least, based on analysis of peak flows discharged from numerous sub watersheds within the analysis area. Sediment yield and soil erosion differences are similar among action alternatives. This peak flow analysis integrates an initial increase in flow due to logging activities and a greater offset in effects due to creation of ground cover that did not exist before logging. Some watersheds did not show a significant change in discharge compared to post-fire peaks, which is due in part to the small proportion of treated acreage planned to occur within respective sub watersheds (DEIS pages 54-60, see also Errata for page 60).

Sensitive soils were identified from Terrestrial Ecosystem Survey maps and mitigation measures prescribed to avoid or minimize any adverse environmental effects that may occur during project implementation. Salvage logging activities would only occur under dry or frozen conditions on sensitive soils (DEIS pages 22-23). Activities occurring along identified and mapped streamside management zones would be protected by filter strips (DEIS pages 23-24, Appendix B pages 287-304).

Alternative 4 would provide some degree of ground cover from slash and have an effect on erosion rates, reducing erosion from potential (highest possible) to near tolerance levels. Areas treated would benefit from logging activities while the remaining areas would remain at potential erosion rates. The benefits of added ground cover only apply to areas that are proposed for salvage logging (DEIS page 60).

Soil quality would be improved by implementation of Alternative 4, as the ability to accept, hold and release water would be improved by addition of ground cover. Infiltration is encouraged with ground cover as it provides additional surface roughness to slow runoff down and allow greater time for infiltration before leaving the site. The ability to resist erosion and degradation would be enhanced as well as the ability to accept, hold and release nutrients through the addition of organics (DEIS page 60).

It is anticipated that sediment influx into reservoirs would be slightly diminished by implementing Alternative 4, adding to the effective life of the reservoir capacity. The proposed treatment acreages are very small in proportional extent, which limits the total beneficial impact that this alternative can produce. Although slight, Alternative 4 would reduce sediment influx to Black Canyon, Lone Pine and Schoen reservoirs (DEIS page 62).

No new permanent roads are proposed in Alternative 4 (DEIS pages 7 and 20). All temporary roads created would be decommissioned, water barred and seeded upon completion of salvage logging activities (DEIS page 20).

Other Reasons for Selection of Alternative 4

Treatments Will Complement Present and Future Fuels Reduction Projects

The ecosystem's ability for self-renewal is dependent upon future disturbances staying within the range of natural variability for the genetics of the ecosystem components and could require centuries in large areas to complete. Dead material on the forest floor can be beneficial in protecting new vegetation from temperature extremes and in providing a physical barrier against ungulate animals, however excessive amounts of dead material on the forest floor can reduce the abundance of understory vegetation. Another high-intensity fire would only interrupt this process (DEIS page 81).

Salvage logging that is currently in progress within the analysis area would decrease the probability of future high severity fires by providing defensible fire-fighting zones along roads, trails, structures, and in the WUI areas (DEIS page 88). Reasonably foreseeable future fuel treatments would break-up continuous fuel beds, allow a defense zone for firefighter safety and provide protection to the public and their private land improvements occurring in the WUI (DEIS, pages 108 and 112).

Temporary Roads and Landings

Temporary road construction would be necessary to access several areas not having an adequate road system to meet skidding distance requirements. These roads would be constructed to minimal standards to provide access for harvesting equipment and logging trucks and be used to minimize skidding through unburned and lightly burned areas. Temporary roads would be used for short durations, normally less than one season of operation and then decommissioned and seeded in accordance with mitigation measures and best management practices (DEIS page 202).

Concerns expressed about sedimentation from construction of temporary roads and landings were strong considerations in the selection of an alternative to implement this project. As proposed in Alternative 4, utilization of previously closed roads (Level 1 roads) and construction of temporary roads during salvage logging activities were second only to Alternative 3 in

minimum road construction requirements at 100 miles and 18.2 miles (36 segments) respectively (DEIS, Table 54, page 202).

Likewise the miles of turnouts, miles of road clearing to eliminate dangerous blind spots, and miles of road maintenance for Level 2, 3 and 4 roads were considered in the selection of an alternative to implement this project. Alternative 4 was the second lowest overall behind Alternative 3 in this regard, requiring turnout construction along 136 miles of road, clearing along 115 miles of road to eliminate blind spots (the least of the action alternatives); and road maintenance of 223 miles to support salvage logging activities (DEIS pages 198-200). However, Alternative 4 would provide more benefits to soils and watershed by providing additional ground cover over a larger area, considered to be an overriding factor in the selection of an alternative for implementation.

Wildlife

It was determined that there was no change in habitat or population trends for management indicator species regardless of the alternative selected (DEIS pages 158-162 and Appendix E, pages 329-337). Some species would benefit from salvage activities such as pronghorn antelope while others such as cavity nesting species and small mammals would be potentially impacted by the number of snags remaining after treatment is completed. Within treatment areas, Alternative 4 would leave slightly more snags for wildlife than other action alternatives with the No Action alternative providing the most, averaging 7.6 snags across the landscape. However, action alternatives would leave almost identical numbers of snags per acre (ranging from 6.3 to 6.8 snags per acre) when considering the landscape as a whole within the fire perimeter due to the large areas burned at moderate and high severity levels that will not be treated (DEIS pages 143-144).

Snag retention would be increased within one-quarter mile of threatened, endangered or sensitive species habitats, as proposed in Alternative 4. Snags within harvested areas would contribute to habitat quality for prey species. This alternative would provide high quality foraging habitat for goshawks and better small mammal habitat than other action alternatives considered (DEIS page 155).

Other factors such as lack of merchantable volumes of dead trees within these areas to warrant salvage logging contributed to the higher overall numbers of residual snags remaining across the landscape. Alternative 4 also treats the least acres designated for small sales of sawtimber and specialty wood products (6,903 acres) to reduce potential impacts of management activities to wildlife (DEIS page 20 and Table 9, page 30).

Economy

The benefit to cost ratio for the Forest Service was next to the highest provided by Alternative 2 (1.58) at 1.57 provided by Alternative 4. Likewise, the benefit to cost ratio for all partners was 0.92, second only to Alternative 2. Alternative 4 provides the best return to the treasury and highest number of jobs, following Alternatives 2 and 5 (DEIS page 216). The local economy may see a short-term peak in temporary woods workers, but this industry would likely decline back to current numbers after the salvage operations are concluded (DEIS page 217).

The numerous management requirements, mitigation measures, and monitoring activities ensure that Alternative 4 would achieve these multiple use objectives in a conservative and

environmentally sensitive manner. This conclusion is based in part upon the comments of other agencies that have concurred that this alternative complies with applicable environmental protection laws and regulations. In summary, Alternative 4 achieves the purpose and need, the multiple-use objectives, and is consistent with both respective Forest Plans at levels similar to other action alternatives considered in detail.

Other Alternatives Considered

In addition to the selected alternative, four other alternatives were considered which are discussed below (DEIS, pages 15-22). Alternative 4 is the environmentally preferred alternative (DEIS Summary page xxv). A more detailed comparison of these alternatives can be found in the DEIS on pages 28-35. Other alternative concepts were considered but not given detailed study (DEIS page 29, see also ROD, Appendix D, response to Comment #014-3).

Alternative 1 (No Action Alternative, DEIS page 15)

The “No Action” alternative is required by NEPA, serving as a baseline for the projected effects and displaying existing resource conditions. Under this alternative, no proposed activities would occur. Some previously authorized forest management activities and projects that were unaffected by the fire would continue in their development. Natural restoration processes would recover areas impacted by the fires and previous land uses. Roads currently open for motorized vehicle use would remain open. This alternative would not preclude forest management activities identified under previous decisions, nor would it preclude the potential for activities identified under future decisions.

Alternative 1 was not selected because it would not meet the purpose and need to remove dead trees before their value was lost, would not reduce fuels, and would not improve long-term watershed health. It was considered important to reduce fuels in the areas that were burned at moderate and high severity levels occurring in large blocks in our ponderosa pine forest types located upwind to the wildland/urban interface. In the absence of fuel treatments, heavy fuel loads would continue to accumulate and increase the potential for extreme fire behavior. Selection of Alternative 1 would increase the potential for intense reburn with attendant damage to soils and remaining vegetation in low burned and unburned areas. This alternative would hinder future fire suppression actions and would decrease firefighter and public safety. Alternative 1 also would not take active measures to improve watershed health or provide economic opportunities (DEIS pages 106-107, 214).

Alternative 1 would avoid environmental effects such as soil compaction and the need for temporary road construction that would occur during harvest activities. The risks of not taking action are greater than the risks associated with these impacts. Selection of Alternative 1 would not provide badly needed ground cover in the short-term, leaving soil productivity in a severely damaged condition in areas burned at moderate and high severity levels. Erosion rates would remain at maximum for the next several years until ground cover was re-established naturally and sediment transport would continue at present rates. Soil quality, as measured by the amount of ground cover would not be improved. Post-fire flooding would continue at peak flow rates with no change in watershed conditions expected for the next several years (DEIS pages 51-54).

Long-term impacts to recreation use patterns would occur as dead trees rot and fall down in jackstraw fashion, blocking access to traditionally used areas. Recreation opportunities would become more limited as fallen trees block the ability of cross-country hiking enthusiasts to access more remote areas within the perimeter of the fire (DEIS page 188). Likewise, animal movement of both wildlife and livestock would be impeded for decades to come. Long-term impacts to foreground views would create visual impacts along highways and high use areas (DEIS pages 177-178).

Heritage resources are abundant within the fire perimeter. Alternative 1 would not protect sites from the effects created by root wads from falling trees damaging site integrity nor would it protect exposed sites from vandalism. Site integrity and potential significance would be compromised for those sites within areas burned at moderate to high severity levels (DEIS page 170).

Implementation of Alternative 1 would not be consistent with either the Apache-Sitgreaves or Tonto National Forest Plans.

Alternative 2 (Proposed Action, DEIS pages 7-8, 15-18)

Alternative 2 is the agency's proposed action that would reduce fuels by harvesting dead trees on approximately 45,109 acres utilizing ground-based and helicopter yarding systems to remove commercial sawtimber. Fuelwood, specialty wood products and other sawtimber would be removed by commercial and/or non-commercial means. Watershed improvement would occur in the form of road maintenance and contour felling of dead trees. A Forest Plan amendment is also required for both National Forests to allow logging on slopes over 40 percent by helicopter yarding methods (DEIS pages 7-8, 17).

While Alternative 2 would provide the greatest volume of salvageable sawtimber and specialty products, return the highest revenue to the treasury from the sale of forest products, and create the highest number of private sector jobs, this alternative was not selected for implementation for several reasons. Potential impacts to wildlife and fisheries were the primary considerations leading up to the selection of Alternative 4.

Consideration was given to the effects of noise disturbance from helicopters and ground-based equipment to threatened and endangered, sensitive species in selection of Alternative 4 for implementation. Although Alternatives 1 and 3 created the least noise disturbance to bald eagles and Mexican spotted owls (MSO), Alternatives 4 and 5 created slightly more noise with Alternative 2 having the greatest potential to disturb these species (DEIS Summary page vii and Appendix D, pages 311-315). Mitigation measures are in place restricting activities in the vicinity of MSO protected activity centers (PACs) during the breeding season to offset this potential for disturbance (see ROD Appendices A and B). Lower speed limits within PACs along major haul roads would also be placed in effect to further protect MSO (DEIS Appendix C, pages 305-306).

Alternative 2 proposes to salvage dead trees within four PACs destroyed in the Canyon Creek drainage area by use of helicopter yarding methods. This alternative would have required site-specific amendments to both forest plans (these amendments were determined to be non-significant; (DEIS pages 8-9, 17 and Project Record, Doc #78).

Concerns were also expressed about possible impacts to the fisheries in Mule Creek and Canyon Creek and about removal or retention of burned timber within the riparian corridors. Loss of canopy cover and decrease of thermal stability by loss of standing tree boles led to the development of streamside management zones (DEIS, Map 6), however the new hydrology and sediment regime that the fire created and then determining the change timber salvage would create was problematic due to lack of data and the time it would take to acquire it (see Project Record, Doc. #74).

While salvage logging would create additional ground cover in the headwaters to Canyon Creek, additional treatments such as contour felling and mulching would be needed to stabilize soils on steep slopes, as well as other treatments considered to be out of the scope of this analysis because they were long-term rehabilitation needs to be addressed in future NEPA documents and decisions.

For the above reasons, Alternative 2 was not selected for implementation.

Alternative 3 (DEIS, pages 18-19)

This alternative responds to public and internal concerns over salvage logging in areas with sensitive soils or where accelerated soil erosion is possible. This alternative would reduce fuels by harvesting dead trees on approximately 38,533 acres utilizing ground-based yarding system on slopes less than 40 percent and avoids areas that have been classified as having severe soil erosion potential. No helicopter yarding is proposed in this alternative. Fuelwood, specialty wood products and other sawtimber would be removed by commercial and/or non-commercial means. Watershed improvement would occur in the form of salvage logging slash, road maintenance and contour felling of dead trees.

Mitigation measures are in place restricting activities in the vicinity of MSO protected activity centers (PACs) during the breeding season to offset this potential for disturbance (see ROD Appendices A and B). No site-specific Forest Plan amendment is proposed in this alternative. Alternative 3 is consistent with both the Apache-Sitgreaves and Tonto National Forest Plans.

Alternative 3 treats less acreage burned at moderate and high severity levels than other action alternatives because it avoids treatments on soils classified as having severe soil erosion potential. Field inspections revealed that most of the areas burned at high severity levels have no groundcover other than the basal area of standing dead trees. These areas have no dead or down material on the ground to protect the soil from raindrop impact, to retard or reduce runoff, to induce infiltration, to protect the soil from erosion, or to provide a seedbed for germination or plant regrowth. More importantly, ground cover created by salvage logging slash would reduce on-site soil erosion and contribute to the long-term health and productivity of the forest. Selection of Alternative 3 would not have met the primary objective to re-establish protective ground cover on exposed, highly erosive soils in these areas (DEIS pages 66-67).

Based on the peak flow analysis, all action alternatives would reduce discharge amounts over baseline by about 11 percent compared to average discharge of the No Action alternative. Alternative 3 produces the most discharge. Potential sediment yield and soil erosion differences

are similar among action alternatives (DEIS page 60, see also ROD, Appendix E, Errata for page 60).

In addition, more of the largest trees would be retained to meet wildlife needs, similar to the same level proposed in Alternative 4. As a result, less ground cover would be created from activity slash and high soil erosion rates are expected to continue from areas burned at moderate and high severity levels until natural ground cover re-establishes itself. Selection of Alternative 3 would treat the least acreage, producing less ground cover (DEIS page 66).

Soil quality, as addressed through soil condition, would be heavily affected in burned areas that are on steep slopes as well as shallow soils through selection of Alternative 3. Ground cover is critical in maintaining soil functions such as nutrient storage, water absorption and release, and the ability to resist erosion. Alternative 3 would improve soil condition over fewer acres than other action alternatives (DEIS page 66-67).

Watershed condition is also dependent on ground cover. Without ground cover, sensitive soils in these areas would shed water very quickly, generating massive quantities of eroded soil, exporting nutrients off site, and in areas of shallow soils, exposing more bedrock outcrops. Discharge concentration times would remain at post-fire levels, resulting in channel erosion as well (DEIS page 67). Selection of Alternative 3 produces the least amount of ground cover to improve watershed conditions (DEIS page 66).

All action alternatives propose salvage logging to occur within portions of Black Canyon and Canyon Creek watersheds, the only watersheds within the analysis area that have substantial amounts of riparian habitat. Other watersheds either do not contain adequate habitat for fish or macro invertebrate habitat, or contain extremely limited habitat that would likely not be significantly impacted by any of the action alternatives being analyzed. However, Alternative 3 treats the smallest number of acres within the Black Canyon Watershed (377 acres) as opposed to the other action alternatives (1,100 acres) (DEIS Table 45, page 164). Discharge modeling displayed that Alternative 3 would produce the highest peak flows, second only to Alternative 1 (DEIS page 60). For the above reasons, Alternative 3 was not selected for implementation.

Alternative 5 (DEIS, pages 21-22)

This alternative was developed to achieve a balance of minimizing management activities on steep slopes while maximizing timber volumes to be harvested from other areas. Fuels would be reduced by harvesting dead trees on approximately 42,850 acres utilizing ground-based yarding systems to remove commercial sawtimber on slopes less than 40 percent and includes areas that have been classified as having severe soil erosion potential. No helicopter yarding is proposed in this alternative. Fuelwood, specialty wood products and other sawtimber would be removed by commercial and/or non-commercial means. Watershed improvement would occur in the form of salvage logging slash, road maintenance and contour felling of dead trees.

Mitigation measures are in place restricting activities in the vicinity of MSO protected activity centers (PACs) during the breeding season to offset this potential for disturbance (see ROD Appendices A and B). No site-specific Forest Plan amendment is proposed in this alternative. Alternative 5 is consistent with both the Apache-Sitgreaves and Tonto National Forest Plans.

Alternative 5 would create the same amount of ground cover from logging slash on all areas above the Mogollon Rim as Alternative 2, and as such is expected to result in the least soil erosion from these areas (DEIS page 69). Alternative 5 proposes leaving dead trees to meet wildlife needs at the same levels as Alternative 2. Due to the volume of salvage logging, this alternative creates slash at levels second only to Alternative 2 to enhance or maintain soil productivity (DEIS page 69). Alternative 5 would also result in the least amount of erosion across the entire proposed activity area and provide the greatest amount of sediment retention in the watersheds, based on total harvest volume (DEIS page 69).

Watershed conditions above the Mogollon Rim are expected to improve at a faster rate, given the amount of ground cover created by logging slash, as proposed in Alternative 5. Although discharge concentration times and flood durations may not significantly change during peak flow events, the ground cover would make a larger difference during normal or smaller rainfall events, capturing soil and promoting infiltration. Alternative 5 would be the most beneficial to watershed condition (DEIS page 69).

Snag requirements for Alternative 5 are the same as Alternative 2, which meets the minimum snag requirements of both forest plans. Snag retention levels would not be increased within one-quarter mile of threatened, endangered or sensitive species habitats as proposed in Alternatives 3 and 4. Snags retained within harvested areas would contribute to habitat quality for prey species. This alternative would not provide for as much high quality foraging habitat for goshawks as Alternative 4, but would provide better small mammal habitat than Alternative 3 (DEIS page 156).

Because larger snags last longer than smaller ones, the snags retained in Alternatives 2 and 5 would not remain standing as long as the larger snags retained in Alternatives 1, 3 and 4, therefore would not provide habitat for cavity nesters for the same time periods. Fewer down logs would be present compared with Alternative 1, once trees begin falling. These alternatives would provide less habitat for those species dependent on small and large woody debris than Alternative 1, such as small mammals. In deference to the habitat requirements for wildlife, Alternative 5 was not selected for implementation.

Public Involvement

During and immediately following the Rodeo-Chediski fire, the public remained heavily involved and well informed of the fire-fighting efforts and post-fire (BAER) activities. In addition to media coverage, Incident Command teams assigned to the fire kept the public updated on the fire and its impacts through community meetings and briefings.

The planning team attended meetings in communities near and most directly influenced by the fires. These meetings, along with other outreach and public information efforts, provided the public with an opportunity to discuss post-fire treatment needs. These meetings also provided a forum for the public to review and critique the season's fire fighting efforts, public involvement during the wildfire season, and other particular forest management issues.

Scoping

On August 24, 2002 a scoping notice was mailed to 389 groups, organizations, affected parties, and individuals who asked to be kept informed of activities on the Apache-Sitgreaves and Tonto

National Forests in regards to the Rodeo-Chediski Fire. In addition to the scoping notice, a Notice of Intent (NOI) to prepare an environmental impact statement was published in the *Federal Register* on September 26, 2002 informing the public of the Forest Service's decision to write an EIS. The public comment period for the NOI ended on November 15, 2002.

Two hundred thirty-two replies were received in response to both documents, which included 188 e-mail form letters expressing opposition to any form of management action within the fire area.

Issues

Deciding how to resolve conflicting points of view was an important element of this decision. Most people agreed that the Rodeo-Chediski Fire of 2002, along with past human activities such as fire suppression, grazing, and timber harvests have greatly affected the analysis area.

Many of the issues reflect differences of opinion about how both Forests should respond to the current situation. Some people feel that the preferred alternative would not lead to recovery of areas proposed for treatment but will, in fact, make things worse. Others feel that the Forest Service can improve the situation with management activities while achieving economic and social objectives.

The following is a summary of the key issues identified through internal and public comments on the proposed project and alternatives:

- **Issue 1:** Salvage logging may cause erosion, sedimentation, and the accompanying loss of soil nutrients in areas that are sensitive or where accelerated soil erosion is possible. Erosion and increased sediment delivery could lead to a loss of productive soils and a decline in water quality downstream.
- **Issue 2:** Salvage logging may reduce habitat or jeopardize the viability of wildlife species that require woody material in their habitat.

These issues are displayed (DEIS pages 14-15), were considered and analyzed in developing alternatives, and addressed throughout the effects analysis in various resource section discussed in Chapter 3.

Public Comments to DEIS

The DEIS was made available to the public during the week of October 13, 2003 in a variety of forms, a summary discussing the differences between alternatives (with maps) and the DEIS with a map package (both bound copy and CD). The DEIS was also posted on the Forest website at <http://fsweb/fs.fed.us/r3/asnf>. Comments were also received in the comments database at comments-southwestern-apache-sitgreaves@fs.fed.us and made available at libraries located in Springerville, Show Low and Phoenix. A notice informing the public of the DEIS' availability was published in the Federal Register, White Mountain Independent and the East Mesa Tribune. Additional news releases were sent to Pine Graphics, Payson Roundup, The Apache County Reporter, and other local newspapers.

Only 16 comment letters from individuals, organizations, and other agencies were received as a result of the 45-day comment period notice. Comments varied in format and included letters and e-mail messages. The ID Team, other Forest staff and line officers reviewed the comments. Comments were analyzed in a systematic process to compile, categorize, and capture the full range of public viewpoints and concerns. Forest Service responses to all comments appear in Appendix D of this document.

Pursuant to 40 CFR 1503.4, upon review of the responses to public comments received upon circulation of the DEIS, only minor corrections to the DEIS were required and the agency did not need to supplement, improve, or modify its analysis, therefore the DEIS was not reprinted. The decision and supporting documentation, Forest Service responses to comments, errata to the DEIS and copies of comment letters (Appendices D, E and F) are displayed in this document (40 CFR 1502.19).

Literature Citations, References and Attachments used in Issue Identification

Literature citations occur throughout the DEIS and references are displayed by resource section (pages 351-363).

Several letters received from the public during the scoping process and comments to the DEIS included literature references and attachments such as scientific commentaries of Beschta et al., and others. Opposing scientific documents referenced by the public have been addressed in the various resource sections in the DEIS as well as other relevant science considered in the effects analysis. An extensive literature review with emphasis on the relevancy of the scientific documents to the conditions that exist within the Rodeo-Chediski Fire analysis area was undertaken and the results are displayed in the Project Record (Doc #39, also see Appendix D, Response to Comments #011-1, #014-2 and #014-4 in this document).

Involvement of other Agencies

In addition to involving the public, the Forest Service consulted with several other agencies for resource data and issue identification (DEIS, pages 12-13).

United States Fish and Wildlife Service (USFWS)

Under the requirements of Section 7 of the Endangered Species Act (16 U.S.C. Section 1531-1544), the Forest Service is required to consult with the United States Fish and Wildlife Service (USFWS) to determine the biological significance of activities on any species designated or proposed as threatened and endangered, or “at-risk” (50 CFR Part 402). Biologists with the USFWS remained involved throughout the analysis process as ex officio Interdisciplinary Team members, attended field tours and Interdisciplinary Team meetings during the planning process, and submitted interim reports and information that aided in the development of design criteria. As part of the consultation process, the USFWS provided assistance with the Biological Evaluations and Assessments completed by the Forests to document the effects of the project on threatened, endangered and sensitive species. Formal consultation was initiated August 15, 2003 (Project Record, Doc. #96) and a Biological Opinion was received on February 11, 2004 (Project Record, Doc. #109). The results of this consultation process are disclosed under the section

Findings Required by Other Laws, Regulations and Agency Policies, “The Endangered Species Act,” discussed later in this document as well as in the Project Record.

Arizona State Department of Environmental Quality (ADEQ)

In accordance with the Federal Clean Water Act (P.L. 92-500 amended), ADEQ was notified of this project and provided with details of mitigation measures to avoid impacts.

Arizona Game and Fish Department (AG&F)

Immediately after the fire, the Arizona Game and Fish Department (AG&F) provided information as to the effects of the fire on various wildlife and fish populations and habitats found within the analysis area. Substantive comments were provided during scoping and in response to the notice of intent to publish an environmental impact statement that was utilized in design criteria for the alternatives considered in detail. A member of AG&F was assigned to the ID Team as an ex officio member and attended ID Team meetings during the planning process.

Arizona State Historic Preservation Office (SHPO)

A 100 percent survey was conducted of the area of potential effect and a determination made that “no historic properties affected” was recommended by the Forest Archaeologist, Dr. Charlotte Hunter, and approved February 10, 2004 by Acting Forest Supervisor W. Carlene Willis, in accordance with the Programmatic Agreement approved December 24, 2003 (Project Record, Doc. #108).

Tribal Consultation

The Apache-Sitgreaves and Tonto National Forests consult with all tribes having treaty rights, historic ties, or interests in the two forests. The White Mountain Apache, San Carlos Apache, Tonto Apache, Yavapai-Apache Nation, Yavapai-Prescott Indian Tribe, Pueblo of Zuni, Hopi Tribe, Navajo Nation, and Fort McDowell Indian Community have historic ties and an interest in portions of the Apache-Sitgreaves or Tonto National Forests (or both), and consultation concerning this project proposal is ongoing. Consultation has been completed with all of the above listed tribes concerning this project to identify any traditional cultural properties or other areas of importance within proposed treatment areas.

The DEIS was mailed to tribal government officials for all of the above listed tribes on October 6, 2003. Cultural resource officers for these tribes have not indicated having any cultural resource concerns regarding the alternatives considered in detail.

Findings Required by Other Laws and Regulations

Numerous laws, regulations, and agency directives require that this decision be consistent with their provisions. We have determined that our decision is consistent with all laws, regulations and agency policy. The following summarizes findings required by major environmental laws.

National Forest Management Act (16 USC 1600 et seq.)

The National Forest Management Act (NFMA) and accompanying regulations require that several specific findings be documented at the project level. These findings are displayed in the following sections.

Consistency With Forest Plan(s) (16 USC 1604 (i))

The Apache-Sitgreaves and Tonto National Forest Land and Resource Management Plans (Forest Plans) establish management direction for both national forests. This management direction is achieved through the establishment of Forest Plan goals and objectives, standards, guidelines, and Management Area goals and accompanying standards and guidelines. Project implementation consistent with this direction is the process by which we move toward the desired conditions described by these Forest Plans. Forest Plan direction provides the sideboards for project planning. In addition, the National Forest Management Act requires that all resource plans be consistent with the Forest Plan (16 USC 1604 (i)). The DEIS describes how the purpose and need for the project was developed by using desired conditions and Forest Plan Management Area goals and objectives (DEIS page 6). The alternative development process and the management goals of the alternatives are described in Chapter 2 (pages 14-22) of the DEIS, while the environmental consequences of the alternatives in relation to the Forest Plan standards and guidelines are displayed within each resource section described in Chapter 3 of the DEIS.

Selection of Alternative 2 would have required amending both the Apache-Sitgreaves and Tonto National Forest Plans to allow harvest of burned, dead trees on slopes over 40 percent in portions of the headwaters of the Canyon Creek drainage that have, as a result of the Rodeo-Chediski Fire, reverted to vegetation structural stage 1 (grass and forbs) (DEIS pages 8-9). It was determined that this would be a non-significant amendment to both Forest Plans in accordance with guidance provided in Forest Service Handbook 1909.12, Chapter 5.32. This determination is not displayed in this document but is available in the Project Record (Doc. #78). Alternatives 3, 4 and 5 are consistent with both the Apache-Sitgreaves and Tonto Forest Plans.

Suitability for Timber Production

Alternative 4 includes salvage on lands allocated to MA 01 and MA 02 (Apache-Sitgreaves Forest Plan, USDA 1987) and on lands allocated to MA 5D (Tonto Forest Plan, USDA (1985). These lands are classified as suitable for timber and fuelwood production and salvage harvest is consistent with direction stated in the Apache-Sitgreaves Forest Plan (pages 119 and 145), Tonto Forest Plan (page 151) and with 36 CFR 219.27(c)(1). Evaluation of the alternatives compared to Forest Plan standards, goals and objectives for this project showed that Alternative 4 is consistent with both Forest Plans.

Clear Cutting and Even-aged Management

This action would not create additional openings beyond those already created by the Rodeo-Chediski Fires of 2002. In addition, NFMA contains a specific exception (219.27(d)(2)(iii)) that established size limits do not apply to the size of areas harvested as a result of natural catastrophic conditions, such as fire, insect and disease attack, or windstorm.

Timber stands within the area have adapted to a fire-dependent ecosystem. In many areas the fires themselves created even-aged conditions. It was determined that the silvicultural systems in Alternative 4 are appropriate to meet the objectives and requirements of both Forest Plans.

Vegetation Manipulation

The proposals that involve vegetation manipulation of tree cover for any purpose must comply with seven requirements found at 36 CFR 219.27(b). The prescribed management practices shall:

- a) *Be best suited to the goals stated in the Forest(s) Plan(s).* These goals are stated in Chapter 3 of the DEIS under *Regulatory Requirements* for each resource section discussed in that chapter. Based upon review of pertinent information from the DEIS, ID Team field review, and the project file, it was determined that Alternative 4 is suited to meet these goals while responding to public concerns.
- b) *Assure that technology and knowledge exists to adequately restock lands within five years after final harvest.* The knowledge and technology currently exists to adequately restock the harvested areas (DEIS pages 81-82). This provision was intended to keep the Forest Service from doing clearcuts, seed cuts, or overstory removals on lands that couldn't be satisfactorily returned to a fully stocked condition and has no bearing on intermediate harvests or lands deforested by catastrophic events. Fire salvage does not trigger the five-year NFMA reforestation requirement. Salvage is not a final harvest method; it is an intermediate harvest method. Reforestation may follow salvage, but it wasn't the harvest that generated the need, it was the fire.
- c) *Not be chosen primarily because they will give the greatest dollar return.* The decision to implement Alternative 4 was based on a variety of reasons as discussed earlier in this decision. Economics was one of the many factors that were considered.
- d) *Be chosen after considering potential effects on residual trees and adjacent stands.* In selecting Alternative 4, the effects on residual trees and adjacent stands was considered as evidenced in the discussions on pages 81-82 of the DEIS.
- e) *Be selected to avoid permanent impairment of site productivity and ensure conservation of soil and water resources.* Alternative 4 avoids impairment of site productivity. This determination is supported by the disclosures in the Soil and Hydrologic Resources sections of the DEIS and the application of BMPs to prevent the loss of soil as displayed in the DEIS (pages 22-26 and Appendix B). Field inventories and analysis of similar harvest units verified that the selected treatments would meet soil quality standards.
- f) *Be selected to provide the desired effects on water quality and quantity, wildlife and fish habitat, regeneration of desired tree species, forage production, recreation uses, aesthetic values, and other resource yields.* Alternative 4 includes watershed restoration activities ranging from creating ground cover on approximately 41,000 acres burned at moderate and high severity levels and maintaining 223 miles of Level 2, 3 and 4 roads. The standards and guidelines contained in both Forest Plans are designed to provide the desired effects of management practices on other resource values. This alternative meets or exceeds applicable standards and guidelines, as noted under "Consistency With Forest

Plans” in this section. Consideration of these factors is documented throughout Chapters 2 and 3 of the DEIS and in the project file.

- g) *Be practical in terms of transportation and harvesting requirements and total costs of preparation, logging, and administration.* There would be no permanent road construction. Approximately 18.2 miles of temporary road would be constructed (DEIS pages 31 and 202). No harvest activities would occur within Inventoried Roadless Areas (DEIS page 186). Alternative 4 is a practical selection as shown in the economic analysis displayed in Chapter 3 (pages 213-217) of the DEIS and supporting documentation located in the project file.

Sensitive Species

Federal law and direction applicable to sensitive species include the National Forest Management Act and Forest Service Manual (2670). The Regional Forester has approved the sensitive species list that includes those plants and animals for which population viability is a concern. The analysis and projected effects on all sensitive species listed as occurring or possibly occurring on the Apache-Sitgreaves and Tonto National Forests were reviewed (DEIS pages 146-156 and Appendix D), in the Biological Assessment and Evaluation and the Wildlife, Fisheries, and Aquatic Resources Report in the project file. These findings document that Alternative 4 would not likely contribute to a trend towards federal listing or loss of viability to any population or species. Disclosure of possible impacts to sensitive plants is included in Appendix D, pages 324-328 of the DEIS.

Necessity of Roads

NFMA requires that the necessity of roads be documented and that road construction be designed to “standards appropriate for the intended uses, considering safety, cost of transportation, and impacts on land and resources” [36 CFR 219.27(10)]. NFMA also requires that “all roads are planned and designed to re-establish vegetation cover on the disturbed areas within a reasonable period of time, not to exceed 10 years ... unless the road is determined necessary as a permanent addition to the National Forest Transportation System” [36 CFR 219.27(11)] (DEIS page 193).

As displayed in the DEIS (pages 7, 16, 201, 202, 203 and 219) only temporary roads would be constructed and then decommissioned after salvage activities are completed. Some roads that are currently closed (Level 1 roads) would be opened to facilitate harvest activities and then re-closed and seeded after use (DEIS pages 20, 31 and 202). Approximately 223 miles of Level 2, 3 and 4 roads and their drainage systems would be maintained commensurate with their use during harvest activities (DEIS pages 199-200).

An area Roads Analysis Process (RAP) has been completed for temporary road construction proposed within the analysis area and is available in the Project Record (DEIS page 198, Doc. #98). A RAP was also completed for the existing road system and is available in the Project Record (Doc. #32). Based on these actions and analysis, the intent of NFMA road requirements has been met.

The Clean Water Act and State Water Quality Standards

Arizona Revised Statute 49-221 is tiered to the CWA and provides water quality standards and a Clean Water Action Plan Summary for the State of Arizona. Arizona Department of Environmental Quality (ADEQ) has primacy requirements over regulating requirements of the CWA.

Alternative 4 is expected to comply with applicable Clean Water Act and State water quality standards through the application of project design criteria, best management practices, and soil and water conservation practices (DEIS pages 22-26, 64, 198-199 and Appendix B). In-depth discussions of the effects on aquatic resources can be found in the Soil and Hydrologic Resources section and in the Wildlife, Fisheries and Aquatic Resources section (DEIS pages 54-70 and 162-165). The Arizona Department of Environmental Quality has been informed of this project and provided with the mitigation measures required to avoid impacts (DEIS page 231).

Water quality monitoring includes best management practices implementation and effectiveness reviews (DEIS pages 22-26; Appendices B and F, ROD Appendix A). These steps will document the results of the protective measures employed in this project and serve as ongoing monitoring of their effectiveness in protecting water quality.

Wild and Scenic Rivers Act (16 U.S.C. 1271 et seq.)

A segment of Canyon Creek was identified as eligible for potential wild, scenic, recreational river designation in the 1993 Resource Information Report (USDA, 1993). The segment, located within a half-mile wide corridor approximately 5.4 miles in length, begins at Canyon Creek Springs and continues to the boundary of the Fort Apache Reservation. The segment meets eligibility requirements because it is free flowing, free of impoundments and has outstanding remarkable wildlife and ecological values. This segment has not been officially designated as part of the Wild and Scenic Rivers system to date.

Implementation of Alternative 4 would not authorize treatments within the corridor identified along Canyon Creek and therefore would not impact its designation as eligible for inclusion into the National Wild and Scenic Rivers System at some future date.

The Endangered Species Act (16 USC 1531 et seq.)

In accordance with Section 7(c) of the Endangered Species Act, as amended, the U.S. Fish and Wildlife Service (USFWS) identified the listed, and proposed threatened or endangered species that may be present within the analysis area.

A Biological Assessments/Evaluation (BAE) was prepared and a Biological Opinion has been received from the USFWS regarding threatened and endangered species on February 11, 2004. The USFWS has concurred with the determination that the project may affect but is not likely to adversely affect the bald eagle (*Haliaeetus leucocephalus*) or the Chiricahua leopard frog (*Ranid chiricahuensis*) and that the project would have no effect to the Colorado pikeminnow (*Ptychocheilus lucius*).

Formal consultation with the USFWS was initiated on August 18, 2003 because of possible cumulative adverse effects to the Mexican spotted owl (*Strix occidentalis lucida*). A complete listing of species considered and the determinations made as to the effects of this project is displayed in the DEIS (Appendix D). The BAE and documentation of consultation may be found in the Project Record (Doc. #96, 97, 99, 106 and 109). Reasonable and prudent measures and terms and conditions of the Biological Opinion dated February 11, 2004 are incorporated herein by reference.

In addition, a BAE was completed January 21, 2004 to determine the effects of Alternative 4 to proposed critical habitat for MSO. It was determined that this alternative would not adversely modify proposed critical habitat (Project Record, Doc. #106).

Migratory Bird Treaty Act and Executive Order 13186

A number of bird species listed in *Birds of Conservation Concern 2002* (USDI, 2002) under BCC Region 16, Southern Rocky Mountain Region; and BCC Region 24, Sierra Madre Occidental, were reviewed for their potential occurrence in the analysis area. Those species present in any season, but not considered rare accidentals, were analyzed for impacts from proposed harvest activities. It was determined that three species may be impacted by the project due to possible loss of nesting trees: flammulated owls (*Otus flammeolus*), Lewis woodpecker (*Melanerpes lewis*) and Williamson's sapsucker (*Sphyrapicus thyroideus*).

These possible impacts have been offset by project design and mitigation to provide adequate conservation measures for migratory birds. For instance, out of the 94,500 acres burned at moderate and high severity levels, approximately 43 percent or 41,000 acres are to be treated in Alternative 4. This amounts to less than 24 percent of the total area occurring within the burn perimeter on the Apache-Sitgreaves and Tonto National Forests' portion of the fire. Treatment areas are widely scattered across the landscape and snag retention and coarse woody debris requirements would assure maintenance of habitat for a wide variety of birds associated with snags and dead wood. Snag retention standards for Alternative 4 require leaving additional snags from the largest two-inch diameter class that would provide longer lasting habitat for cavity nesting birds.

National Historic Preservation Act

Cultural resource surveys have been completed within areas of potential effect where ground-disturbing activities would occur. The finding of "no effect on historic properties" has been recommended by Dr. Charlotte Hunter, Forest Archeologist, and approved by Acting Forest Supervisor W. Carlene Willis on February 10, 2004 in accordance with the Programmatic Agreement dated December 24, 2003 (Project Record, Doc. #108). Recognizing that the potential exists for unidentified sites to be encountered and disturbed during project activities, contract Special Provision C6.24# will be included in all timber sale contracts. This clause allows the Forest Service to unilaterally modify or cancel a contract to protect cultural resources regardless of when they are identified. This provision would be used if a site is discovered after harvesting operations begin.

The Forest Service has consulted with the White Mountain Apache, San Carlos Apache, Tonto Apache, Yavapai-Apache, Yavapai-Prescott and Hopi Indian Tribes, Pueblo of Zuni, Navajo Nation, and Fort McDowell Indian Community during the analysis process (DEIS, pages 167-168 and Project Record, Doc. #94). Cultural resource officers for these tribes have not indicated to the Forest Service any concerns regarding this proposed project.

Environmental Justice (E.O. 12898)

The selected action was assessed to determine whether it would disproportionately impact minority or low-income populations, in accordance with Executive Order 12898. No impacts to minority or low-income populations were identified during scoping and the effects assessment (DEIS page 217).

Environmentally Preferred Alternative

One or more environmentally preferable alternatives are required to be disclosed by law. The environmentally preferable alternative is not necessarily the alternative that would be implemented and it does not have to meet the underlying need for the project. It does, however, have to cause the least damage to the biological and physical environment and best protect, preserve, and enhance historical, cultural, and natural resources (Section 101 NEPA: 40 CFR 1505.2(b)).

Alternative 4 has been identified as the environmentally preferred alternative (40 CFR 1502.14(e)). Alternative 4 would cause less short-term adverse effects to soils and hydrologic resources than Alternative 2. This alternative would stabilize soils impacted by the fire, reduce impacts to water quality, and reduce future fuel loading in individual treatment units. This alternative maximizes protection of potential wildlife habitat by implementing additional snag retention standards and avoiding certain sensitive species' habitats.

This alternative meets the statutory mission and responsibilities of the Apache-Sitgreaves and Tonto National Forests, as stated within the goals, objectives, and standards of both Forest Plans. Given consideration of the environmental, technical, and economic factors identified through both internal and external scoping, this alternative most clearly represents the issues, concerns and opportunities associated with environmental protection and restoration.

Appeal Provisions and Implementation

This decision is subject to appeal in accordance with 36 CFR 215.7. As stated in 36 CFR 215.11, an appeal may be filed by any person or non-Federal organization (Federal Agencies may not appeal). A written appeal must be submitted within 45 days after the date of the notice of this decision is published in the White Mountain Independent and the East Mesa Tribune. Appeals must be submitted to:

**USDA Forest Service, Southwestern Region
ATTN: Appeals Deciding Officer (RFO)
333 Broadway SE
Albuquerque, NM 87102**

Appeals must meet the requirements of 36 CFR 215.14. Detailed records of the environmental analysis are available for public review at the Apache-Sitgreaves National Forests Supervisors Office, 309 South Mountain Ave., Springerville, AZ.

If no appeal is received, implementation of this decision may occur on, but not before, five business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for 15 days following the date of appeal disposition.

Contact Persons

For additional information concerning this decision or the Forest Service appeal process, you may contact the following individuals:

Robert J. Anderson, Forest Planning Staff Officer
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Or:

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Rodeo-Chediski Fire Salvage Project
309 South Mountain Ave.,
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(928) 333-6284

Responsible Officials

ELAINE J. ZIEROTH
Forest Supervisor
Apache-Sitgreaves National Forests

Date

KARL P. SIDERITS
Forest Supervisor
Tonto National Forest

Date

Appendix A Mitigation Measures

Table 1 – Mitigation Measures Common to All Action Alternatives

The following environmental protection measures would be employed in all action alternatives to mitigate the effects of conducting activities in areas where potential impacts to resources are anticipated.

Mitigation Measure ID	Mitigation Measure and Management Description	Alternative
	Soils and Watershed – General Treatments	
SOILS-M-1	Limit ground disturbing activities (tractor skidding, decking, machine piling, etc.) to dry or frozen conditions especially on soil map units 183, 191, 192, 193, 197, 198, and 202. This would reduce compaction and soil displacement (rutting) associated with timber harvesting activities on sensitive soils when they are wet or saturated.	2, 3, 4, 5
SOILS-M-2	At the discretion of the Sale Administrator, restrict hauling and skidding during wet periods to prevent damage to soils or road systems. See A-SNF Guidelines for Excessive Rutting, 6/10/92. These guidelines are applicable to any TES unit but particularly to units 53, 187, 198, and 202.	2, 3, 4, 5
SOILS-M-3	Slope Limitations for Logging: Limit salvage and removal of trees to areas with slopes less than 40%. Operating on or near the contour, where possible, allows for natural drainage of skid trails, minimizing gully formation within skid trails.	2, 3, 4, 5
SOILS-M-4	Employ a “felling to lead” method to complement skidding practices. This practice involves felling trees toward a predetermined pattern. Allow operators to skid in random patterns to minimize soil compaction associated with single skid trails.	2, 3, 4, 5
SOILS-M-5	Employ directional felling and end-lining to minimize damage to live vegetation and soils, especially in Streamside Management Zones.	2, 3, 4, 5
SOILS-M-6	Design, locate, and use designated skid trails when skidding logs through areas not receiving treatment (such as unburned or low-severity burn areas).	2, 3, 4, 5
SOILS-M-7	Select landing locations and sizes that minimize vegetation and soil loss. After harvest, close landings by scarifying them, placing slash and woody debris on disturbed areas, and seeding them.	2, 3, 4, 5
SOILS-M-8	Lop all logging slash to a 2-foot height.	2, 3, 4, 5
	Soils and Watershed – Channel Treatments	
SOILS-M-9	Fall dead trees away from the channel in bottom areas along 2nd order streams with defined bed and banks. Avoid felling into or across drainages.	2, 3, 4, 5
SOILS-M-10	Fall dead trees across swales and on small 1 st order headwater streams without defined bed or banks.	2, 3, 4, 5
SOILS-M-11	In channels, remove dead and down salvage generated debris that may become mobilized in flood events, deposited in debris jams, and lodged downstream in constricted channel reaches, culverts, bridges, and/or spillways.	2, 3, 4, 5
	Stream Channel Protection: The following guidelines apply to Streamside Management Zones (SMZs).	

Mitigation Measure ID	Mitigation Measure and Management Description	Alternative
SOILS-M-12	Minimum Filter Strip Widths in Streamside Management Zones: In areas with "Slight" erosion hazard: 100 feet (slope distance) on each side of the stream channel from the top of each bank. (TES Mapping Units 53, 178, 183, 186, 191, 193, 197, 198, and 5078).	2, 3, 4, 5
SOILS-M-13	Minimum Filter Strip Widths in Streamside Management Zones: In areas with "Moderate" or "Severe" erosion hazard: 150 feet (slope distance) on each side of the stream channel from the top of bank. (TES Mapping Units 52, 54, 55, 181, 182, 187, 192, 189, 202, 5161, 5080, 5162, and 6405).	2, 3, 4, 5
SOILS-M-14	Permitted activities within filter strips are limited to: <ul style="list-style-type: none"> ▪ Directional felling of trees away from the channel, and not across it. ▪ Ground skidding or end-lining logs out of the area. ▪ Skidding perpendicular across channels at designated crossings. ▪ Decking of logs and machine piling permitted only along existing roads that are already located within filter strips; however, logs must be decked at least 100 feet away from the channel and only on the uphill side of the road away from the channel. 	2, 3, 4, 5
SOILS-M-15	Activities not permitted within filter strips: <ul style="list-style-type: none"> ▪ Skidding up or down the filter strip or within the stream channel. ▪ New road construction. ▪ Piling and burning of slash. ▪ Refueling or servicing of equipment. 	2, 3, 4, 5
	The following guidelines apply to all stream channels:	
SOILS-M-16	Cross all drainages at designated crossings only. Roads and skid trails need to cross drainages perpendicular to the channel.	2, 3, 4, 5
SOILS-M-17	Maintain leadout ditches and waterbars to divert runoff from the road directly away from stream channels. Runoff shall be discharged onto areas far enough away from streams so sediment can be deposited before reaching a watercourse.	2, 3, 4, 5
SOILS-M-18	Remove debris generated from product harvest activities away from stream channels. Operating equipment within channels shall be avoided. Removal of material by hand or through end-lining is allowed. NOTE: Slash and debris can be left in first order headwater channels of ephemeral drainages designated by the District watershed representative, where slash can help retain runoff and sediment and provide headcut stabilization.	2, 3, 4, 5
SOILS-M-19	If dead trees are harvested from channel banks, directionally fell trees away from the channel, rather than across it.	2, 3, 4, 5
	The following guidelines apply to the protection of bottom areas, low points, swales, or depressions in headwater areas of ephemeral channels: (These areas may not have well-defined channel bottoms or banks).	
SOILS-M-20	Ensure that no skidding occurs up or down channel bottoms.	2, 3, 4, 5
SOILS-M-21	Ensure that no temporary road construction occurs within 75 feet of ephemeral channels.	2, 3, 4, 5
SOILS-M-22	Minimize the number of skid trails and road crossings over drainages and keep them perpendicular to the channel.	2, 3, 4, 5
SOILS-M-23	Cut only dead trees within channels or swales. High stumping would be allowed to facilitate catching debris during floods.	2, 3, 4, 5
SOILS-M-24	Ensure that logs are not decked within ephemeral streams or swales	2, 3, 4, 5

Mitigation Measure ID	Mitigation Measure and Management Description	Alternative
	Heritage Resources	
HERIT-M-1	The Forest Archaeologist may approve additional measures to further protect sites; however, if a lesser level of protection is recommended, or if it is likely that adverse effects cannot be avoided, the Forest shall consult with the SHPO on additional protection measures prior to approving Heritage Resources Clearance and prior to implementation of each phase of the project.	2, 3, 4, 5
HERIT-M-2	Treat all sites not currently evaluated for National Register eligibility as eligible for the National Register for all levels of project(s) implementation.	2, 3, 4, 5
HERIT-M-3	Ensure that no use of mechanized equipment (trucks, skidders, chippers, crushers, e.g.) occurs within established site boundaries.	2, 3, 4, 5
HERIT-M-4	Ensure that no staging of equipment or supplies occurs within established site boundaries.	2, 3, 4, 5
HERIT-M-5	Ensure that no logging slash is piled within site boundaries.	2, 3, 4, 5
HERIT-M-6	Directionally fell large-sized dead standing trees away from site features within and adjacent to established site boundaries to avoid uprooting and site damage. Trees will be left on site and felled using hand-falling techniques only.	2, 3, 4, 5
HERIT-M-7	Scatter logging slash to limit fuel concentration within established site boundaries and provide erosion protection.	2, 3, 4, 5
HERIT-M-8	Ensure that no snags are designated on identified heritage sites.	2, 3, 4, 5
	Forest Infrastructure and Roads	
ROADS-M-1	Employ dust abatement to reduce hazards caused from poor visibility and to minimize dust on road sections adjacent to private land. Magnesium chloride, or lignin will not be permitted on 400' sections of roads identified in Appendix-F of the Biological Assessment and Evaluation.	2, 3, 4, 5
ROADS-M-2	Install signs in accordance with MUTCD (Manual on Uniform Traffic Control Devices, 2000 edition.)	2, 3, 4, 5
ROADS-M-3	Construct turnouts or double lane sections in accordance with FSH 7709.56. No additional turnouts will be constructed from Gentry Lookout west on the 300 road for one mile	2, 3, 4, 5
ROADS-M-4	Restrict activities on weekends and holidays on high use travel routes. Close the 86 road to public traffic from Gibson Ranch to the 300 road during harvest activities.	2, 3, 4, 5
ROADS-M-5	Restrict hauling on un-surfaced roads to dry or frozen conditions.	2, 3, 4, 5
ROADS-M-6	Employ radio communication and install mile-posting signs to warn operators of traffic conditions.	2, 3, 4, 5
ROADS-M-7	Implement road closures and/or one way travel restrictions during logging and salvage activities to minimize conflicts with haul vehicles.	2, 3, 4, 5
ROADS-M-8	Install additional signing on State 60 and 260 during harvest or road work activities and consider adding flag-people under extremely heavy traffic conditions.	2, 3, 4, 5
ROADS-M-9	Decommission (obliterate) temporary roads by scarifying road beds, reshaping the road prism to match the original contour, placing slash and woody debris on the disturbed area, and seeding the disturbed area.	2, 3, 4, 5
ROADS-M-10	Discharge drainage from the road prism and associated ditches into buffer strips (or scattered slash piles) where its energy can be dispersed and sediment can drop out before reaching the natural drainage system. If this is not possible, relocate that portion of the road away from the channel or identify it as needing future relocation as part of the long-term rehabilitation of the burned area.	2, 3, 4, 5

Mitigation Measure ID	Mitigation Measure and Management Description	Alternative
ROADS-M-11	Improve or correct rolling dips, stream crossings, and culverts. Extend and enlarge, as needed, the raised portion of water-bars on the uphill side of the road to insure all flow from ditches or drainages is diverted across the road.	2, 3, 4, 5
ROADS-M-12	Install hardened drainage crossings at natural grade. Additional rolling dips or water-bars are preferred to culverts to divert water off roads and out of roadside ditches.	2, 3, 4, 5
	Wildlife	
WILD-M-1	Ensure that oaks with a main stem of 10-inches dbh or greater are not harvested.	2, 3, 4, 5
WILD-M-2	Ensure that junipers with 18" dbh or greater are not harvested.	2, 3, 4, 5
WILD-M-3	In Woodland species type, leave at least 100 snags per 100 acres on 40 percent of the pinyon juniper woodland acres in each diversity unit. Snags are defined for this species type as at least 9-inches DRC and at least 10-feet high.	2, 3, 4, 5
	Chiricahua Leopard Frog	
WILD-M-4	Establish a 100 foot no-action buffer around potential habitat. Complete surveys for the Chiricahua leopard frog prior to any activities in or within 100 feet of potential habitat. Potential habitat consists of any ponds, lakes, or streams in the analysis area. Magnesium chloride, or lignin will not be permitted on 400' sections of roads identified in Appendix-F of the Biological Assessment and Evaluation	2, 3, 4, 5
	Mexican Spotted Owls	
	Mitigation measures for Mexican spotted owls are listed on a PAC-by-PAC basis, see Appendix C – Wildlife Management Restrictions of the DEIS.	
WILD-M-5	Maintain a speed limit of 25 M.P.H. through all PACS or areas within ¼ mile of PACs to minimize vehicle-owl collisions.	2, 3, 4, 5
	Northern Goshawks	
	Mitigation measures for northern goshawks are on a PFA by PFA basis, see Appendix C – Wildlife Management Restrictions of the DEIS. These mitigation measures assume that treatments would only take place in medium and high severity burn locations.	

Table 2 – Mitigation Measures Specific to Selected Alternatives.

The following environmental protection measures would be employed in select alternatives to mitigate impacts to resources.

Mitigation Measure ID	Mitigation Measure and Management Description	Alternative
	Wildlife	
WILD-M-6	Create a ¼ mile no-fly zone for helicopters around Canyon Creek Fish Hatchery to reduce disturbance to Bald Eagles	2
WILD-M-7	In areas that were formerly mixed conifer habitats and are proposed for treatments, leave 3 snags and 5 dead and down trees per acre. Snags would be selected from the largest two-inch diameter class on site and left in groups of 2 to 6 snags.	3, 4
WILD-M-8	In areas that were formerly ponderosa pine habitats and are proposed for treatments, leave 2 snags and 3 dead and down trees per acre. Snags would be selected from the largest two-inch diameter class on site and left in groups of 2 to 6 snags.	3, 4

Mitigation Measure ID	Mitigation Measure and Management Description	Alternative
WILD-M-9	Within a quarter-mile of PFAs & PACs, leave 5 of the largest two-inch diameter class snags per acre and 3 logs 12-inches in diameter or greater at the midpoint and 10-feet or greater in length.	3, 4
WILD-M-10	In areas that were formerly mixed conifer habitats and are proposed for treatments, leave 3 snags, preferably in groups of 2-6, and 5 logs per acre. Snags would be at least 18" DBH and 30 feet tall. Logs would be at least 12" in diameter at mid-length and at least 10 feet long.	2, 5
WILD-M-11	In areas that were formerly ponderosa pine habitats and are proposed for treatments, manage for 2 snags, preferably in groups of 2-6, and 3 logs per acre. Snags would be at least 18" DBH and 30 feet tall. Logs would be at least 12" in diameter at mid-length and at least 10 feet long.	2, 5
WILD-M-12	No salvage logging activities, not including haul truck traffic, will be implemented within one mile of the active peregrine falcon nesting habitat between March 1 and August 15.	2

Appendix B -- Wildlife Management Restrictions

The following management restriction apply to Mexican spotted owl protected activity centers (PACs) and northern goshawk Post-fledgling Family Areas (PFAs) during harvest activities to remove dead timber from the treatment areas displayed in the Rodeo-Chediski Salvage DEIS for action alternatives considered in detail.

Mexican spotted owl PAC's

There are eight guidelines given for PAC's (USDI, Fish and Wildlife Service, 1995. *Recovery plan for the Mexican spotted owl*). These are found in Vol. I, Part III, 86-89, but only numbers 5d and 8 would be specific to this project:

- **5d.** Treatments can occur only during the non-breeding season (1 September-28 February) to minimize any potential deleterious effects on breeding owls.
- **8.** If a stand replacing fire occurs within a PAC, timber salvage plans must be evaluated on a case-specific basis.

Further information indicates that salvage should only be considered in PACs when the fire is extensive in size and results in the mortality of substantial proportion of trees (page 89). Additionally, any such project should be designed to meet the intent of the Recovery Plan by protecting existing habitat and accelerating the development of replacement habitat.

These mitigations are based on the following assumptions:

- Salvage will occur in moderately and severely burned areas only, and will involve the removal of dead trees only.
- The Service will be provided with additional information, and changes may be required if this information generates additional concerns for the owl. The information needed includes transportation routes and estimated usage of certain roads, as well as survey information as it becomes available.
- Salvage will not occur in existing PACs.
- Five snags per-acre will be left within ¼ mile of PACs. Snags will be recruited from the largest 2-inch size class trees within the area.
- The Forest Service will contact the Service when surveys locate owls.

The following table lists PACs by number and the management requirements and alternatives that the restrictions would apply to for protection of Mexican spotted owls. No treatments are proposed in PAC 201, 202, 203, 204, 205, 206, 208, 502, 508, 511, 512 and 513.

Table 1 - Mexican spotted owl mitigation measures for Protected Activity Centers (PACs) by alternative

PAC	Management Requirements	Alternative
PAC 201	No treatments proposed, No hauling through PACs.	2, 3, 4, 5
PAC 202	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 203	No restrictions, no treatments proposed	2, 3, 4, 5
PAC 204	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 205	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 206	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 207	Do not use FR 87 through PAC for hauling	2, 3, 4, 5
PAC 208	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 209	25 mph speed limit on FS 86 in sections 19 &20	2, 3, 4, 5
PAC 210	25 mph speed limit on FS 86 from the Black Canyon Rim Campground to Black Canyon Lake.	2, 3, 4, 5
PAC 214	25 mph speeds limit on FS 300 from the Black Canyon Rim Campground to the intersection of FS 300 & FS 9564H.	2, 3, 4, 5
PAC 502	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 503	Timing on Harvest and Haul.	2
PAC 504	Timing on harvest and Haul.	2
PAC 508	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 509	Timing on Harvest and Haul.	2
PAC 510	Timing on Harvest and Haul.	2
PAC 511	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 512	No restrictions, no treatments proposed.	2, 3, 4, 5
PAC 513	No restrictions, no treatments proposed.	2, 3, 4, 5

The following table lists PFAs by number and the management requirements and alternatives that the restrictions would apply to for protection of northern goshawks. No treatments are

proposed in the Outlaw, Willow Wash, Gourd Flat, Left Hand, Lons Canyon 2, Danish Hollow and Bear Canyon PFAs.

Table 2 - Northern goshawk mitigation measures for Post-fledgling Family Areas (PFAs) by alternative

PFA Name	Management Requirements	Alternative
Upper Canyon Creek	Breeding season restrictions on implementation of treatment activities to include road use within the PFA unless no birds found.	2, 3, 4, 5
Jersey Horse	Breeding season restrictions on implementation of treatment activities and road use on 9556E and 9556Q.	2, 3, 4, 5
Baca	Breeding season restrictions on implementation of treatment activities and road use	2, 3, 4, 5
Heber Hollow	Breeding season restrictions on implementation of treatment activities within the PFA. No restrictions on FR 50.	2, 3, 4, 5
Bunger	Breeding season restrictions on treatments including the use of FR 166 for that portion of the 166 which passes through sections 25 & 30 immediately west of FS 51 unless no birds found.	2, 3, 4, 5
Outlaw	No restrictions, no treatments proposed.	2, 3, 4, 5
Dead Horse	Breeding season restrictions on implementation of all treatment activities including hauling.	2, 3, 4, 5
Blevins	No restrictions, treatments proposed in SW corner of PFA. Area is severely burned.	2, 3, 5
Pig Pen	No restrictions, treatments proposed along the southern edge of PFA.	2, 3, 5
Bear Springs	Breeding season restrictions on treatments and hauling within the PFA.	2, 3, 4, 5
Willow Wash	No restrictions, no treatments proposed.	2, 3, 4, 5
Coal Canyon	No restrictions, no treatment proposed.	2, 3, 4, 5
Gourd Flat	No restrictions, no treatments proposed.	2, 3, 4, 5
Ashurst	No restrictions, totally burned, no nesting habitat remains.	2, 4, 5

PFA Name	Management Requirements	Alternative
South Cottonwood	Breeding season restrictions on treatments and the use of FR 9871T.	2, 3, 4, 5
Town Draw	No restrictions, totally burned, no nesting habitat remains.	2, 3, 4, 5

Appendix C – Monitoring Requirements

Table 1. Rodeo-Chediski Fire Salvage Monitoring Requirements

Resource Area/ Question	Factors to Measure	Sampling Methods	Timing and Frequency	Indication of Need to Change	Funding Source	Annual Cost Estimate	Baseline Data Source
Watershed							
Effectiveness Monitoring: (1) Are treatments resulting in beneficial increases in water yield or unacceptable peak flow events that may alter stream channel morphology? (2) Does implementing BMPs result in protecting water quality for this project? (3) Are standards for protecting water quality adequate and being properly implemented on the ground? (4) Is long-term soil productivity being maintained and enhanced?							
1, 2, 3, 4	Water quality, stream bed morphology, soil quality	Ocular evaluation by a soil scientist and hydrologist; Post project interdisciplinary reviews to determine if BMPs established were implemented as designed	Once per project lifespan	BMPs are not effective in protecting water quality	KV Plan for Project	\$5,200	Surveys conducted by AGFD pre- and post-fire
Wildlife							
Implementation Monitoring: (1) What are current and projected Habitat Quality Indices (HQIs) and forage/cover ratios for Management Indicator Species (MIS)? Effectiveness Monitoring: (2) Are treatments resulting in a loss of key habitat features such as snags, dead and down logs, and vegetative cover? (3) Is TE&S suitable habitat being affected? (4) What are the cumulative effects of management activities and natural events on habitat capability? (5) Are Threatened, Endangered and Sensitive (TE&S) species with “May Affect” determinations impacted during their breeding seasons by harvest activities, equipment noise, or other disturbance factors? (6) Are Management Indicator Species for each vegetation type affected by management activities?							
1, 4	HQIs	Run HQI and FVS models using stand exam data to determine VSSs and HQIs	Once per project lifespan	Non-compliance with management area plans; non-compliance with utilization standards; comprehensive plan goals are not met.	KV Plan for Project	\$3,000	Apache-Sitgreaves Annual Monitoring Reports.

Resource Area/ Question	Factors to Measure	Sampling Methods	Timing and Frequency	Indication of Need to Change	Funding Source	Annual Cost Estimate	Baseline Data Source
2	Large snags and down logs, Canopy cover	Stand exam plots, and stratified random samples. Timber stands would be monitored before and after treatment to determine changes and trajectories in snag basal areas, number of down logs over 12 inches in diameter per acre, and basal area of hardwood trees over 10 inches DRC	Immediately following harvest activities	Numbers of snags per acre and down logs over 12 inches in diameter per acre do not meet averages specified in alternative selected for implementing project	KV Plan for Project	\$5,200	MSN analysis as described in Vegetation Section
3	Threatened, Endangered, and Sensitive habitat	Run HQI and FVS models using stand exam data to determine VSSs and HQIs	Once per project lifespan	Any identified species with a may affect determination;: when any potential impact is identified on occupied or potential habitat; other TE&S species: when any potential impact may move a sensitive species toward Category 1 listing	KV Plan for Project	\$1,200	Apache-Sitgreaves Annual Monitoring Reports.
5	Threatened, Endangered and Sensitive Species (TE&S)	Conduct surveys for species with “may affect” determinations on all three Ranger Districts according to current monitoring protocol	Per R-3 Protocol Standards	When population trends move a sensitive species toward Category 1 listing	KV Plan for Project	\$80,000	US F&WS baseline data
6	Management Indicator Species (MIS)	Conduct surveys on all three Ranger Districts according to current monitoring protocol using existing survey and monitoring data	Number and frequency of surveys will vary according to monitoring protocol for each species	When potential habitat capability for MIS selected for each vegetation type falls below 40% within the analysis area.	KV Plan for Project	\$40,000	Data from the Forest Service, other Government agencies, and and non-government organizations.

Resource Area/ Question	Factors to Measure	Sampling Methods	Timing and Frequency	Indication of Need to Change	Funding Source	Annual Cost Estimate	Baseline Data Source
Vegetation							
Implementation Monitoring: (1) What is the harvest method for the project area? (2) Do silvicultural prescriptions precede vegetative treatments? (3) Are silvicultural prescriptions practical, will they meet the desired condition specified by the project ID team, and do they meet Forest Plan standards? What is the range and average size of created openings?							
1	Harvest methods	Annually review project stand file information and compare with harvest method schedule specified in the project plan	Once per project lifespan	Planned treatment varies + or – 25% from scheduled intervals	KV Plan for Project	\$500	Apache-Sitgreaves and Tonto NF Annual Monitoring Reports
2, 3	Harvest method effectiveness	Review project implementation plans (one proposed and one post-harvest)	Once per project lifespan	(2) When any treatment has been accomplished which was not preceded by a silvicultural prescription; (3) 15% or more of stands fail to meet LRMP standards	KV Plan for Project	\$500	Apache-Sitgreaves and Tonto NF Annual Monitoring Reports
4	Range and size of openings	Review of unit size in Stand Database	Once after project completion	If any of the units exceed size standards, without following proper procedures {36 CFR 219.12 (K)(5)}	KV Plan for Project	\$500	Apache-Sitgreaves and Tonto NF Annual Monitoring Reports
Heritage							
Implementation Monitoring: (1) Are surveys being accomplished and are they completed to Regional standards? Effectiveness Monitoring: (2) Are all sites marked for avoidance before ground disturbing activities? (3) Are marked sites being avoided during ground disturbing activities? (4) Is post-project monitoring of heritage sites being accomplished in accordance with the Rodeo-Chediski Fire Programmatic Agreement between the Forest Service and SHPO?							
1.	Heritage surveys	Heritage surveys will be monitored by Supervisory Archeologists	Once per project lifespan	When any required survey is not accomplished according to Regional standards	KV Plan for Project	\$500	Survey data & requirements of NHPA and NHRP
2	Site marking	Field visit by Forest or District archeologist after field layout is complete and prior to ground disturbing activity.	Once before project implementation	New sites are discovered within the Area of Potential Effect	KV Plan for Project	\$500	Determn. of No Adverse Effect and concurrence from AZ Hist. Pres. Officer

Resource Area/ Question	Factors to Measure	Sampling Methods	Timing and Frequency	Indication of Need to Change	Funding Source	Annual Cost Estimate	Baseline Data Source
3	Site marking	Field visit by Forest or District archeologist.	Once per project lifespan	Sites are being disturbed by harvest activities.	KV Plan for Project	\$500	Review of recorded sites on the ground
4	Post-project site monitoring	Field visit by Forest or District archeologist after harvest activities to 20 percent of sites within harvest units.	Once after project completion	Sites are being disturbed by harvest activities.	KV Plan for Project	\$500	Review of recorded sites on the ground
Visual Resources							
Implementation Monitoring: (1) Are visual quality objectives being met?							
1	Visual quality	Review of project work plans and post-accomplishment that involve vegetative treatment, trail and road construction, or other major developments.	Once per project lifespan	A project reduces visual quality levels below Forest objectives and tolerance levels in Forest Plan, deviation from the desired future condition	KV Plan for Project	\$500	Apache-Sitgreaves and Tonto NF Annual Monitoring Reports
Roads and Infrastructure							
Implementation Monitoring: (1) How many miles of roads are being built and obliterated for the life of the project? (2) How many miles of Forest roads are maintained by maintenance level?							
Effectiveness Monitoring: (3) Is the road maintenance level adequate for the normal use that the roads receive? (4) Are road closure and obliteration techniques effective?							
1	Miles of roads built and closed	Review road closures to evaluate effectiveness and techniques	Immediately after implementation	When road closures are less than 75% effective	KV Plan for Project	\$500	Roads Analysis Process for Project
2	Miles of road maintained by maintenance level	Annual accomplishment report, TIS	Once per project lifespan	20% deviation of planned accomplishment	KV Plan for Project	\$500	Deferred Maintenance Summary, Table RTEWK05L
3	Road maintenance effectiveness	Field check representative roads	Daily during wet weather events in conjunction with TSO inspection duties	Maintenance level is above/below resource and/or use, needs	KV Plan for Project	\$500	Transportation Section for Project and Deferred Maint. Sum.
4	Road closure effectiveness	Review road closures to evaluate effectiveness and techniques	Once per project lifespan	When road closures are less than 75% effective	KV Plan for Project	\$500	Roads Analysis Process for Project

Appendix D – Response to Comments Received for the DEIS

The DEIS was made available to the public for review and comments on October 6, 2003 and the Notice of Availability for the DEIS was posted in the Federal Register on October 17, 2003. Comments were received during a 45-day comment period that ended December 1, 2003. Since issuing the DEIS, three letters have been received about the analysis. Comments from those letters (see Appendix F) are provided below along with the Forest Service response to each comment. A listing of the identity of those submitting comments follows.

Response to #001-1

1. Isn't this more than a year late? It is my understanding that last year-(immediately after the fire) was the time to harvest the trees if marketable lumber was going to be possible.

Analysis of the damages began immediately following the fire. On December 23, 2002, three Decision Memos were approved that authorized the removal of approximately 24 million board feet of dead trees in administrative sites, along roads, trails, and private boundary fences, utility lines, and in developed and dispersed recreation sites, and within one-half mile of private lands in the wildland/urban interface. On January 8, 2003, four timber sales were sold to remove these dead trees. On January 9, 2003 Forest Conservation Council filed a lawsuit in the United States District Court, District of Arizona (Phoenix) blocking the removal of this timber. An order issued by Judge Martone on July 9, 2003 allowed the timber sales to proceed and salvage operations are currently underway.

The time used to complete this analysis has been necessary to comply with the requirements of existing laws and regulations. The Forest is very aware of the product deterioration, which has been a motivating factor in completing a large and complex analysis as diligently and rapidly as possible. The laws governing how National Forests are managed were not suspended or changed due to the Rodeo-Chediski Fire. Laws such as the National Environmental Policy Act (NEPA), National Forest Management Act (NFMA), Clean Water Act (CWA), Endangered Species Act (ESA), and other laws had to be followed. NEPA mandates a site-specific analysis and public involvement in the planning process. Given the large land area affected by the fire and the amount of public interest in forest management, the planning process necessarily takes time to adequately complete. The project was given the highest priority on the Apache-Sitgreaves and Tonto National Forests and received the full commitment of both Forest Leadership Teams.

Response to #001-2

2. Publication of NOA for Federal Register on date that hasn't happened yet?

Letters to known publics interested in a pending federal action are sent out preceding the publication date of the Notice of Availability that appears in the Federal Register. The NOA was published on October 17, 2003, Volume 68, Number 201, Pages 59787-59788 and is displayed in the Project Record (Doc. #104).

Response to #002-1

1. Bottom line is the Forest Service, as usual, is more interested in economic benefits of this project than environmental concerns.

You are encouraged to review the Record of Decision and the reasons given for selection of the alternative to be implemented as well as the Social and Economics Setting section of the DEIS (pages 205-217). Table 60 displays the cost of activities proposed in the various alternatives considered in detail that exceeds the anticipated revenues in all instances (DEIS, page 216). Anticipated monies collected under Knudson-Vanderberg authorities that can be used to offset costs of treatments will only amount to a maximum of 90 percent of the revenues received from the sales of forest products. This revenue is dependant upon the volume of commercial timber salvaged and the rate that successful bidders are willing to pay. Unfortunately, this only treats between 38,500-45,100 acres out of the 179,000 acres of National Forest System lands affected by the fire (DEIS, Table 9, page 30). Additional treatments and rehabilitation projects will be required over the next decade to minimize further damages from occurring.

Response to #002-2

2. My concerns are mainly with erosion caused by logging. Will the entire salvage area other than roads be protected from damage and re-seeded?

All areas affected by moderate or high burn severity levels, in addition to some areas classified at low burn severity levels, lost all organic litter ground cover due to the fire. In addition to its hydrological effect on infiltration, groundcover represents a function in nutrient cycling that is stopped through the influence of fire, and must slowly be re-built over decades or centuries. Damaged soils, especially over such extensive areas as the Rodeo-Chediski Fire, cannot recover or be repaired to pre-fire conditions in a human's lifetime. The litter layer that was consumed contained soil nutrients available on-site, which turned to ash through combustion. Ash is highly mobile and can easily be transported by wind or water. Rainfall and runoff events have already blown or washed away most ash (DEIS page 46).

Table 12 indicates that over 95,000 acres of National Forest System lands burned at moderate and high severity levels. Alternatives considered in detail will treat between 38,500-45,100 acres (DEIS, Table 9, page 30). Approximately 50,000-57,000 acres will not be treated for a myriad of economic and environmental related reasons. For instance, immediately following the fire, 48,000 acres of high priority watersheds were seeded and 18,300 acres mulched under Burned Area Emergency Rehabilitation authorities.

Response to #002-3

3. It is also not clear why the DEIS claims logging will lessen erosion.

As pointed out in the Response to #002-2, all organic litter ground cover was lost in areas that burned at moderate and high severity levels. Salvage logging proposed under action alternatives would generate various levels of ground cover from logging slash, non-merchantable treetops, and non-merchantable trees pushed over or crushed by logging equipment. Depending on the

number of trees harvested and their density per acre, this can create ground cover where none existed before harvest. On average, treatment areas within the eastern portion of the analysis area may harvest around 12 trees per acre that are 12 inches dbh or larger. On the western portion of the analysis area, up to 28 trees per acre may be harvested. This converts to approximately 30 percent ground cover, which would make a difference in sediment yield and surface runoff (DEIS page 54).

Soil quality would be improved by any of the action alternatives, as the ability to accept, hold and release water would be improved by addition of ground cover. Infiltration is encouraged with ground cover as it provides additional surface roughness to slow runoff down and allow greater time for infiltration before leaving the site. The ability to resist erosion and degradation would be enhanced as well as the ability to accept, hold and release nutrients through the addition of organics (DEIS page 60).

Salvage logging under post-fire conditions considers existing conditions vastly different than those found in healthy green forests. In healthy forests, logging can have negative effects as conditions before impacts are either pristine or nearly so. In post-fire salvage situations, conditions before logging are in the worst possible condition with peak erosion and runoff rates present in many areas. Under these conditions, salvage logging can improve all elements of soil quality and result in a net beneficial effect (DEIS page 60).

Response to #003-1

1. The proposal is exempt from the requirements of the Farmland Protection Policy Act....we do not see any immediate concerns or impacts that would directly affect wetland areas associated with agriculture.

Thank you for your review of this proposal.

Response to #004-1

1. We own 40 acres near Deer Springs Lookout that was destroyed in the fire. Adopt Alternative 4 and treat areas at the head of Cottonwood Canyon to diminish future fire danger and reduce potential soil damage downstream to the north where 200,000 acres of Aztec Land and Cattle Company private lands are located.

Treatment of dead trees around your private lands near Deer Springs Lookout and the private lands at the head of Cottonwood Canyon were authorized in the three Decision Memos approved December 23, 2002. Four timber sales were approved to remove commercial sized dead trees. Smaller non-commercial material will be crushed within one-half mile of private lands to provide defense zones against future wildfires and protect private land improvements and the public from falling snags.

These four timber sales are currently underway. Forest Service equipment and personnel are crushing timber slash and non-commercial dead trees behind salvage logging operations and have accomplished approximately 1,400 acres as of December 2003.

Response to #005-1

1. We are strongly in favor of Alternative 2. I can't see why helicopters can't be used to yard trees on steep slopes. They were used to fight the fires, along with other aircraft.

Helicopters can be used to yard trees on steep slopes as proposed in Alternative 2, however both Forest Plans must be amended to do so. Both existing Forest Plan standards now state:

“Allow no timber harvest except for fire risk abatement in mixed conifer and pine-oak forests on slopes greater than 40% where timber harvest has not occurred in the last 20 years,” (Apache-Sitgreaves Forest Plan, Amendment No. 6, pg. 70-1, 06/05/96) and Tonto Forest Plan, Amendment No. 22, pg. 40-2, 06/05/96).

Amending Forest Plans in a site-specific amendment is a simple process and is routinely done to accomplish needed objectives in forest management. An analysis of the significance of this proposed amendment was completed and determined to not be significant. This document is on file in the Project Record (Doc. #78).

Response to #006-1

1. The Town of Springerville would recommend Alternative 5 for the following reasons:

- (1) No amendments would be necessary to the Forest Plan.**
- (2) Helicopter yarding would occur to reduce impact to soils and threatened and endangered species.**
- (3) Maximum timber volume would be affected which will allow foresters to take action that will enhance forest health.**

No amendment to either the Apache-Sitgreaves or Tonto National Forest Plans would be required as disclosed under Alternative 5 (DEIS page 22). However, only Alternative 2 proposes helicopter yarding and would provide maximum timber volumes (DEIS Summary at page viii).

Response to #006-2

2. Also, please let us know how we as community leaders can advocate for forest thinning projects on the yet unburned forestlands that surrounds our towns.

The recent passage of the Healthy Forest Restoration Act providing \$760 million for this type of work has opened the door for increased funding to thin the forest surrounding communities at risk such as Springerville and Eagar through fuels reduction projects. The Apache-Sitgreaves National Forest is on the cutting edge with the White Mountain Stewardship Project, due to be advertised early in 2004. Communities can assist in this effort by promoting industries that will utilize materials thinned from the forest.

Response to #007-1

1. I am skeptical of comments of any sort making any difference. I have yet to receive any kind of an answer to my EIS comments.

Comments are important and are considered by the Responsible Official in reaching a decision regarding a proposed action. In order to be effective, comments must be specific, include reasons supporting your viewpoint, and must be within the scope of the proposal being considered and submitted in a timely manner.

Your request for a copy of the Rodeo-Chediski DEIS was received too late to meet our 1100 a.m. deadline for mailing a copy on 11/28/03. However, you were provided with the website of where a copy could be located and downloaded on that date and a hard copy of the DEIS was mailed to you via UPS on 12/01/03. Note: No additional comments were received from this commenter.

Response to #008-1

1. Why aren't the areas classified as having severe soil erosion potential included in Alternative 2, the Proposed Action?

Areas classified as having severe soil erosion potential are included in Alternative 2. These areas are specifically identified in Table 7 – Mitigation measures common to all action alternatives in mitigation measures limiting ground disturbing activities to dry or frozen conditions (DEIS pages 22-26).

Alternative 3 was specifically developed to display the effects of avoiding these sensitive soils. The direct, indirect and cumulative effects of implementing this alternative are displayed (DEIS pages 54-70).

Response to #008-2

2. They have costs of activities higher than the revenue from sale of Forest Products in every alternative except 1 which is \$0.

Alternative 1 is the No Action alternative mandated by the National Environmental Policy Act (NEPA) to display the effects of not implementing a proposal. By definition, there would be no salvage preparation, road improvement or mitigation activity costs under this alternative, as well as benefits realized, therefore this alternative is not displayed in Table 60 – Comparison of economic effects (DEIS page 216). The cost of implementing each alternative is higher than anticipated revenues. Commercial removal of dead trees while they still have economic value is a tool to reduce fuel loading and offset some of the costs that will have to be accomplished using appropriated funds. Additional treatments will be required to reduce this fuel loading that must be dealt with in the future (DEIS page 109).

Response to #008-3

3. For the species list, they have a determination of effect by alternative. However, they do not include what the effect of the fire was on each species which I think should be an important part of the information.

The purpose of the Rodeo-Chediski Fire Salvage Project DEIS is to display the effects of implementing the proposed action and its alternatives on the resources found within the analysis area. Effects of the fire on wildlife habitat pre-fire and existing conditions are described in pages 126-138 and in a number of the tables displaying those changes. The various species lists presented in Chapter 3 and in Appendices D and E describe and display the effects to wildlife resulting from implementing the alternatives considered in detail. Changes to the various wildlife habitat components are displayed in Table 35-41 where pre-fire and current habitat characteristics are shown as current habitat characteristics in accordance with Forest Service direction (DEIS pages 126-135).

Response to #009-1

1. I write to state my full support for salvage logging the Rodeo-Chediski fire and any other fires where it is environmentally practical.

Aside from the economic benefits to be gained from the salvage logging activities described in the Economic and Social Setting section (DEIS pages 205-217), there are benefits to the soils and hydrologic resources, reduction of fuel loading that will someday be subject to additional wildfires with damages exceeding what was recently experienced. Of most importance was to reduce the risk of falling dead trees to the public and private land improvements, and the benefits to the soils resource from salvage logging.

Response to #010-1

1. The United States Department of the Interior, Office of Environmental Policy and Compliance has reviewed the DEIS for the Rodeo-Chediski Fire Salvage Project and has no comments to offer.

Thank you for reviewing this document.

Response to #011-1

1. Salvage activities ...will irreversibly damage soil and watershed conditions and permanently impair long term site productivity by exacerbating topsoil erosion, compacting soils, and removing large woody debris vital for maintenance of soil productivity and ecosystem recovery.

The potential effects of salvage logging and associated activities to the soils and hydrologic resources found within the analysis area were discussed in detail (DEIS pages 39-70). These allegations are unfounded and you have failed to provide any specific site locations by text or map references where this would occur.

Long-term site productivity will be improved by the addition of woody debris from activity slash and contour felling, with estimates of approximately 30 percent ground cover being created where none exists, which would reduce sediment yield and surface runoff. Pre- and post-fire peak flows for all of the affected watersheds within the analysis area were modeled and results indicate that all action alternatives would reduce discharge amounts over baseline by about 11 percent (DEIS, Table 13, pages 55-59 and 60; see also Appendix E -- Errata for page 60).

We strongly disagree that salvage logging will remove large woody debris vital for maintenance of soil productivity. Predicted fuel loading in 10-20 years across the analysis area averages 48-91 tons/acre (DEIS, Table 24, page 103). Salvage logging will only reduce this fuel loading slightly and additional treatments are needed to reduce this to optimum levels. The long-term benefits from salvage harvest would be the reduction of large woody fuels over a large area, and subsequent reduction in future fire intensity and severity. The long-term benefit of removing large trees is much greater than the short-term fuel loading associated with salvage-generated slash. Removing large fuels and treating the slash would lower the fire risk compared to not harvesting in the area. Without logging it would take approximately five to 10 years to reach pre-fire fuel load levels at the expected rate of fuel accumulation (DEIS page 109).

It has been acknowledged that some level of soil compaction may occur during salvage logging operations and is inherent with operating machinery over the various soil types found within the harvest units. Mitigation measures that include use of Best Management Practices are in place to minimize damages to soils (DEIS pages 22-27 and Appendix B, pages 287-304). Specific soil mapping units were identified where machinery can only be operated under dry or frozen conditions. It was concluded that the limited impacts of soil compaction were more than offset by the benefits of providing ground cover (DEIS page 61).

We disagree that “.....these are reasonably foreseeable outcomes of a timber salvage operation” (damages to soil structure and soil organisms essential for maintaining long-term site productivity) as stated. Early on, the ID Team reviewed scientific literature in support of and opposed to salvage logging operations and activities as summarized in McIver, James and Lynn Starr (2000), *Environmental Impacts of Postfire Logging: Literature Review and Annotated Bibliography*. This particular document provides both opposing **and supportive** viewpoints of salvage logging such as those presented in *A Review of the Report*, by Dr. George Ice, PhD (1995), where he states, “If I was to summarize the author’s (Beschta, et al.) positions, it recommends **reverting to nature rather than working with nature**. Given the existing fuel loads in western watersheds and overlapping environmental and social concerns, we believe an exclusively *laissez faire* approach to wildfire is inappropriate.” Dr. Ice provided compelling reasons, both ecologically and socially for rapid intervention on the post-fire landscape, contrary to the statements made in the Beschta Report (PR #39).

Response to #011-2

2. Failure to recognize the potential for damage to soil, slope, watershed conditions, or long term site productivity described in studies conducted in other locations. The Forest Service failed to consider the overall net effect on soil and water resources from project activities such as skid trails and temporary roads. In addition, the DEIS failed to consider long-term effects on soil organisms such as mycorrhizal fungi communities.

References to scientific literature conducted in other locations opposing or supportive of salvage logging and the need for fuels reduction projects may be found throughout the DEIS. For instance, the Beschta Report¹ alone is mentioned on pages 13, 29, 97, 125 and 147.

The opposing viewpoints to salvage logging expressed in the above referenced scientific literature was examined in detail as to their relevance to conditions found in the Rodeo-Chediski Fire Salvage Project analysis area (see PR #39, *Literature Review for the Rodeo-Chediski Salvage and Rehabilitation Project*, Hibbetts, Jimmy E. (2002)). This document also examined the literature cited in the Beschta Report and other studies cited during scoping and found that these studies were conducted largely in the Pacific northwest or other locations where the soils, climate, vegetation and topography are vastly different than conditions found within the Rodeo-Chediski Fire analysis area and other locations in arid southwestern ponderosa pine forest ecosystems.

The potential effects of salvage logging and associated activities to the soils and hydrologic resources found within the analysis area were discussed in detail (DEIS pages 39-70). Skid trails and temporary roads are included in the equivalent disturbed area (EDA) calculations displayed for each sub watershed by alternative (DEIS, Table 13, pages 55-59).

The existing condition description for the soils resource as described in the sections dealing with soil productivity, ground cover and soil quality disclosed that much of the A-horizon where most organic litter was lost in areas that burned at moderate and high severity levels (DEIS pages 46-48). Mycorrhizal fungi communities occur primarily in the A-horizon but may be found in other soil layers as well. The effects discussions of the alternatives being considered in detail disclose the conclusions that by adding ground cover through salvage logging; all elements of soil quality will be improved, resulting in a net beneficial effect. All elements of soil quality includes mycorrhizal fungi communities that would benefit in the long-term as ground cover becomes re-established (DEIS pages 60-61).

Response to #011-3

3. Activities that may adversely affect northern goshawks must be suspended pending republication of the DEIS for Amendments to Forest Plans.

The proposed action alternative and other action alternatives considered in detail propose to salvage standing dead trees with merchantable value on lands burned at moderate and high severity levels (DEIS pages 7, 15-22). The pre- and post-fire vegetative structural stage (VSS) changes were displayed in Table 16 (DEIS page 80). . Currently, over half of the project area's vegetation is now classified as VSS 1, grasses and forbs. Areas that burned at moderate and high severity levels could remain in VSS-1 classifications for decades until trees become re-established (DEIS pages 81-82).

It was determined that "salvage logging would not impact the existing condition of northern goshawk nesting habitat quality. The goshawk population would be shifting in the analysis area for several years, due to the new mix of green nesting habitat. At this point in time, the extent

¹ "The Beschta Report" refers to the following document: *Wildlife and Salvage Logging: Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments on Federal Lands in the West*, Beschta, R.L. et al., 1995. Water Resources Research, 14:1011-1016.

and duration of those shifts are unknown” (DEIS page 152). Since only dead trees are to be harvested and adequate numbers of snags are to be retained, we do not consider this to be an irretrievable commitment of resources.

“Forest Plan direction for snag retention would be met or exceeded in all action alternatives. Other habitat components important to goshawks and identified in both Forest Plans include downed logs and coarse woody debris. All action alternatives would increase the amount of coarse woody debris on the ground immediately, but a shortage of large logs would remain for the first five years (because they were consumed during the fire);” (DEIS page 152) contrary to the erroneous statement made in this comment. As dead trees begin to fall down after the first five years, levels of coarse woody debris will increase dramatically (DEIS page 103).

It was acknowledged that noise disturbance could have short-term impacts on nesting goshawks when activities occur near goshawk nests during the breeding season (DEIS page 153). Mitigation measures are in place to minimize the likelihood of disturbance to nesting goshawks within known post-fledging areas (PFAs) (DEIS pages 22-27, 153 and Appendix C, pages 305-308).

Response to #011-4

4. The DEIS does not disclose the environmental or public safety effects of increased fire risk.

Both short-term and long-term risks of fire resulting from implementation of action alternatives were described and predicted fuel accumulations, rates of spread and flame lengths were displayed in Tables 27, 28 and 29 (DEIS pages 108-112). These predictions were calculated using fire effects modeling using programs such as Behave, Behave Plus, and others (DEIS pages 92-93).

We do not agree that the increased fire risk resulting from salvage harvest operations and related activity slash will increase substantially. Increased rates of spread and flame lengths posed by action alternatives were considered an “insignificant increase” (DEIS pages 110-112). The long-term risks to public safety posed by selection of Alternative 1 far out weigh the short-term risks posed by salvage logging in the moderate and high burn severity areas selected for treatment. The risk of a catastrophic fire will increase over time under Alternative 1 (DEIS page 107).

Safety considerations for forest users is addressed in numerous discussions throughout the DEIS (pages 88, 100, 107, 189, 190, 196, 199, and 201. Following the fire, trees posing imminent safety hazards along roads and trails were felled during BAER work and ongoing maintenance. The removal of dead trees authorized under the three Decision Memos approved December 23, 2002 will have abated many of the risks to forest users upon completion of those treatments described therein. Elsewhere, ongoing road and trail maintenance activities will minimize risk by keeping open roads clear and monitoring for safety hazard trees.

Response to #011-5

5. The increase in fire risk will be made even more severe by the construction of temporary roads, which will significantly increase access and the potential for ignition of the highly flammable slash left behind by logging operations.

We do not agree that the fire risk will be more severe by the construction of temporary roads. The DEIS (in Table 54, page 202) summarizes temporary road construction proposed in action alternatives to salvage dead trees from treatment areas, by number of segments, and average length of segments in feet. These 30-40 short segments, depending on the alternative selected, average approximately 2,500-2,700 feet serve as access to harvest units scattered across the analysis area and are mapped and displayed. Once operations have been completed, they are to be decommissioned (closed) and reseeded (DEIS page 202 and Maps 7-10).

Mitigation measures are in place requiring all slash left behind salvage logging operations to be lopped to a two-foot height.(DEIS, Table 7, page 23 and 111). Harvest in these units would not produce many fine fuels and would pose no short-term risk. Un-harvested, severely burned areas would pose a threat in 10 to 20 years when the large dead trees fall and grass and shrubs become established. Because of the dry climate, large down fuels would decay slowly and likely remain on the landscape until it burns again (DEIS pages 111-112).

Response to #012-1

1. Why aren't any of the county or local government officials members of the ID Team?

Interdisciplinary team members are selected from disciplines and skills appropriate to the scope of the action and identified issues. Teams generally consist of a combination of Forest Service staff **and other Federal Government personnel** necessary to provide the necessary analytical skills. Others may aid or support the ID Team but participation must be consistent with the Federal Advisory Committee Act of 1972. In this instance, two de facto team members were assigned to the Team and attended meetings on a regular basis, one from the US Fish and Wildlife Service and one from the Arizona Department of Game and Fish, who provided information in an advisory capacity. County and local officials were consulted throughout the analysis process but cannot serve as members on an ID Team.

Response to #012-2

2. Please provide information on the acres of critical habitat/other than critical habitat, known and estimated numbers of each species burned to death and number of each species that had to be killed to end suffering from being burned in the fire.

All of the approximately 186,000 acres of National Forest System lands within the Rodeo-Chediski Fire provide habitat for a myriad of species. You are encouraged to review the Wildlife, Fisheries and Aquatic Resources section of the DEIS (pages 121-165) and Appendices C, D and E, (pages 305-337) for more specific information about individual species. A total of 88 threatened, endangered, sensitive and proposed species (including those that occupy critical habitat) were considered in this analysis (DEIS Appendix D). There are approximately 16,350

acres of proposed critical habitat for the Mexican spotted owl within the analysis area. No other critical habitat exists within the analysis area.

Wildlife habitat resources were impacted to varying degrees as burn intensity and severity varied across the landscape. Approximately 94,538 acres experienced moderate to high severity burn levels, and 80,613 acres were either lightly burned or unburned. Table 35 provides comparisons of pre-fire and current habitat characteristics by vegetation structural stages (DEIS page 127). Changes in big game habitat are described and displayed in Tables 37-40, (DEIS pages 126-132).

Numbers of individuals of species burned to death or those that had to be destroyed to end suffering are unknown.

Response to #012-3

3. The impact on the property value of all private properties in and near the action area for each alternative should be provided.

Impacts to property values of all private lands in or near the analysis area are outside the scope of this analysis and therefore were not discussed.

Response to #012-4

4. The EIS should include the use of the proven system of using livestock for restoration of areas destroyed by fire.

All domestic livestock were removed from the analysis area after the Rodeo-Chediski Fire. Due to the severity of the fire and lack of allotment fences, stock handling and watering facilities, cattle will not be permitted back in most areas of the burn until range managers are satisfied that the area has adequately recovered and allotment fences and other needed facilities are reconstructed. It is estimated that a minimum of three to five years of recovery would be required in areas burned at moderate and high severity levels within the analysis area (DEIS page 126).

Response to #012-5

5. Request the alternative be selected that most supports the local communities.

Support to local communities is but one of many factors considered in the selection of an alternative for implementation. Table 60 displays anticipated costs, revenues and jobs considered in this analysis (DEIS page 216). The environmental and social effects, costs, and benefits have been carefully weighed in making this decision.

Response to #013-1

1. We appreciate your consideration of the comments submitted in previous comment letters dated September 25 and November 15, 2002 and feel that no further comments are necessary.

The information presented in the above referenced letters was considered during formulation of alternatives and mitigation measures designed to minimize impacts to resources. Additional information and consultation provided during ID Team meetings and reviews of various work products provided by the Department through Bob Birkeland were greatly appreciated.

Response to 014-1

1. The Forest Service has failed to provide information requested during scoping to be displayed in the DEIS and final EIS.

During the preparation of the DEIS, requirements of 40 CFR 1500-1508 were carefully followed. The kinds of data and the detail of analyses presented in the DEIS has been provided commensurate with the importance of the impacts being considered. A good deal of the information requested in your scoping letter is either unknown, irrelevant to the decision being made, or has been provided in the DEIS. Specifically you requested the following information:

- a) **Proposed logging unit boundaries, clearly defined and discernable by both textual descriptions and maps.** Maps provided in the DEIS clearly display proposed treatment areas. These maps provide the general location in relation to important known landmarks and are appropriate for this document (Maps 7-10). Large scale detailed maps are available in the Project Record.
- b) **Methods of logging prescriptions to be used (e.g. clearcut, shelterwood seed cut, etc.).** Methods of logging prescriptions are appropriate for healthy green forests. The trees to be salvaged in this proposal are clearly defined in the proposed action and its alternatives considered in detail as dead standing trees (DEIS pages 7, 15-22).
- c) **Estimates of current tree distribution per acre, broken down into appropriate size classes.** The fire burned in a mosaic pattern across the landscape leaving some areas unburned and areas burned at low, moderate and high severity levels. In addition, vegetation and size classes vary widely from the east side of the burn to the west side and from the Mogollon Rim to the north side of the burn. Estimates of current tree distribution per acre averaged over such a vast landscape would be meaningless. However, vegetative cover type by acres, vegetative structure and diameter range, and the changes in vegetative structural stages before and after the fire were provided (DEIS, Tables 14, 15 and 16; pages 78-80 and Tables 35-40, pages 127-131). Trees per acre by diameter class (VSS) by individual stand are in the spreadsheets used in the analysis (rc_postfire_veg.xls) and are available upon request.
- d) **Estimates of trees to be cut by size per acre.** This information was not available at the time of scoping. Estimates of trees cut by VSS class are in the spreadsheets used in the analysis (base_alt.xls, alt3.xls, and alt4.xls) and are available upon request.
- e) **Information on whether the Forest Service proposes to log only trees that were immediately killed by the fire, or also proposes to log burned trees which have not yet died. If the latter, please provide detailed information on mortality models used, including baselines of crown scorch and other information used to predict such mortality. The DEIS contends that only “dead” trees will be logged; does this mean 100% crown scorch?** The trees to be salvaged in this proposal are clearly defined in the proposed action and its alternatives considered in detail as standing dead trees (DEIS pages 7, 15-22). Dead trees are defined as trees that contain no green needles (DEIS page 16). Please review the definition of

moderate and high severity burn levels provided for crown scorch (DEIS pages 104-106) that indicate all vegetation has been killed by the fire in these areas.

- f) **Detailed information on location of roads to be re-constructed and constructed, clearly defined and discernable by both textual descriptions and maps.** The DEIS (in Table 54, page 202) summarizes temporary road construction proposed in action alternatives to salvage dead trees from treatment areas, by number of segments, and average length of segments in feet. These 30-40 short segments, depending on the alternative selected, averaging approximately 2,500-2,700 feet, and serve as access to harvest units and are mapped and displayed. These roads will be decommissioned (closed) and reseeded upon completion of salvage logging operations (DEIS page 202 and Maps 7-10). Large-scale maps of these road locations are on file in the Project Record.
- g) **Relation of proposed logging units to locations of threatened, endangered and other imperiled species.** This information is mapped and displayed in the Biological Assessment and Evaluation provided to the US Fish and Wildlife Service requesting formal consultation and is in the Project Record (Doc. #96).
- h) **Accurate information on the Rodeo-Chediski fires, including percentage of Forest Service land burned broken down by severity class and habitat type, as well as comparison of these percentages with those pertaining to tribal land.** Percentage of Forest Service land burned broken down by severity class and habitat type is displayed in the DEIS (Tables 12, page 46 and habitat types as displayed in Tables 35-40, pages 127-131). Comparison of these percentages with those pertaining to tribal land is not available or applicable since the Forest Service does not for the most part share common watersheds due to the Mogollon Rim. See Table 13 (DEIS pages 55-59) for acreages of affected watersheds within and adjacent to the analysis area. No significant change is predicted from implementation of any one of the alternatives considered in detail due to the small proportion of treated acreage within each watershed (DEIS page 60).
- i) **Detailed information on salvage activities taking place and anticipated to take place on the White Mountain Apache Reservation, including locations of sales, volume removed, etc.** This information is considered irrelevant to the proposal being made and the decision at hand due to the geographic separation created by the Mogollon Rim. Volumes of timber harvested on the Reservation and hauled across National Forest System lands within the analysis area was considered (DEIS page 203) and in the Biological Assessment and Evaluation in the Project Record (Doc. # 42, 43, 44 and 96).
- j) **Detailed and quantified information on adverse environmental effects caused by the Rodeo-Chediski fires, including soil impacts, increases in erosion rates and corresponding increases in sedimentation, impacts to wildlife, etc.** Detailed information is presented throughout the DEIS concerning the adverse environmental effects caused by the fire under the existing condition sections found in each resource area. The environmental consequences section of each resource area displays the anticipated impacts and benefits resulting from implementation of the alternatives considered in detail.
- k) **Detailed and quantified information concerning current management practices and status within the Rodeo-Chediski fire area, including grazing allotments and levels of grazing, road densities, on-ground and recent timber and fuelwood activity, and other management activities.** This information is displayed in detail

in the DEIS (Appendix A, pages 251-286). Road densities are addressed in the DEIS at page 195 and will not change as a result of implementing any one of the alternatives considered in detail.

Response to #014-2

2. Failure to address relevant scientific research regarding the environmental effects of post-fire salvage logging.

References to scientific literature conducted in other locations opposing or supportive of salvage logging and the need for fuels reduction projects may be found throughout the DEIS. For instance, the Beschta Report² alone is mentioned on pages 13, 29, 97, 125 and 147.

Early on, the ID Team reviewed scientific literature in support of and opposed to salvage logging operations and activities as summarized in McIver, James and Lynn Starr (2000), *Environmental Impacts of Postfire Logging: Literature Review and Annotated Bibliography*. This particular document provides both opposing **and supportive** viewpoints of salvage logging such as those presented in *A Review of the Report*, by Dr. George Ice, PhD (1995), where he states, “If I was to summarize the author’s (Beschta, et al.) positions, it recommends **reverting to nature rather than working with nature**. Given the existing fuel loads in western watersheds and overlapping environmental and social concerns, we believe an exclusively *laissez faire* approach to wildfire is inappropriate.” Dr. Ice provided compelling reasons, both ecologically and socially for rapid intervention on the post-fire landscape, contrary to the statements made in the Beschta Report.

The opposing viewpoints to salvage logging expressed in the above referenced scientific literature was examined in detail as to their relevance to conditions found in the Rodeo-Chediski Fire Salvage Project analysis area (see PR #39, *Literature Review for the Rodeo-Chediski Salvage and Rehabilitation Project*, Hibbetts, Jimmy E. (2002)). This document also examined the literature cited in the Beschta Report and other studies cited during scoping and found that these studies were conducted largely in the Pacific northwest or other locations where the soils, climate, vegetation and topography are vastly different than conditions found within the Rodeo-Chediski Fire analysis area and other locations in arid southwestern ponderosa pine forest ecosystems.

Response #014-3

3. Failure to consider reasonable range of alternatives. Thus, we once again request that you analyze an alternative that would focus on small tree removal (e.g. not allow removal of any snags over 12” dbh), or other alternatives that would offer a true alternative to the proposed action (e.g. retain the 20 largest snags in each acre).

Two alternatives were suggested and considered by the Interdisciplinary Team and were eliminated from detailed study because they failed to meet the purpose and need for this project to recover some of the value of the timber killed by the Rodeo-Chediski Fire (DEIS, page 29).

² “The Beschta Report” refers to the following document: *Wildlife and Salvage Logging: Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments on Federal Lands in the West*, Beschta, R.L. et al., 1995. Water Resources Research, 14:1011-1016.

Likewise, an alternative that would not allow removal of any dead trees over 12” dbh would not meet the purpose and need for this project. The No Action alternative (Alternative 1) would, in effect retain the 20 largest dead trees in each acre and the consequences of implementing this alternative is discussed throughout the DEIS.

Response to #014-4

4. The soils analysis is fundamentally flawed because the DEIS does not contain scientific reference in support of its conclusions.

The scientific references for each of the different important elements of soils is displayed and discussed (DEIS page 46). The Methodology Used for Data Collection and Analysis section (DEIS, pages 39-42) discloses the various scientific based surveys used to collect data, as well as the universally accepted methods utilized to analyze and model this data (USLE Model) supporting the conclusions reached in the environmental consequences section. The results of this site-specific detailed analysis is displayed and summarized in Table 13 (DEIS pages 55-59) and are available in the Project Record (Doc. #100).

See response to #014-2 for considerations given to the various scientific studies conducted in the Pacific Northwest, Sierra Nevada and other geographic areas that are not representative of the soils, vegetation, terrain and other conditions found in the Rodeo-Chediski Fire analysis area.

Response to #014-5

5. The DEIS does not contain a discussion of the cumulative effects of fire suppression activities.

The anticipated effects from implementation of the alternatives considered in detail, when added to the effects of past, current and reasonably foreseeable future activities were discussed in the various resource sections in the DEIS. The fire obliterated the effects of many of the past activities, however those activities that may have continuing effects were listed and considered (DEIS, Appendix A).

For instance, the Soils and Hydrologic Resources section discussed cumulative effects of fire suppression activities where it is stated, “The fire reduced or eliminated groundcover resulting in exposed mineral soil; soil crusting; deterioration of site productivity; reduced soil infiltration rates; increased runoff; flooding; channel erosion; sedimentation and water quality impacts. These effects, including the effects of suppression activities and BAER treatments; were integrated in the selection of representative post-fire runoff curves” DEIS page 63). The effects of fire retardants used during suppression activities were also discussed in detail (DEIS pages 49-50).

Formal consultation with the USF&WS concerning the effects of fire suppression activities was requested November 4, 2002 and the Biological Opinion was received September 9, 2003 and is in the Project Record (Doc. #97).

Response to #014-6

6. The “Reburn” Theory is unsupported. A recent Forest Service scientific report “found no studies documenting a reduction in the fire intensity in a stand that had been previously burned and then been logged,” citing the McIver & Starr (2000) literature review, at page 19).

This statement has been completely taken out of the context under which it was made. Recommendation provided in the McIver & Starr report went on to state in the very same paragraph: “Logging in postfire stands, however, would be expected to produce less fine activity fuel because the fine material burned, and one would expect removal of large-diameter material to have an intermediate-term effect similar to green tree stands.” A similar statement appears on page 21 where it is stated, “Work examining fuels on harvested green tree stands suggests that postfire logging may increase short-term fuel loads and fire risk, owing to increased fine activity fuels, but reduce intermediate and long-term fire risk through removal of larger dead structure (Brown 1980).”

Discussions of the research of other scientists indicating that heavy accumulations of dead and down material can increase the probability of future fire events were presented in the DEIS. The short- and long-term potential of a reburn in areas that burned at moderate and high severity levels were discussed in detail (DEIS pages 97-98). The concern for extreme soil degradation resulting from a severe wildfire in a reburn situation was also pointed out. These situations exist across the Rodeo-Chediski Fire landscape due to the extreme fuel loads still present and expected to occur in the future (DEIS page 103).

Response #014-7

7. Increase in fire risk not adequately discussed. Please address how many tons of slash per acre will remain in each size class of coarse woody debris.

The existing fire risk to unburned areas and areas burned at low, moderate and high severity levels as well as anticipated risks in the short- and long-term as a result of implementing the alternatives considered in detail is discussed throughout the Fire and Fuels section of the DEIS. You are encouraged to read this section again (DEIS pages 92-112) rather than repeating this discussion in this document.

Such variables as the size of trees before and remaining after salvage logging, stand densities, burn severity levels, and short- and long-term considerations averaged across the landscape as large as the Rodeo-Chediski analysis area would render this information useless. Instead, the optimum levels of coarse woody debris to remain after treatments have been identified (DEIS page 110).

Response #014-8

8. Impacts to wildlife not adequately analyzed for the Mexican spotted owl, bald eagle and Apache trout.

- a) **These PACs are disproportionately found on the Tonto National Forest, which despite its relative small acreage burned in relation to the Sitgreaves, contains nine of these PACs.** There are four PACs occurring within the Tonto's portion of the analysis area proposed for treatment under Alternative 2 as displayed in Table 43 (DEIS page 149). The nine PACs referred to in your comment is the total number of PACs occurring within the Tonto's portion of the analysis area and the remaining PACs are outside of proposed treatment areas. The survey data you have presented is outdated; see more current information obtained in 2003 that revealed owls present in eight of the 20 PACs (DEIS page 133).
- b) **The Forest Service has attempted to circumvent other requirements by re-characterizing mixed conifer protected and restricted habitat as no longer protected if those areas were moderately or severely burned.** Discussions of Mexican spotted owl (MSO) restricted, threshold and protected habitat classifications of pre- and post fire acreages by vegetation type correctly meet the definitions and requirements of the Recovery Plan, Vol. 1, as displayed in the DEIS (Table 41, pages 133-135). Vegetative structural stages for pre- and post-fire conditions are discussed and displayed (DEIS, Tables 15 and 16, pages 79-82) and correctly identify vegetation in moderate and high burn severity areas classified as VSS 1 because all of the vegetation is dead. This classification change is also based on case law established in the Corner Mountain Salvage Sale on the Gila National Forest, in *Center For Biological Diversity v. Andre*, Civil No. 01-1106 WJ/RLP ACE, 2002.
- c) **The Forest Service proposes to conduct salvage logging within ¼ mile of wintering area concentration sites near Black Canyon Lake and OW Ranch.** Mid-winter surveys to document winter use and distribution of bald eagles have occurred from 1992 through January 2003 (DEIS page 133). Mitigation measures are in place to protect wintering bald eagles, (DEIS, Table 8, page 27). A determination of may affect, not likely to adversely affect this species is displayed (DEIS, Appendix D, page 311). Alternative 4 is identified as the agency's preferred alternative.
- d) **The Forest Service has not considered the effects of proposed salvage logging on Apache trout populations on the White Mountain Apache reservation, and has failed to consider these impacts in its Biological Assessment.** The effects of the alternatives being considered were discussed for 14 species of fish. The Apache trout does not occur within the analysis area (DEIS, Appendix D, pages 316-320). The US Fish and Wildlife Service approved the list of species analyzed for effects from this project (Project Record, Doc. #68, #95).

Response to #014-9

9. A lawful roads analysis has not been conducted.

An area Roads Analysis Process (RAP) has been completed for temporary road construction proposed within the analysis area and is available in the Project Record (DEIS page 198, Doc. #98). A RAP was also completed for the existing road system and is available in the Project Record (Doc. #32).

Response to #014-10

10. The DEIS fails to address current road densities per square mile, whether those densities meet Forest Plan direction, and whether those standards will be met after proposed road construction is completed.

Current open road densities (Level 2 and above) are near forest plan standards and guidelines; averaging less than 2.0 miles/square mile (DEIS page 195). This density is within Forest Plan standards and guidelines and will not be affected by construction of temporary roads that will be decommissioned and seeded after salvage logging operations have been completed (DEIS page 203).

Response to #014-11

11. The cumulative effects analysis is inadequate.

Cumulative effects that may occur as a result of implementing any one of the alternatives considered in detail were discussed throughout the DEIS in various resource section and in Appendix A, (DEIS pages 251-286). Information relative to the decision at hand is presented in quantitative terms, such as the pre- and post-fire anticipated discharges and equivalent disturbed acreages displayed (DEIS, Table 13, pages 55-59 and Appendix A, Tables 61-66, pages 253-286).

Response to #014-12

12. The area south of Forest Lakes was only lightly burned and should not be salvage logged.

Only areas south of Forest Lakes that burned at moderate and high severity levels are proposed for treatments. “Lightly burned” areas or areas burned at low severity levels are not proposed for treatment, regardless of where they occur within the analysis area (DEIS pages 7, 15-22).

Response to #014-13

13. Moderately burned areas will recover naturally and should not be salvaged logged.

No supporting reasons were given for this assertion. The fire killed nearly all vegetation in areas burned at moderate severity levels. The purpose and need for the Rodeo-Chediski Fire Salvage Project would not be met by excluding these areas from treatment. The anticipated effects of implementing Alternative 1 (the No Action alternative) represent the analysis of what would occur should moderately burned areas be left to recover naturally.

Response to #014-14

14. Management indicator species analysis is inadequate. The Forest Service failed to provide information for songbird MIS—including pygmy nuthatch and yellow-bellied sapsuckers. The DEIS provides no reference to AZGF study of this imperiled raptor; nor does it even attempt to address population number and trends.

A total of 22 management indicator species (MIS), including the pygmy nuthatch and red-naped sapsucker, were examined for possible impacts from the alternatives being considered in detail (DEIS pages 137-138 and 157-159). Evaluation of MIS that may be present in the analysis area is displayed in Appendix E, (DEIS, pages 329-337). According to the Heritage ranking system (www.natureserve.org), the pygmy nuthatch is secure globally, nationally, and statewide in Arizona.

Yellow-bellied sapsucker (*Sphyrapicus varius*) populations in Arizona are now called the red-naped sapsucker (*S. nuchalis*). The species was split into three separate subspecies. They excavate cavities in live aspen or cottonwood trees that are not proposed for salvage. Their population status global ranking is G5 (secure) and their state ranking for Arizona is S4 (apparently secure). None of the alternatives considered in detail would impact this species.

Discussions of MIS, in particular northern goshawks, occur throughout much of the Wildlife, Fisheries and Aquatic Resources section (DEIS pages 136-159 and Appendix E, pages 329-337). The Arizona Game and Fish Department issued a document, *A Briefing on the Effects of the Rodeo-Chediski Fire on Wildlife and Wildlife Habitats*, (2002), however it does not include information on northern goshawks. The Forest Service is aware of studies conducted over about the last 10 years by Department Specialist Mike Ingraldi on northern goshawks. Information from these studies is used on a yearly basis in Forest Service surveys and was considered in this analysis (see also DEIS pages 360-361).

Response to #014-15

15. The recent Ninth Circuit decision invalidating the northern goshawk standards and guidelines must be addressed in the DEIS, as these S&Gs guide management in the ponderosa pine habitat which will be logged under the proposed action.

No supporting reasons were given for this assertion. However, standards and guidelines in Forest Plans are for the management of healthy green forests. Treatments are being proposed in areas that were burned at moderate and high severity levels (DEIS pages 7, 15-22) and have reverted back to an early successional state (VSS 1). See responses to Comments #014-8b and #011-3.

Response to #014-16

16. The economics analysis is flawed because the DEIS does not consider all expenses (e.g. road building) or the economic benefit of naturally recovering forests.

The cost of road improvements (and maintenance) is included in the figures in Table 60 (DEIS page 216). The economic benefits of allowing forests to recover naturally are described under the direct and indirect effects of implementing Alternative 1 (DEIS page 214). Alternative 1 would not generate any additional jobs directly associated with salvage harvest or indirect restoration mitigation activities. This alternative would not return any revenue to the United States Treasury.

Response to #015-1

1. By logging these burned areas, especially those that have burned intensely, the Forest Service will be contributing to greater erosion and soil compaction. This kind of salvage logging could significantly affect the watershed and as such the domestic water supply for the Phoenix-Mesa area. Logging in recently burned areas increases water run-off and speeds up topsoil erosion.

The potential effects of salvage logging and associated activities to the soils and hydrologic resources found within the analysis area were discussed in detail (DEIS pages 39-70). These allegations are unfounded for conditions existing within the Rodeo-Chediski analysis area and you have failed to provide any specific site locations by text or map references where this would occur.

Long-term site productivity will be improved by the addition of woody debris from activity slash and contour felling, with approximately 30 percent ground cover being created where none exists, which would reduce sediment yield and surface runoff. Pre- and post-fire peak flows for all of the affected watersheds within the analysis area were modeled and results indicate that all action alternatives would reduce discharge amounts over baseline by about 11 percent (DEIS, Table 13, pages 55-59, see also Errata for page 60).

It has been acknowledged that some level of soil compaction may occur during salvage logging operations and is inherent with operating machinery over the various soil types found within the harvest units. Mitigation measures that include use of Best Management Practices are in place to minimize damages to soils. Specific soil mapping units were identified where machinery can only be operated under dry or frozen conditions. It was concluded that the limited impacts of soil compaction were more than offset by the benefits of providing ground cover (DEIS page 61).

A review of the Canyon Creek Watershed (which is the only watershed that would affect the water supply for the Mesa-Phoenix area) will disclose that very few acres are proposed for treatment under any action alternative. Treatments are aimed at reducing runoff and sedimentation (DEIS, Table 13, pages 55-59).

Response to #015-2

2. After a fire like this, it is sometimes difficult to determine which trees will survive and which trees will not. Some burned trees could live for another three to ten years and during that time they provide habitat for wildlife, a seed source for the next generation of trees, and can help stabilize the soil. Snags, the standing dead trees, also provide critical wildlife habitat, especially for animals like cavity nesting birds.

Alternative descriptions clearly described which trees will be harvested as “dead standing trees with merchantable value that are 12 inches or larger diameter at breast height (dbh)” (DEIS pages 15-22). Only dead trees will be harvested. Wildlife habitat needs are considered and provided for through implementation of mitigation measures (DEIS pages 26-27).

3. Salvage logging and the road building that accompanies it can increase fire danger by leaving the smaller more flammable wood (slash) and increasing human access to the forests. Building additional roads in this already heavily roaded area will be detrimental to the forest, to wildlife, and as we mentioned earlier will expose it to greater fire risk. We again urge you to look at closing any existing roads that are unnecessary in order to limit further fire risks.

Construction of 28-40 segments of temporary roads averaging approximately 2,600 feet scattered over almost 277 square miles within the analysis area will hardly “increase human access to the forests” (DEIS, Table 54, page 202). Access and travel management within the analysis area is currently managed through travel restriction Order #01-377. Motorized vehicles are restricted to open roads listed and mapped on the Order. The remaining roads are closed to access (DEIS page 196). Temporary roads are only used during salvage harvest activities and then decommissioned (DEIS page 202).

Both short-term and long-term risks of fire resulting from implementation of action alternatives were described and predicted fuel accumulations, rates of spread and flame lengths were displayed in Tables 27, 28 and 29 (DEIS pages 110-111). These predictions were calculated using fire effects modeling using programs such as Behave, Behave Plus, and others (DEIS pages 92-93).

We do not agree that the increased fire risk resulting from salvage harvest operations and related activity slash will increase substantially. Increased rates of spread and flame lengths posed by action alternatives were considered an “insignificant increase” (DEIS pages 110-111). The long-term risks to public safety posed by selection of Alternative 1 far out weigh the short-term risks posed by salvage logging in the moderate and high burn severity areas selected for treatment. The risk of a catastrophic fire will increase over time under Alternative 1 (DEIS page 107).

We do not agree that the fire risk will be more severe by the construction of temporary roads. The DEIS (Table 54, page 202) summarizes temporary road construction proposed in action alternatives to salvage dead trees from treatment areas, by number of segments, and average length of segments in feet. These 30-40 short segments, depending on the alternative selected, average approximately 2,500-2,700 feet serve as access to harvest units and are mapped and displayed. Once operations have been completed, they are to be decommissioned (closed) and reseeded (DEIS page 202 and Maps 7-10).

Mitigation measures are in place requiring all slash left behind salvage logging operations to be lopped to a two-foot height.(DEIS, Table 7, page 23 and 111). Harvest in these units would not produce many fine fuels and would pose no short-term risk. Un-harvested, severely burned areas would pose a threat in 10 to 20 years when the large dead trees fall and grass and shrubs become established. Because of the dry climate, large down fuels would decay slowly and likely remain on the landscape until it burns again (DEIS pages 111-112).

Current open road densities (Level 2 and above) are near forest plan standards and guidelines, averaging less than 2.0 miles/square mile (DEIS page 195). Only maintenance of the existing road system is proposed to occur during salvage harvest activities commensurate with use. Closure of unneeded roads is outside the scope of this document.

Response to #015-4

4. In addition to other concerns, salvage logging will cost the taxpayers money. In these times of tight budgets shouldn't the limited dollars available be focused on protecting communities from fire in the wildland-urban interface area, and not on further decimating our forests through salvage operations?

You are encouraged to review the comparison of economic effects where actual costs to taxpayers are less than the anticipated revenue from the sale of forest products (DEIS, Table 60, page 216). The real cost to taxpayers will be the long-term rehabilitation needs to reduce existing fuel loads and replant areas denuded by the fire, all projects out of the scope of this analysis.

Response to #015-5

5. We have no objection to tree removal for public safety purposes.....the Forest Service should also focus on educating and informing resident about the dangers of living in fire-prone areas and working to protect communities at risk from the fire dangers.

Education concerning the dangers of living in fire prone areas is an on-going process within the Forest Service. The recently passed Healthy Forest Restoration Act is providing monies to assist communities in reducing risk of wildfires to private property and improvements.

Response to #015-6

6. The Forest Service rejected the proposal for a "Conservation and Local Economy" alternative. Likewise another proposal that "focuses on the natural recovery of the burned area while providing for local economies" was dismissed because the Forest Service asserts that it does not meet the purpose and need.

The purpose and need for the project is identified (DEIS page 7). The "Conservation and Local Economy" alternative does not meet this need. Likewise the proposal that "focuses on the natural recovery of the burned area while providing for local economies" was dismissed for the same reason, it fails to recover some of the value of the timber killed by the fire (DEIS page 29; see also response to Comment #014-3).

Response to #015-7

7. There was also no consideration of an alternative that included action on only a few thousand acres of lands where fuelwood, specialty wood products, and other small sawtimber sales could be implemented. This could meet the proposed purpose and need and be incorporated into a restoration proposal that does not include construction of additional roads.

All action alternatives include treatments on a few thousand acres of lands where fuelwood, specialty wood products, and other small sawtimber sales would be implemented (DEIS, Table 9,

pages 30-31). An action that would not include harvesting commercial sized dead trees would not meet the purpose and need for this project.

Response to #015-8

8. No actual road closures were considered in any of these alternatives, despite the strong scientific basis for doing so to protect against erosion and the strong concerns expressed about erosion relative to this project. Roads contribute to erosion and also produce a greater risk of fire due to access and the increased risk of human caused fires.

See response to #015-3. Closure of unneeded roads is outside the scope of this document.

Response to #015-9

9. In addition to inappropriately eliminating consideration of road closures, we also believe the Forest Service was negligent in not including some kind of research component in at least one of the alternatives.

Including “some kind of research component in at least one of the alternatives” is outside the scope of this document. A number of research plots to study fire effects have been established by agency fire ecologists throughout the analysis area in areas proposed for treatments and areas that are not proposed for treatments. In addition, salvage logging is proposed in less than half of the 95,000 acres burned at moderate and high severity levels (DEIS, Table 12, page 46).

Response to #015-10

10. The DEIS fails to adequately address and inappropriately dismisses relevant scientific research regarding the ecological impacts of post-fire salvage logging.

References to scientific literature conducted in other locations opposing or supportive of salvage logging and the need for fuels reduction projects may be found throughout the DEIS. For instance, the Beschta Report³ alone is mentioned on pages 13, 29, 97, 125 and 147.

The opposing viewpoints to salvage logging expressed in the above referenced scientific literature was examined in detail as to their relevance to conditions found in the Rodeo-Chediski Fire Salvage Project analysis area (see PR #39, *Literature Review for the Rodeo-Chediski Salvage and Rehabilitation Project*, Hibbetts, Jimmy E. (2002)). This document also examined the literature cited in the Beschta Report and other studies cited during scoping and found that these studies were conducted largely in the Pacific northwest or other locations where the soils, climate, vegetation and topography are vastly different than conditions found within the Rodeo-Chediski Fire analysis area and other locations in arid southwestern ponderosa pine forest ecosystems.

³ “The Beschta Report” refers to the following document: *Wildlife and Salvage Logging: Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments on Federal Lands in the West*, Beschta, R.L. et al., 1995. Water Resources Research, 14:1011-1016.

Response to #015-11

11. The DEIS fails to adequately assess the impact of the postfire salvage logging and associated erosion on soils. We question the assertion on page 52 of the DEIS that the No Action alternative would produce the greatest amount of soil erosion.

You are encouraged to review the pre- and post-fire predicted peak flow analysis modeling results that clearly support this conclusion (DEIS, Table 13, pages 55-59).

Response to #015-12

12. The DEIS fails to adequately address the impact of post-fire salvage logging on vegetation. In addition to the other detrimental effects of salvage logging, it can also promote the introduction of noxious weeds through additional soil disturbance via the heavy equipment that is used. The DEIS also fails to consider the more subtle impacts that salvage logging can have on vegetation. Standing trees and the shade they provide affect microclimates... and can impact what plant species develop and thrive over time.

We strongly disagree that the DEIS fails to adequately address the impact of post-fire salvage logging on vegetation. The environmental consequences of implementing any of the alternatives considered in detail are thoroughly discussed (DEIS pages 84-91). Without salvage logging, levels of coarse woody debris would far exceed levels considered to be optimum, and fuel loading would become higher than what it was at the time the fire occurred (DEIS page 86). It is estimated 1.2 million snags (18 inches and larger) will remain within the analysis area after treatments have been completed (DEIS page 88).

Response to #015-13

13. The DEIS fails to adequately assess the impact of the postfire salvage logging on air quality....citing dust from equipment and soot in emissions from diesel engines. We also question the assertion that Alternative 1 will create the greatest emissions over the long-term.

“Several forest roads would have truck traffic anticipated to be in excess of 1,000 total trips **during salvage logging activities**” does not mean 1,000 trips per day as you have erroneously stated (DEIS page 201). You are encouraged to review the Prevention of Significant Deterioration provisions and the statement that they do not apply to mobile sources (such as vehicles) or this project (DEIS page 114).

Alternative 1 will not remove any woody material from the analysis area, whereas action alternatives remove varying amounts. More fuels remaining on a given area will mean more emissions when a wildfire occurs than will be experienced from areas where the coarse woody debris has been reduced (DEIS page 118).

Response to #015-14

14. The DEIS fails to adequately consider the impacts of the alternatives on wildlife and is contrary to findings by the Arizona Game and Fish Department and other research

provided by Bayles, Minshall and Frissell in their 1995 report, *Forest Health and salvage logging: What's the connection?*, an unpublished report. Failure to address livestock grazing makes it impossible to accurately assess the cumulative and long-term impacts of the proposed alternatives.

Possible impacts to wildlife are adequately considered and are not contrary to findings by the Arizona Game and Fish Department (DEIS pages 138-165). The research you have cited is classified as a commentary, describing conditions found in the Interior Columbia Basin that are not representative of conditions found within the Rodeo-Chediski analysis area (see also response to #015-10). Past livestock grazing activities are listed in Appendix A. Grazing activities have been suspended until such time as range managers determine that the range resource has recovered and range management facilities have been restored.

Response to #015-15

15. The DEIS fails to adequately consider the environmental and economic impacts of the transportation system. There is no real consideration of the impact of the construction of temporary roads on wildlife and the introduction of the additional exotic plant species via the construction activities and the costs incurred for construction, or ongoing cost of keeping this enormous transportation system open.

The cost of road improvements (and maintenance) is included in the figures in Table 60 (DEIS page 216). The economic benefits of allowing forests to recover naturally are described under the direct and indirect effects of implementing Alternative 1 (DEIS page 214). Alternative 1 would not generate any additional jobs directly associated with salvage harvest or indirect restoration mitigation activities. This alternative would not return any revenue to the United States Treasury.

Impacts on wildlife from construction of temporary roads was considered and found insignificant (DEIS pages 140-141). Introduction of exotic species was not an issue for this project due to the minor amount of temporary roads to be constructed and BMPs in place to prevent introduction of exotic plant species (DEIS, Table 7, pages 22-26 and Appendix B, pages 287-304).

Response to #015-16

16. The DEIS fails to adequately address the economic impact of the five alternatives. Restoration activities such as eliminating roads, hand thinning of small trees, and helping to address erosion can provide jobs and does not need to be an enormous drain on the taxpayers.

We disagree that the DEIS fails to adequately address the economic impact of the five alternatives considered in detail. Eliminating roads and hand thinning of small trees are not activities that are proposed in this project and are therefore out of the scope of this document. See also response to #015-4.

Response to #015-17

17. The DEIS fails to examine the opportunity for research or adaptive management regarding postfire conditions, citing the McIver-Star Report⁴.

Research by agency fire ecologists is occurring both inside and outside of proposed treatment areas (see also response #015-9). Adaptive management is provided for in the Monitoring Plan (DEIS, Appendix F, pages 339-347).

NOTE: The above comments (#015) were postmarked December 2, 2003 and were received December 4, 2003 and are therefore untimely. Responses have been provided to each comment for educational purposes only.

Response to #016-1

1. The standing burned trees and the burned trees that may fall over the next four to 10 years play an important role in forest health.

We agree that dead trees can play an important role in restoration of areas burned at moderate and high severity levels where most, if not all ground cover has been consumed. However, optimum levels of coarse woody debris is 4.8-7.8 tons/acre whereas average fuel loading predicted 10-20 years into the future is at 48-91 tons per acre (DEIS, Table 24, page 103). Removing commercial sized (>12" dbh) will reduce average fuel loading down to 11-72 tons/acre. Additional treatments to lop activity fuels and reduce the amount of non-commercial-sized materials (<12" dbh) are required to reduce this dangerous fuel load down toward optimum levels. Commercial harvest will only remove 5.3-6.5 trees per acre (DEIS, Table 11, page 34).

Response to #016-2

2. When these trees fall they provide check dams and prevent soil erosion. After felling, they may scatter like jack straws or in a herringbone pattern on hillsides holding soil in place. Logging them off prevents this soil conservation feature.

Randomly falling trees jack straw resulting in less ground contact than logging slash, and less effective ground cover (DEIS page 51). Action alternatives would provide some degree of ground cover from slash and have an effect on erosion rates, reducing erosion from potential (highest possible) to near tolerance levels (DEIS page 60).

Soil quality would be improved by any of the action alternatives, as the ability to accept, hold and release water would be improved by addition of ground cover. Infiltration is encouraged with ground cover as it provides additional surface roughness to slow runoff down and allow greater time for infiltration before leaving the site. The ability to resist erosion and degradation would be enhanced as well as the ability to accept, hold and release nutrients through the addition of organics (DEIS page 60).

⁴ *Environmental Effects of Postfire Logging: Literature Review and Annotated Bibliography*, (January 2000).

Response to #016-3

3. When standing burned trees remain unlogged, they become smorgasbords for wildlife. They also become foraging perches for raptors; as well as avian insectivores such as bluebirds, swallows and fly catchers.

We agree in part. Adequate numbers of snags will be left to meet wildlife needs as proposed in all action alternatives (see DEIS, Snags and Down Logs discussions and Table 42, pages 142-145). Leaving all standing burned trees to fall down naturally will produce an average of 48-91 tons of fuel per acre that will increase with regrowth over time (DEIS, Table 24, page 103). Reducing this dangerous fuels situation down to 4.8-7.8 tons per acre is a long-term goal that can be partially met by removing larger commercial-sized dead trees and following with subsequent treatments.

Response to #016-4

4. Cavity nesting woodpeckers find standing dead trees of great value both as food and nesting sources.

We agree (see response to Comment #016-3). See also discussions of management indicator species (DEIS, pages 158-159 and Appendix E, pages 329-337).

Response to #016-5

5. When burned trees fall or cover the forest floor landscape, they provide a most valuable cover for wildlife, both as nesting sites and as concealment from predators.

We agree. Sufficient burned trees will be left to meet wildlife needs for nesting sites and cover (see DEIS, Snags and Down Logs discussions and Table 42, pages 142-145).

Response to #016-6

6. Fallen and standing dead, burned trees provide shade for sun intolerant species and prevents moisture losses.

We agree, however there can be too much coarse woody debris as well as too little. See response to your comment #016-3.

Response to #016-7

7. Fallen trees act as giant sponges, conserving moisture and humidity. This allows the creation of a moisture- and humidity-nurtured ecosystem, vital to the regrowth and renewal of plants, trees, flowers and wildlife.

We agree. See response to #016-3.

Response to #016-8.

8. Logging off trees removes logs that would be broken down by molds, fungus, insects and algae to become soil for the next generation of trees. By logging off these sources of topsoil for the next forest generation, the Forest Service is harming the potential for growth of the next generation of trees.

Removing commercial sized dead trees will only remove some of the dead trees and reduce fuels down to an average of 11-72 tons per acre. Additional treatments will be required to lower fuel loading down to optimum levels.

Response to #016-9

9. The value of forbs, grasses and trees growing up beside shaded, moist snags, standing burned trees, and fallen trees is critical. Hauling away and logging of such trees destroys the opportunity for a vibrant, healthy, dynamic new generation of trees and meadows.

We agree (see response to your comments #3 and #6). Only a small portion of the trees will be removed through commercial logging. Additional treatments will be required to lower fuel levels down toward optimum levels (see also response to #016-1).

Response to #016-10

10. Open spaces without trees are not harmful. Meadows attract many mammals from voles, mice and deer, to bird species that avoid canopy.

We agree. None of the action alternatives propose treatments in meadows.

Response to #016-11

11. In summary, all of the proposed actions will increase the time for the return of a dynamic forest ecosystem. The No Action (alternative) is vital and essential to the return of a healthy forest ecosystem.

We disagree. No ground cover would be generated from logging slash under the No Action alternative. This alternative would have the lowest overall ground cover density. In the long-term, standing trees would eventually fall and contact the ground to become ground cover and to be incorporated into soil organic matter. However, randomly falling trees jackstraw, resulting in less ground contact than logging slash, and less effective ground cover (DEIS page 51).

Soil productivity, should Alternative 1 be implemented, would not be immediately enhanced through organic materials partially incorporated into soils by equipment operation. Soil organic matter is critical to nutrient retention and the sooner this material is replenished the better. This alternative would have the longest recovery period and greatest long-term negative impact on soil stability and productivity (DEIS pages 51-52).

Note: This commenter (#016) submitted a timely request for the DEIS which was misplaced. The deadline for receipt was therefore extended for 15 days (Sec. 1502.18). Comments were provided in a timely manner.

Identification of Comment Letter Authors

Letter #	Date Letter Rec.	Affiliation/Name of Commenter
001	10/12/03	Individual, Betty Anne Ellsworth
002	10/24/03	Individual, Randall A. Marlatt
003	11/10/03	Natural Resources Conservation Service, James A. Briggs
004	11/13/03	Aztec Land and Cattle Co., Stephen M. Brophy
005	11/19/03	Individuals, Beverly and Dave Wolfe
006	11/24/03	Town of Springerville, AZ, Mayor Kay Dyson
007	11/28/03	Individual, Clarice Ryan
008	11/28/03	People for the USA, Rachael Thomas
009	11/30/03	Individual, Steve Garber
010	12/01/03	USDI, Office of Environmental Policy and Compliance, Patricia Sanderson Port
011	12/01/03	Forest Conservation Council, John Talberth
012	12/01/03	Individual, Rachael Thomas
013	12/01/03	Arizona Game and Fish Department, John Kennedy
014	12/01/03	Center for Biological Diversity, Brian Segee
015	12/04/03	Sierra Club, Grand Canyon Chapter, Sandy Bahr
016	12/15/03	Maricopa Audubon Society, Bob Witzeman M.D.

Appendix E – Errata

This document corrects information published in the Draft Environmental Impact Statement (DEIS) for the Rodeo-Chediski Fire Salvage Project. The following changes to the DEIS are the result of internal reviews:

DEIS Summary, page ix, Fisheries and Aquatics should be centered and in bold print.

DEIS Summary, page xviii, Table 4, table heading should read: “Comparison of effects of alternatives to selected management indicator species.”

DEIS Summary, page xix, Red-naped sapsucker should be followed by: “(formerly yellow-bellied sapsucker)” under species column.

DEIS Chapter 1, page 1, 4th paragraph, last sentence should read: “This analysis is organized by resource section and environmental component.” Delete wording in brackets.

DEIS Chapter 1, page 1, 5th paragraph, add the following sentence: “Chapter 4 also lists Agencies, Organizations, and Persons to Whom Copies of the DEIS are sent.” Delete sentence that follows concerning Chapter 5.

DEIS Chapter 1, page 9, 2nd paragraph, change last sentence to read: “....outlined in both forest plans.”

DEIS Chapter 2, page 22, Table 8, SOILS-M-3, delete “for ground based logging.”

DEIS Chapter 2, page 23, Table 8, insert the following: “Soils-M-10, Fall dead trees across swales and on small 1st order headwater streams without defined bed or banks.” Renumber Soils-M-10 to become “Soils-M-11” and continue sequentially through Soils-M-23 to become “Soils-M-24,” which occurs on page 24.

DEIS Chapter 2, page 27, Table 8, for both WILD-M-7 and WILD-M-8, change “formally” to “formerly.” Change the second sentence for both WILD-M-7 and WILD-M-8 to read: “Snags would be selected from the largest two-inch diameter class on site and left in groups of two to six snags.” Change WILD-M-9 to read: “.....leave five of the largest two-inch diameter class snags per acre

DEIS Chapter 2, page 35, Table 11, define Mexican spotted owl as “(MSO)” and northern goshawks as “(NOGO)”.

DEIS Chapter 3, page 39, last paragraph, insert after first sentence: “TES information for the Tonto National Forest is being completed during 2003 and will not be available until 2004.”

DEIS Chapter 3, page 42, last paragraph, second sentence, delete: “formerly the Soil Conservation Service.”

DEIS Chapter 3, page 46, Table 12, delete “Total” in heading of last column.

DEIS Chapter 3, page 60, 1st paragraph, second sentence should read: “All action alternatives would reduce discharge amounts over baseline by about 11 percent compared to the average post-fire grand total for all watersheds.”

DEIS Chapter 3, page 76, 6th paragraph, 1st sentence, change to read: “The remaining one-third of the analysis area had no collected data, or the data is no longer valid due to vegetation management activities since it was collected.”

DEIS Chapter 3, page 81, 4th paragraph, following next to last sentence, insert at the end of the sentence: “...because predicted fuel accumulations are within the range of desirable levels for coarse woody debris (see Table 27).”

DEIS Chapter 3, page 83, 2nd paragraph, 1st sentence, delete “snags” and insert “trees.”

DEIS Chapter 3, page 89, 2nd paragraph, clarify sentence to state: “Snags 18 inches dbh or larger would be retained, averaging 1.7 snags per harvested acre.”

DEIS Chapter 3, page 96; footnote 8 at the bottom of Table 20 should read: “20 foot wind speed is wind speed 20 feet above the forest canopy.”

DEIS Chapter 3, page 100, 4th paragraph, 3rd sentence, following “slash fuels,” insert: “(activity fuels plus regrowth)” and change 50 to 100 tons per acre to read “48-91 tons per acre (see Table 24).”

DEIS Chapter 3, page 103, insert all of the 2nd paragraph except the last sentence from page 112 to become the 2nd paragraph following Table 23. In the last paragraph, insert at the end of the next to last sentence, “(see Table 25 and text below table).

DEIS Chapter 3, page 105, 1st paragraph, delete 6th sentence.

DEIS Chapter 3, page 107, 5th paragraph, delete next to last sentence.

DEIS Chapter 3, page 112, move the 2nd paragraph except the last sentence to page 103 as noted above. Last paragraph, 1st sentence, change to read: “.....fuel treatments listed in Table 26 and Appendix A would.....”

DEIS Chapter 3, page 116, 2nd sentence should read: “displayed in Table 32” instead of Table 3.

DEIS Chapter 3, page 119, 3rd paragraph, last sentence, change reference to Table 5 to read: “Table 34.”

DEIS Chapter 3, page 124, 3rd paragraph, 1st sentence, insert to read: “36 CFR 219.9.”

DEIS Chapter 3, page 126, last paragraph, delete 1st sentence.

DEIS Chapter 3, page 128, Table 36, insert notation at bottom of table stating: “Note: The difference between 139,313 acres under pre-fire conditions decreasing to 63,798 acres under post-fire conditions is the amount of increased acreage now in the 0-10% canopy closure classification resulting from the fire.”

DEIS Chapter 3, page 133, 2nd paragraph, 3rd sentence, change “findings” to “detections.” Add the following sentence at the end of the paragraph: “Surveys are in progress and will be completed prior to implementation of any action alternative.” In 4th paragraph, 2nd sentence, change “personnel” to “personal.”

DEIS Chapter 3, page 136, 4th paragraph, 1st sentence, delete the words: “...are habitat generalists and....”

DEIS Chapter 3, page 141, 5th paragraph, 1st sentence, correct to read: “...include salvage logging and fuels treatments on approximately 28,000 acres.....” Change the 7th paragraph, 1st sentence to read, “.....27,000 acres (see Table 26)” and delete remainder of sentence.

DEIS Chapter 3, page 142, next to last paragraph, add the following two sentences to the end of the paragraph: “Down logs and coarse woody debris are almost totally lacking in areas that burned at moderate to high severity levels. The only downed material is that which has fallen in the last year.”

DEIS Chapter 3, page 143, 1st paragraph, 2nd full sentence, correct sentence to read: “...by the time one of the action alternatives is implemented.” Change 3rd paragraph, last sentence to read: “Fire-killed trees do not become suitable.....” Delete 1st sentence of the 4th paragraph.

DEIS Chapter 3, page 144, modify 1st sentence of 2nd footnote to read: “**”Average snags per acre across the Analysis Area (from direct effects alone) anticipated after alternative is implemented.” Add the following sentence to the end of the footnote to state: “The Cumulative Effects Average Snags/Acre row includes effects from reasonably foreseeable future activities within the Analysis Area.”

DEIS Chapter 3, page 147, 1st paragraph, 1st sentence, delete and substitute, “The US F&WS issued a biological opinion on September 24, 2003 for this action.”

DEIS Chapter 3, page 148, 3rd paragraph, 2nd sentence, change to read: “Monitoring in 2003 detected 16 owls within PACs in the analysis area but no successful nesting was confirmed.” Delete 3rd sentence.

DEIS Chapter 3, page 149, last paragraph, change 1st sentence to read: “Salvage logging is not proposed within ¼ mile of any surviving nest sites.”

DEIS Chapter 3, page 151, after 1st paragraph, insert the following information and delete the last three paragraphs on this page:

Direct, Indirect and Cumulative Effects to Bald Eagles

“Alternative 1 would not affect bald eagles because eagles do not nest within the project area. Potential direct and indirect impacts from disturbance would only affect foraging behavior. Wintering bald eagles forage mainly along rivers and at lakes for fish and waterfowl. Canyon Creek Fish Hatchery, OW Ranch and Black Canyon Lake are the only areas within the analysis area where bald eagles would potentially concentrate. Alternative 2 would affect the Canyon Creek area of potential concentration. Areas around Canyon Creek and at least a ¼ mile buffer around Black Canyon Lake would not be treated under the Alternatives 3 and 4.”

“Bald eagles are opportunistic feeders. They will also take terrestrial, upland species and will eat carrion when and where available. There is a slight possibility that project activities, including hauling, could be disruptive to this upland foraging behavior. The disturbance would be localized and should not affect the overall distribution of the species. It is not anticipated that the proposed activities will affect the numbers of wintering bald eagles utilizing the project area. There is also the potential that some suitable, unknown daytime roost sites could be removed because bald eagles use large snags as roost sites. However, the retention of large snags should mitigate this potential loss.”

“Cumulative effects to bald eagles are not expected because the chances of disturbance are extremely low and effects on numbers of eagles using the analysis area are not anticipated.”

DEIS Chapter 3, page 152, 2nd paragraph, after 1st sentence, insert the following: “Future firewood cutting may affect snag and log density.” Delete the 1st sentence in the 4th paragraph and correct the last sentence to read, “Additional surveys are scheduled to determine if previously recorded PFAs are abandoned.”

DEIS Chapter 3, page 153, 1st paragraph, correct 5th sentence to read: “Restrictions can be lifted within a treatment area during a breeding season only if two complete surveys are conducted to determine that no breeding goshawks are present.” Add the following clarification to the 3rd paragraph, 1st sentence: “...,because more VSS 3 acres burned.”

DEIS Chapter 3, page 154, 3rd paragraph, 2nd sentence, delete the word “minimum.”

DEIS Chapter 3, page 155, last paragraph, next to last sentence, add to the end of the sentence the following: “.....because firewood permits are capped at 12 inches and the public is prohibited from cutting standing dead trees.”

DEIS Chapter 3, page 156, 5th paragraph, delete last sentence.

DEIS Chapter 3, page 158, 6th paragraph, 1st sentence, replace “snags” with “dead trees.” Last sentence, change it to read: “Salvage logging could reduce the pygmy nuthatch population in some areas because it requires numerous large dead trees.”

DEIS Chapter 3, page 159, 1st paragraph, correct 4th sentence to read: “increased stand densities,…”

DEIS Chapter 3, page 160, Table 44, change to read: “Impact of all action alternatives on residency status, abundance and…….”

DEIS Chapter 3, page 161, Table 44, change “Wouldiamson’s” to “Williamson’s.”

DEIS Chapter 3, page 162, insert the following sentence immediately following Table 44: “Action alternatives should not produce any measurable effects to any migratory bird population.” Capitalize the word “the” at the beginning of the 2nd sentence, 2nd paragraph.

DEIS Chapter 3, page 168, 3rd paragraph, insert following the 2nd sentence: “A 100 percent survey was conducted of the area of potential effect and a determination made that “no historic properties affected” was recommended February 10, 2004 by the Forest Archaeologist, Dr. Charlotte Hunter, and approved by Acting Forest Supervisor W. Carlene Willis, in accordance with the Programmatic Agreement approved December 24, 2003 Consultation has been completed with the White Mountain Apache, San Carlos Apache, Tonto Apache, Yavapai Apache, Yavapai Prescott and Hopi Indian Tribes, Pueblo of Zuni, Navajo Nation, and Fort McDowell Indian Community that may attach traditional cultural and religious importance to historic properties within the project area. An ethnographic study has been completed in consultation with these tribes.”

DEIS Chapter 3, page 174, 6th paragraph, correct 1st sentence to read: “36 CFR 219.21 (f) states, ….”

DEIS Chapter 3, page 190, 4th paragraph, 2nd sentence, change sentence to read: “Noise, additional vehicle traffic and lack of forage may make hunting ….”

DEIS Chapter 3, page 191, next to last paragraph, 2nd sentence, delete the word “return” and substitute the word “sprout.”

DEIS Chapter 3, page 195, 4th paragraph, 2nd sentence, change to read: “The analysis area contains roads…….”

DEIS Chapter 3, page 197, 4th paragraph, 1st sentence, change to read: “Only normal maintenance activities would occur and no additional maintenance would be performed….”

DEIS Chapter 3, page 198, 3rd paragraph, change sentence to read: “Cumulative effects to the transportation system are expected to occur by implementing Alternative 1 due accelerated damage from erosion and lack of additional maintenance needed above normal levels.” Delete last sentence in 7th paragraph.

DEIS Chapter 3, page 202, next to last paragraph, last sentence, change to read: “Alternative 5 proposes two miles less (38 acres) followed by

DEIS Chapter 3, page 203, delete 4th paragraph since this agreement has been completed and terminated.

DEIS Chapter 3, page 206, last paragraph, 3rd sentence, delete redundant “also took” phrase.

DEIS, Appendix A, page 251, delete last paragraph (redundant of last paragraph on page 252).

DEIS, Appendix A, page 252, first bulleted statement under Rationale Used, add 2nd sentence stating: “Effects of past activities were summarized by their respective 6th code watersheds instead of being analyzed separately.” In the 2nd bulleted statement, change to read “.....and the effects summarized by resource area, broken down

DEIS, Appendix A, page 277, 2nd paragraph, change December 23, 2003 to “December 23, 2002.”

DEIS, Appendix C, page 305, 2nd paragraph, 2nd sentence, change reference to: “in Vol. I, Part III, 86-89.” In the 4th paragraph, change 4th bulleted statement, 2nd sentence to: “Snags will be recruited from the largest 2-inch size class trees within the area.”

DEIS, Appendix D, page 312. A proposed rule to list the mountain plover as proposed threatened/sensitive (PT/SEN) was withdrawn in September 2003. Delete from Appendix D.

DEIS, Appendix F, Monitoring Plan, page 340, for Resource Area 1, 4, change to read: “Run HQI and FVS models.....” Delete reference to “Tonto NF Annual Monitoring Reports.”

DEIS, Appendix F, Monitoring Plan, page 341, for Resource Area 3, change to read: “Run HQI and FVS models.....” Delete reference to “Tonto NF Annual Monitoring Reports.” For Resource Area 5, change Timing and Frequency requirements to read: “Per R-3 Protocol Standards” and under Funding Source, delete the words: “District wildlife funds and.”

DEIS, Appendix F, Monitoring Plan, page 342, for Resource Area 6, delete the words: “District wildlife funds and.”

**Appendix F – Comment Letters Received in Response to
DEIS**

11 October 2003

DEIS Com Ltr # 001

Rec. 10/12/03

Jett

Dear Ms Zieroth:

I am wishing to comment concerning the DEIS for the Rodeo-Chediski Fire Salvage Project:

Isn't this more than a year late? It is my understanding that last year - (immediately after the fire) was the time to harvest the trees if marketable lumber was going to be possible.

Also, how could the Environmental Protection Agency have published a NOA for the DEIS in the Federal Register on a date that has yet to happen?

Sincerely,

Betty Anne Ellsworth

PO Box 11

Show Low, AZ 85902-0011

DEIS Com. LTR #002
Rec. OCT 24 2003
Jlett

Elaine,

Just a quick comment on the DEIS for the rodeo-Chediski Fire Savage Project. It is obvious to me that this statement was produced with a goal of salvaging trees. Scientific evidence for its conclusions are thin, and the provided tables appear to be speculation. Bottom line is the Forest Service, as usual, is more interested in economic benefits of this project than environmental concerns. Impact on Heritage Resources is a perfect example of what I'm talking about. After reading this portion of the DEIS, I was rolling on the floor with laughter. Who writes this stuff?

My concerns are mainly with erosion caused by logging. The DEIS states roads will be seeded after completion of the salvage operation, but I think you and I both know that logging equipment does not stay on roads, it must go everywhere trees are being cut to remove them. Will the entire salvage area other than roads be protected from damage and re-seeded? Its also not clear why the DEIS claims logging will lessen erosion.

My daughter is majoring in Forestry at NAU, and I am proud of her career choice, but I warned her that her interest in protecting the environment may be a disappointment if she ends up working for the Forest Service. She assured me that the new generation of Forestry students have a greater appreciation for environmental concerns than many of those presently in charge. I hope she is right! I don't mean any of these comments to be taken personally, but they come from an impression that I have gotten after years and years of contact with the Forest Service. To change this impression, I would like to suggest changes be made that would help environmentally concerned citizens like myself feel they have more of an ally in the Forest Service.

Thank you for allowing me to comment. Your consideration is appreciated.

Randy a. Marlatt

Randy Marlatt
504 Havasupai Rd.
Flagstaff, AZ 86001
928-779-5836

NOV 10 2003

United States Department of Agriculture



Natural Resources Conservation Service
3003 N. Central Avenue, Suite 800
Phoenix, Arizona 85012-2946
(602) 280-8801
FAX (602) 280-8809

NOV 7 2003
Elaine Zieroth

PO Box 640
Springerville, Arizona 85938-0640

Dear Ms. Zieroth:

This response is in regard to your letter dated October 6, 2003, regarding the draft EIS for the Rodeo-Chediski Fire Salvage Project in Arizona.

The Natural Resources Conservation Service (NRCS) has general responsibility, nationwide, for implementing the Farmland Protection Policy Act (FPPA) and to review projects that may affect prime farmland and/or wetlands associated with agriculture. After reviewing the information provided, the following is noted:

- 1- The proposed new projects if implemented as planned, are exempt from the requirements of the FPPA, as revised in 1994, that excludes land which is already in or is committed to urban development, currently used as water storage, or land that is not prime or unique farmland.
- 2- We do not see any immediate concerns or impacts that would directly affect wetland areas associated with agriculture.

We recommend that any future development projects receive a prime farmland determination prior to any construction activities. Should you have questions, please feel free contact Jeff Schmidt, Community Assistance Coordinator at 602.280.8818. Thank you again for the chance to review the proposed project.

Sincerely,

A handwritten signature in cursive script that reads "Jeffrey Schmidt for".

JAMES A. BRIGGS
Assistant State Conservationist (T)

cc:

Diane Gelburd, Dir., ESD, Washington, DC (NRCS EDN 2793)
Brian Sorenson, DC, Springerville, AZ
Jeff Schmidt, Community Assistance Coordinator, NRCS, Phoenix, Arizona

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

NOV 13 2003

**AZTEC LAND AND CATTLE COMPANY, LIMITED**

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STEPHEN M. BROPHY
PRESIDENT

November 13, 2003

Ms. Elaine J. Zieroth
Forest Supervisor
Apache - Sitgreaves National Forests
P.O. Box 640
Springerville, Arizona 85938

Comments - DEIS for the
Rodeo - Chediski Fire Salvage
Project
NOA Published October 17, 2003

Dear Ms. Zieroth:

This is written to provide the comments of Aztec Land and Cattle Company, Limited (hereafter "Aztec") to your office regarding the draft environmental impact statement ("DEIS") for the Rodeo-Chediski Fire Salvage Project (the "Salvage Project").

Our comments are as follows:

1. Aztec owns 40 A of private land in the SWSW, Section 35, T11N-R18E just east of the Deer Springs lookout on the north side of FR 161. Aztec also owns over 200,000 acres of private land off the Forest north of the Rodeo-Chediski burn area. The Rodeo - Chediski fire burned and killed almost every tree on our 40 acres of land. It did so because, as the fire came from the south, it passed through an extensive and dense stand of underage pine (8" and less in diameter) on adjoining National Forest land which generated high heat intensity. When the fire got to our land, which had been thinned and therefore by itself stood some chance of not being destroyed, the fire was burning hot enough to incinerate everything on our land in its path, and it did. Following the fire, our land downstream of the fire's burn area off the Forest has experienced erosion due to higher runoff from the burned N.F. land.
2. That is history. The question now is the future. Left uncut, the burned trees in the Salvage Project area, and outside of it, will pose a major fire hazard to our land and to National Forest land for years to come. That is not good for wildlife (endangered or otherwise); not good for the human environment; not good for soil regeneration; not good for resource protection and forb and forage regrowth; and, as long as the risk of a new fire remains elevated, makes any regeneration efforts that we would consider for our land risky to the point of infeasibility.

Ms. Elaine J. Zieroth
Forest Supervisor
Apache – Sitgreaves National Forests

Comments – DEIS for the
Rodeo Chedeski Fire Salvage
Project – Page 2
November 13, 2003

Our recommendations therefore are as follows:

Aztec urges that the F.S. adopt Alternative 4 or, in the alternative, expand Alternative 4 to a larger area, especially at the head of Cottonwood Canyon in T11N-R18E, to diminish future fire danger and reduce potential soil damage on N.F. land and fire related high flow erosion damage to areas downstream of N.F. land to the north, where tens of thousands of acres of Aztec's private land are being adversely affected.

Very truly yours,



Stephen M. Brophy

SMB:gm

Nov. 15/03

Forest Supervisor
Elaine J. Zieroth
Springerville, Az. 85938

rec.
11/19/03
JEL

Dear Madam,

Regarding the Fire Salvage Project, we are strongly in favor of Alternative 2. I can't see why helicopters can't be used to yard trees on steep slopes. They were used to fight the fires, along with other aircraft. I suggest we not invite the helicopter from Channel 5 Television to play a part, since they did not help the fire last year.

Yours truly
Dewley Wolfe
Dave Wolfe.

HC-31 Box 967

HAPPY JACK, AZ 86024

DEIS Com. LTR #007
rec. 11/28/03



"Clarice Ryan"
<clardon@aboutmontana.net>

11/28/2003 02:19 PM

To: <ezieroth@fs.fed.us>, <ezieroth@fs.fed.us>, <jhibbetts@fs.fed.us>
cc: "Wanda Benton" <wlbenton@salemnet.com>
Subject: DRAFT EIS - Rodeo Chediski Fire Salvage Project S: MONDAY
12/01

Let's see now, am I to assume from this that comments are due on Monday, Dec 1 . . . three days away, one of which is a Sunday? I am skeptical of comments of any sort making any difference. Also out of all the comment sessions I have experienced either verbally or written, I have yet to receive any kind of an answer to my EIS comments. In fact why is it assumed that our "comments" will be in the form of "questions"? When I make a comment it is generally very forcefully presented in the form of a "statement" expressing my beliefs and my concerns. Even with that it would be nice to receive some sort of a response, but it never happens, leaving the uncomfortable feeling that it really doesn't matter. . . that responses by the public are generally ignored. Decisions and plan of action have probably already been made and the comment period basically a legal formality. Please, somebody, prove me wrong. Yes, I do have a couple of questions. Could you please send me a COMPLETE list of committee members who arrived at this highly restrictive list of alternatives, and would it be possible to mail me a copy of the Draft EIS? Clarice Ryan, 253 Pine Needle Lane, Bigfork, Montana 59911

Sent: Friday, November 28, 2003 8:34 AM

Subject: [PFUSA] DRAFT EIS - Rodeo Chediski Fire Salvage Project S: MONDAY 12/01

From: Rachel Thomas

Sent: Friday, November 28, 2003 6:36 AM

Subject: DRAFT EIS - Rodeo Chediski Fire Salvage Project S: MONDAY 12/01

*DEIS Com. LTR # 008
rec. 11/28/03*

S: MONDAY 12/01/03 (comments are so important and do make a difference. using comments is also a way to get questions answered and the forest service on record on any issue you have a question about. In the next email, I will provide you information on response from the Forest Service on comments.)

Address: Rodeo-Chediski Fire Salvage Project
Apache-Sitgraves National Forest
P.O. Box 640
Springerville, AZ 85938

Responsible Officials **Elaine J. Zieroth, Forest Supv, Apache-Sitgraves National Forest**

ezieroth@fs.fed.us

Karl P. Siderits, Forest Supv, Tonto National Forest
ksiderits@fs.fed.us

For Information contact: **Jimmy E. Hibbetts, ID Team Leaders, PH**

928-333-4301, Non Forest Service Contractors

jhibbetts@fs.fed.us

Proposed Alternatives in the subject EIS:

Alternative 1 - no action alternative No new activities would be initiated at this time.

Alternative 2 - Proposed Action - Harvest on approximately 45,109 acres using ground based and helicopter yarding. A forest plan amendment would be required.

Alternative 3 - Harvest on approximately 38,533 acres utilizing only ground based yarding systems on slopes less than 40 percent including acres that have been classified as having severe soil erosion potential.

Alternative 4 - Agency Preferred Alternative - Harvest on approximately 41,059 acres utilizing only ground based yarding systems on slopes less than 40 percent, including areas that have been classified as having severe soil erosion potential.

Alternative 5 - Harvest on approximately 42,850 acres utilizing only ground-based yarding systems on slopes less than 40 percent and in areas classified as having severe soil erosion potential.

My first question, why isn't the areas classified as having severe soil erosion potential included in Alternative 2, the Proposed Action?

Social Economic Resources. They have cost of activities higher than the revenue from sale of Forest Products in every alternative except 1 which is \$0.

For the species list, they have a determination of effect by alternative. However, they do not include what the effect of the fire was on each species which I think should be a important part of the information.

The document is 350 pages and there are so many of people's questions unanswered. Even if you have not seen the document and have a question - please submit them. **I HOPE EVERYONE WILL DO COMMENTS. EMAIL THEM TO THE 3 FOREST SERVICE PEOPLE THAT I PROVIDED EMAIL ADDRESSES FOR ABOVE. AT LEAST RECOMMEND A ALTERNATIVE FROM THE 5 ABOVE AND ASK THE QUESTIONS.** You know the greens will all be recommending alternative 1. Also, do not forget to cc your comments to your elected officials.

===== People for the USA (PFUSA) =====

Message ARCHIVES are at:

<http://www.topica.com/lists/PFUSA/read>

DEIS Com. KTR #009

received 11/30/03



"Gaber"
<sndg@comcast.net>
11/30/2003 11:48 AM

To: <comments-southwestern-apache-sitgreaves@fs.fed.us>
cc:
Subject: comments on salvage logging

I write to state my full support for salvage logging the Rodeo-Chediski fire and any other fires where it is environmentally practical.

I think it's a travesty when legal barriers (lawsuits) are presented to prevent an agency from salvage-logging in areas where it makes perfect sense to do so. The pendulum has swung too far toward deferring to the "environmental protection" point of view. I'm all in favor of responsible environmental protectionism, and lean that way myself when there is a close call. But I do believe that with the extensive studies, plans and restrictions required for salvage logging, it will be performed with acceptable environmental impact, with few exceptions.

I had a chance to visit the Biscuit fire in Oregon where there are many thousands or tens of thousands of acres that could be logged. Yet, I read where there is strong opposition to doing so at this location and most others, as well. As long as we, as a society, demand the use of forest resources to the extent that we do, I think it terribly irresponsible to put up frivolous barriers to acceptable proposals that favor getting as much value as possible from burned trees that will soon rot.

There are the economic benefits, as well: revenue to state and federal agencies from the sale to help pay for the cost of fighting the fire, paychecks for the contractors and their suppliers, taxes and so on. Even if the revenue from a sale is consumed to minimize the environmental impact (expensive helicopter logging, erosion prevention, road abandonment) or used for reforestation, that money, too, goes right back into the local economy.

So, I think the pendulum needs to swing back toward the middle on this issue, and I hope the plan for salvage logging will prevail on the Rodeo-Chediski and other units where it makes sense.

Steve Gaber
925 17th St.
Bellingham, WA 98225
360-738-9166



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1111 Jackson Street, Suite 520

Oakland, CA 94607

DEIS Com. LTR
010

12/01/03

November 26, 2003

ER: 03/845

Rodeo-Chediski Fire Salvage Team
Apache-Sitgreaves National Forests
P.O. Box 640
Springerville, AZ 85938

Subject: Review of Draft Environmental Impact Statement for the Rodeo-Chediski Fire Salvage Project, Apache-Sitgreaves and Tonto National Forests, Gila and Navajo Counties, Arizona.

To Whom it May Concern,

The U.S. Department of the Interior has received and reviewed the subject document and has no comments to offer.

Thank you for your opportunity to review this project.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc: Director, OEPC, D.C.
FWS, Albuquerque

DEIS Com. LTR #011
received 12/01/03



John Talberth
<jtalberth@cybermesa.com>

12/01/2003 11:56 AM

To: comments-southwestern-apache-sitgreaves@fs.fed.us
cc:
Subject: Rodeo-Chediski EA and DEIS Comments

December 1st, 2003

Sent by electronic mail

Elaine J. Zieroth, Forest Supervisor
Apache-Sitgreaves National Forest
P.O. Box 640
Springerville, Arizona 85938

RE: DEIS and EA Comments

Dear Ms. Zieroth:

Forest Conservation Council has the attached comments to offer on the Draft Environmental Impact Statement (DEIS) for the Rodeo-Chediski Fire Salvage Project and the Draft Environmental Assessment (EA) for Treatment of Dead Trees in the Wildland/Urban Interface. The comments are combined in one document, which is attached in .pdf and word format.

If you have any problems opening these documents, please call and I can arrange to send another version.

Sincerely,

/s/

John Talberth, Director of Conservation
Forest Conservation Council
P.O. Box 22488
Santa Fe, New Mexico 87502-2488



(505) 986-1163 RCeadeiscmts.doc Rodeo-Chediski EA and DEIS Comments

*Both of the attachments are identical
in content.*

JEA



P.O. Box 22488
Santa Fe, New Mexico 87502-2488
(505) 986-1163

December 1st, 2003

Sent by electronic mail

Elaine J. Zieroth, Forest Supervisor
Apache-Sitgreaves National Forest
P.O. Box 640
Springerville, Arizona 85938

RE:

- Comments on the Draft Environmental Impact Statement (DEIS) for the Rodeo-Chediski Fire Salvage Project.
- Comments on the Draft Environmental Assessment (EA) for Treatment of Dead Trees in the Wildland/Urban Interface.

Dear Ms. Zieroth:

Forest Conservation Council has the following comments to offer on the Draft Environmental Impact Statement (DEIS) for the Rodeo-Chediski Fire Salvage Project and the Draft Environmental Assessment (EA) for Treatment of Dead Trees in the Wildland/Urban Interface.

(1) Irreversible damage to soil, slope, watershed condition and long-term site productivity.

The Forest Service is required to assure that timber will be harvested from National Forest System lands only where "soil, slope, and other watershed conditions will not be irreversibly damaged." 16 U.S.C. §1604(g)(3)(E)(i). In addition, the Forest Service must "avoid permanent impairment of site productivity and ensure conservation of soil and water resources." 36 C.F.R. §219.27(b)(5). As planned, salvage activities in the Wildland Urban Interface and throughout the Rodeo-Chediski Fire area will irreversibly damage soil and watershed conditions and permanently impair long term site productivity by exacerbating topsoil erosion, compacting soils, and removing large woody debris vital for maintenance of soil productivity and ecosystem recovery.

These are reasonably foreseeable outcomes of a timber salvage operation of the size and magnitude of what the Forest Service has planned here.¹ The literature contains extensive documentation of the detrimental impacts associated with the use of heavy machinery, skid trails, road construction, and removal of large woody debris on soil structure and soil organisms essential for maintaining long term site productivity. As a result it is reasonable to expect that, “significant harm will occur to the soil resource of the project area as soon as timber sale operators being to operate machinery in the area” (Declaration of George Badura ¶ 3).²

(2) Failure to disclose and discuss responsible opposing scientific viewpoints.

Neither the DEIS nor the EA recognize the potential for damage to soil, slope, watershed conditions, or long term site productivity despite the presence of peer-reviewed studies that have documented these impacts. Instead, both the EA and DEIS predict nothing but positive impacts on soil and water resources as a result of salvage logging. For example, the EA maintains that “[t]he proposed treatments would add ground cover to the soil. Adding ground cover would have a positive effect on reducing erosion in all soil types” (EA at 11). Likewise, the DEIS maintains that “[s]oil quality would be improved by any of the action alternatives, as the ability to accept, hold, and release water would be improved by the addition of ground cover”(DEIS at 60).

In these statements, the Forest Service has failed to consider the overall net effect on soil and water resources. While logging slash may partially reduce topsoil loss, other project activities such as skid trails and temporary roads will certainly increase that loss so that the net effect may be significantly negative. In addition, the DEIS and EA have failed to consider long term effects on soil organisms such as mycorrhizal fungi communities which are essential for maintaining long term site productivity, and have failed to consider the negative impacts on productivity resulting from compaction of soils, especially along skid trails and temporary roads. The Forest Service has also neglected to consider the beneficial effects of natural regeneration of vegetation, a process that has yet to begin in earnest but one which can clearly restore soil and watershed conditions far more effectively than logging. Researchers who have looked at the overall impacts of salvage logging have concluded that “[a]dding timber harvest and road construction to an already fire-damaged watershed can only have negative and potentially severe effects.”³

A recent Ninth Circuit opinion chastised the Forest Service for failing to “disclose and discuss responsible opposing scientific viewpoints” in the 1996 FEIS issued for

¹ See, generally McIver, James and Lynn Starr (2000). Environmental Impacts of Postfire Logging: Literature Review and Annotated Bibliography. USDA Forest Service, PNW Research Station. GTR PNW-GTR-486.

² The Declaration of George Badura was submitted to the Forest Service in the context of *Forest Conservation Council vs. United States Forest Service*, Ninth Circuit Court of Appeals, Emergency Motion Pursuant to Circuit Rule 27-3(b). The declaration in its entirety is incorporated here by reference.

³ Minshall, et al. (1994). September 19th, 1994 letter to President Bill Clinton concerning post-fire salvaging on national forest lands.

amendments to forest plans accommodating northern goshawk and Mexican spotted owl standards and guidelines.⁴ Identical flaws are present in both the DEIS and EA.

(3) Activities that may adversely affect northern goshawks must be suspended pending republication of the FEIS for Amendments to Forest Plans.

In *Center for Biological Diversity vs. United States Forest Service* (See footnote 4), the Ninth Circuit Court of Appeals invalidated the FEIS underlying the Forest Service's northern goshawk management strategy. The two project decisions at issue here are tiered to that FEIS. Both projects will adversely affect northern goshawk habitat and the abundance and diversity of prey species.

According to the DEIS, the project will decrease the abundance of large woody material and snags and may diminish the abundance of prey species (DEIS at 152-153). Further, "noise disturbance could have short term impacts on nesting goshawks" (Id.). The fragmentation of remaining green patches may also increase the competitive advantages enjoyed by more open forest species.

Salvage operations in northern goshawk habitat represent an irretrievable commitment of resources that will clearly have an adverse environmental impact and limit the choice of reasonable alternatives to the existing northern goshawk management strategy. NEPA regulations prohibit the Forest Service from making irretrievable commitments of resources that meet these two criteria pending publication of a revised FEIS for the northern goshawk strategy. 40 C.F.R. §1506.1. Thus, all activities proposed in northern goshawk habitat or which otherwise harm northern goshawks should be suspended until a new FEIS and northern goshawk management plan are adopted.

(4) Neither the DEIS nor the EA disclose the environmental or public safety effects of increased fire risk.

Both the WUI treatments and the larger salvage project will substantially increase fire risk. In the Administrative Record (AR) to the WUI project, the Forest Service states that "[t]he slash material and logging residue would pose a fire risk in the short term before treatment," and that "[f]uels would need to be treated immediately after harvest" (AR at 171). The EA reiterates this concern, "[i]n the short term, some increased fuel hazard could occur if trees are felled and left untreated" (EA at 13). The concern is echoed in the DEIS, "[i]n the short term (two years), harvesting of dead trees would increase fuel loads above current post-fire levels" (DEIS at xiii). The increase in fire risk is likely to be substantial. According to Peter Morrison, Forest Ecologist:

"If this project is implemented, there will be an immediate increase in the risk of future forest fire in the project area, especially in light of the Forest Service's plan to allow timber sale operators to leave all untreated slash in the project area... It is a well

⁴ *Center for Biological Diversity v. United States Forest Service*, No. 03-16491, United States Court of

known fact throughout the forest industry that untreated logging slash dramatically increases wildfire risk and severity” (Declaration of Peter Morrison ¶¶ 13-15,22-23).⁵

The increase in fire risk will be made even more severe by the construction of 19.9 miles of “temporary” road, which will significantly increase access and the potential for ignition of the highly flammable slash left behind by logging operations.

The EA and DEIS justify the increase in fire risk by assuming that accumulated slash will be treated by post-harvest activities including lopping, crushing, and chipping the slash material, and that temporary roads will be closed and obliterated. However, to date, there have been no appropriations for these activities. As the EA plainly states, these activities are “dependent upon the federal government to fund” (EA at 14). The Forest Service’s past record of implementing these post harvest activities should be used as a guide for making realistic projections of how long the increased fire risk will persist and how long increased road access will remain above targeted levels.

Given the significant increase in fire risk associated with implementation of the two projects, the Forest Service has a duty to examine the potential environmental and public health impacts associated with another, potentially severe fire in the Rodeo-Chediski Fire area. Fire effects modeling can be used to predict the potential severity and pattern of reburn following the accumulation of flammable slash and its associated consequences on soils, watershed conditions, wildlife habitat, and public safety.⁶ Although the EA and DEIS recognize that increased fire risk will occur, neither consider the impacts associated with this increased risk.

Thank you for the opportunity to comment on these projects. I look forward to receiving the final EA and FEIS and trust that all of the issues and concerns raised here will be addressed in those documents.

Sincerely,



John Talberth, Director of Conservation
Forest Conservation Council

⁵ The Declaration of Peter Morrison was submitted to the Forest Service in the context of *Forest Conservation Council vs. United States Forest Service*, Ninth Circuit Court of Appeals, Emergency Motion Pursuant to Circuit Rule 27-3(b). The declaration in its entirety is incorporated here by reference.

⁶ As the Forest Service has done elsewhere, models such as the BEHAVE model should be used to determine the likely trajectory, severity, and impacts of a wildfire originating in the accumulated slash left behind by the proposed treatments. See, e.g., USDA, *Casey National Forest* (2002). For information about the model, see the

Received 12/01/03



"Rachel Thomas"
<badger@theriver.com

>
12/01/2003 02:44 PM

To: "USFS Jim Hibbetts" <jhibbetts@fs.fed.us>
cc: "US Forest & Forest Health Subcommittee"
<Forest.Health@mail.house.gov>, "USDA Mark Rey"
<Mark.Rey@usda.gov>, "USDA Secretary Anne Veneman"
<Ann.Veneman@usda.gov>, "USFS Dale Bosworth"
<Dale.Bosworth@usda.gov>, "USFS Karl Siderits"
<ksiderits@fs.fed.us>, "USFS Elaine J. Zieroth" <ezieroth@fs.fed.us>
Subject: comments for DRAFT EIS for the Rodeo Chediski Fire Salvage Project

Rodeo-Chediski Fire Salvage Project
Apache-Sitgraves National Forest
P.O. Box 640
Springerville, AZ 85938

Reference DRAFT Environmental Impact Statement for the Rodeo Chediski Fire Salvage Project

Please accept the following as my comments on the Draft EIS.

1. Chapter 4, consultation and coordination. Why isn't any of the county or local government officials members of the ID Team? County and local officials should be totally involved in this process and at the table in all discussions.
2. You do provide a lot of information for all the different species except the following. Request that the following questions be answered in the final EIS.
 - a. Acres of critical habitat for each species destroyed by the Rodeo Chediski Fire
 - b. Acres of habitat (other than critical) destroyed by the Rodeo Chediski Fire.
 - c. Know number of each species burned to death.
 - d. Estimated number of each species burned to death.
 - e. Number of each species that had to be killed to end suffering from being burned in the fire.
3. The impact on the property value of all private properties in and near the action area for each alternative should be provided
4. The EIS should include the use of the proven system of using livestock for restoration of areas destroyed by fire. Documentation is provided as Enclosure 1 and 2.
5. Request the alternative be selected that most supports the local communities. The alternative that generates employment for local residents and that generates income for circulating in the affected counties. This will be the alternative to best protect our forest,

our species and our watershed.

Sincerely

Rachel Thomas
2136 N. Truman Road
Huachuca City, AZ 85616

CC:

Senator Jon Kyl
Congressman Rick Renzi
US House Forest and Forest Health Sub Committee
US House of Representative Western Caucus
<?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" /> US Senator Energy and
Natural Resources Committee
USDA Secretary Ann Veneman
Mark Rey, USDA Under Secretary for Natural Resources and Environment
Dale Bosworth, Chief of the Forest Service

Enclosure 1, **The Holistic Remediation Process**

The Holistic Remediation Process

The ability of nature to heal itself, by using the inter-action of many of the natural processes including influences of large grazers and primitive man, has been on-going since the very earliest dawn of time. Unfortunately, most of this knowledge has been lost by modern science trying to develop mechanical applications to replace natural systems, saying that natural systems are no longer valid.

In 1986, Terence O. Wheeler an Ecologist, evaluating the inability of modern applied science to heal nature with the most sophisticated applied technologies of the day, began to redirect his focus to the natural process

The primary area where Wheeler began to develop a newly articulated concept of using planned application of the tools of nature in concert with the tools of man, was on mine tailings, Wheeler had a long history of doing reclamation and remedial work, using accepted methodologies with varying degrees of success on both disturbed industrial sites and native range sites. He had long been a part of the frustrating inability of scientist to stabilize copper mine tailings ,long thought to be toxic waste piles.

It was not until Wheeler began to look at mine tailings from an ecological standpoint that he was able to realize that we are not dealing with a toxic problem, but instead an ecological opportunity.. Armed with that information he began to develop a new management concept using livestock as a primary component of soil building and nutrient cycling. This new knowledge was first formally put to use in a major pilot project with Cyprus Miami Mining co. in April of 1989. It has since evolved into the management philosophy of choice by the company.

Since that time, Mr. Wheeler has used this concept successfully to remediate forest and range fires on BLM lands on a large ranch he managed in western Colorado and on mine sites for a number of mining companies, in AZ, NM and NV. Presently, revegetation and stabilization technology and implementation has changed little since the time he proposed the first use of cattle to stimulate and accelerate the natural process. In actuality, it's one natural process aiding another natural process.

He employs the same principals; that of using domestic herbivores and tools, for managing soil stability as the basis for the management of watersheds for sustainability, diversity and clean water delivery. In reality the animals perform a number of very important functions, cost effectively, that methods cannot do.

Fire scorched soils have recently been described as being hydrophobic, which is incorrect because to be afraid of water the soils will have to think, which they don't do. None the less, when soils are exposed to high heat, the silica on and near the surface turns to glass and creates a layer impervious to water. The impact of the hooves of the herbivores breaks that capped surface allowing for water penetration. Animal impact also provides other important functions including: seedbed preparation by mulching the soil surface; planting the seed and making divots or little dams in the surface to hold rainwater thus giving it time to soak in before running off.

If hay for cattle feed or mulching is used, the animals incorporate it into the surface to become a soil binder and also a nutrient base for the microbial communities deposited in fecal material. The dung and urine are essential components of functioning life and mineral cycles. The rumen microbes are basically the same as the soil microbes, lost in the fire, that decay plant material and are essential to growth. The manure also provides vitamins, minerals, and amino acids essential for plant and animal growth as well as provide habitat for a number of significant small creatures that are essential to healthy environments.

Used correctly, cattle can be used to stabilize fragile eroded fire damaged soils on critical watershed. To do this effectively will take knowledge of the ecological process, good planning with built in flexibility and effective implementation. Experience in this type of mitigation, although not essential, will expedite the project, increase the success ratio and should reduce costs.

Dams and erosion control structures built to curtail runoff following these severe burns can also be stabilized by animal impact to further insure their longevity.

Others have used Wheeler's concept to varying degrees of success. Between 1986 and 1989 Wheeler shared his idea with several of his associates and clients including Jessie Mitchell, his associate in several successful endeavors; Tommie Martin; Allen Savory; Steve Rich and Eric Schwennessen. In 1988 while working with Nevada rancher-client, Tony Tipton, Wheeler and Tipton evaluated the impact of the growing overburden dump resulting from a active gold mine. While viewing the problem, Wheeler pointed out what might actually be an opportunity using his newly developing reclamation concept.

Tipton jumped on the idea and successfully reclaimed the massive overburden pile. Since that beginning, Tony Tipton with his wife Gerry, have gone on to successfully restore functioning watersheds on both mined lands and deteriorated native landscapes. Wheeler and Tipton have both been successful in creating active water cycles on deteriorated watersheds resulting in the delivery of free water using herbivores as a tool.

The other associates mentioned have gone on to apply this technique successfully in many areas. The reason they have been successfully, where other imitators haven't is because they understand and pay strict adherence to the ecological process.

Terry Wheeler can be available to make a presentation regarding the application of this natural remediation concept; plan the implementation of the project including estimated costs and contract or oversee project implementation

Terry Wheeler can be contacted at:

Wheeler & Assoc. Inc.; PO Box 2792, Globe AZ 85502

Phone Number: (928) 425-3017

E-Mail wheelerassoc@theriver.com

Enclosure 2, the solution that works

http://www.ecoresults.org/success_wheeler.html

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Success Stories

From Mine Waste to Grassland, Arizona



Revegetating
Mined-out
Lands, Nevada



From Mine
Waste to
Grassland,
Arizona



Restoring a
Desert Oasis,
Arizona



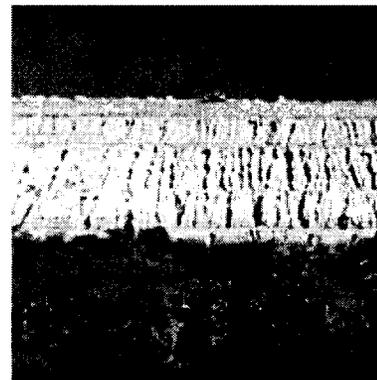
The Healthiest
Riparian Area in
North America?,
NM

One of the people who helped the Tiptons envision their ground-breaking project was Terry Globe, Arizona. Terry had been planning for some time to undertake a restoration of his own Tiptons' success he finally got his opportunity. His test, however, was even more challengi

Instead of dirt, the material on which he chose to perform his restoration was mine tailings, an 1,100 acre pile of it 300 hundred feet thick located in the Sonoran Desert east of Phoenix. The tailings were made up of rock dust crushed to the consistency of talcum powder and treated with a mixture of chemicals that included cyanide to leach out the copper and other metals sought by the miners.

This photo shows the first time hay was tossed over the slopes that formed the edge of the tailings pile. At the time no one was sure cattle would even venture onto the powdery stuff. Notice how deep the animals have sunk into it—in some cases up to their chests!

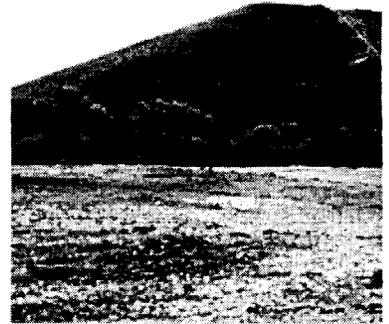
After more hay was spread the cows could walk on the mat it formed without sinking as deeply. By pushing the hay into the tailings as they used it for "flotation", and by fertilizing it with the material from their gut the cattle



created a soil layer up to a foot thick where none had developed in as much as 60 years of leaving the area to Nature.



After removing the animals and letting the mix of hay, tailings, seeds, and manure gestate, a healthy stand of grass grew to cover the 300 foot slope. Later, this cattle-grown grass rooted in one foot of cattle-created soil withstood a heavy rainfall while grass on an area reclaimed by a device called the hydro-seeder washed off. Again, Nature affirmed that the animal-based approach worked, and that it outperformed technology.



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Top of Page



THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
(602) 942-3000 • AZGFD.COM

DEIS Com. Ltr #013
Received 12/01/03
JCH

GOVERNOR
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W. HAYS GILSTRAP, PHOENIX
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MICHAEL M. GOLIGHTLY, FLAGSTAFF
DIRECTOR
DUANE L. SHROUFE
DEPUTY DIRECTOR
STEVE K. FERRELL



November 25, 2003

Ms. Elaine Zieroth
Forest Supervisor
Apache-Sitgreaves National Forest
P.O. Box 640
Springerville, Arizona 85938

Re: Draft Environmental Impact Statement for the Rodeo-Chediski Fire Salvage Project

Dear Ms. Zieroth:

The Arizona Game and Fish Department (Department) reviewed the Draft Environmental Impact Statement (EIS) for the Rodeo-Chediski Fire Salvage Project, on the Apache-Sitgreaves and Tonto National Forests. On September 25, 2002, the Department provided comments on the Scoping Request and on November 15, 2002, the Department provided comments on the Federal Register Notice of Intent to Prepare an EIS (our previous comment letters are attached). We appreciate your consideration of these comments and feel that no further comments are necessary.

The Department appreciates the opportunity to review and comment on this EIS. If you have any questions or would like to discuss any of the comments contained in this letter, please contact Bob Broscheid, Project Evaluation Program Supervisor at (602) 789-3605.

Sincerely,

John Kennedy
Habitat Branch Chief

cc: Sherrie Adams, Habitat Program Manager, Region I
Russ Haughey, Habitat Program Manager, Region VI

Attachments

9-17-02 (10)

FLR



THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
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DUANE L. SHROUFE
DEPUTY DIRECTOR
STEVE K. FERRELL



November 15, 2002

Rodeo/Chediski Salvage and Rehabilitation Project
ATTN: Merle Glen, Public Affairs Specialist
P.O. Box 569
Overgaard, Arizona 85933

Re: Notice of Intent to Prepare an Environmental Impact Statement - Rodeo/Chediski Fire Salvage and Rehabilitation Project

Dear Ms. Merle:

The Arizona Game and Fish Department reviewed the Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS), published in the Federal Register on September 26, 2002. The Apache-Sitgreaves and Tonto National Forests are preparing the EIS for the proposal to salvage fire-killed timber on National Forest System lands associated with the Rodeo-Chediski Fire. On September 26, 2002, the Department provided comments on the Scoping Request for the Rodeo/Chediski Fire Salvage and Rehabilitation Project. We would appreciate re-evaluation of our comments provided in September and consideration of the following comments.

While we recognize that many wildlife habitat components have been lost in the area, many of these components will slowly return as the area recovers and rehabilitation efforts succeed. The Department recommends that the ID Team consider establishing habitat features now in the salvage project that will enhance future habitat components as they develop. Many of the recommended habitat features are Forest Plan standard and guidelines or closely related to them, and are discussed below. The Department can assist in the development of fish and wildlife habitat features and management actions in this regard.

FOREST PLAN STANDARDS AND GUIDELINES:

Snags/Dead & Down Material

We support the statement in the NOI that Forest Plan standards will be adhered to for all resources and activities. Many of our comments relate directly to Forest Plan standards and guidelines. We understand that standards are considered mandatory while guidelines are recommended, but in many instances the current Apache-Sitgreaves Forest Plan (A-S FP) does not differentiate between standards and guidelines, except in recent amendments (Amendment #6, June 1996) that identify specific standards and guidelines for Mexican Spotted Owl, Northern Goshawk and Old Growth management. Many of our comments relate to direction in

Ms. Merle Glen
November 15, 2002
2

As we stated in our September 26 letter, the Department supports the salvage of dead trees within the area while retaining large diameter (>16" dbh) standing dead trees that would serve as high quality snags, where possible. This would assist in meeting the A-S FP standard and guideline for snags (page 122-3). In addition, we again recommend that the ID Team consider retaining snags in clumps. The Department also recommends that the ID Team consider retaining large diameter dead and down material to meet the A-S FP standard and guideline (page 123). Also, consistent with the Tonto Forest Plan (Tonto FP), we recommend management to "Provide a minimum of 180 snags per 100 acres in the Ponderosa pine/mix conifer type. A preferred snag is at least 15" dbh and 35 feet tall."

Wildlife Cover

Currently, there is little wildlife cover in the severe and moderate burn areas. While the entire area experienced a mosaic of post fire conditions, ranging from severe to unburned sites, there are extensive areas in which little or no cover currently exists. The Department anticipates conifer regeneration and browse resprouting will provide suitable wildlife cover in the future; however, we recommend that the ID Team consider retaining clumps of smaller diameter trees to provide wildlife hiding and thermal cover. Retention of these clumps will provide interim cover adjacent to areas that have been seeded with herbaceous species, creating a mosaic of feeding and cover areas. This will also assist in meeting standards and guidelines in the A-S FP relative to wildlife cover (pages 123 - 124-1).

The Department recommends retention of all large oaks to add structure to regeneration of future thickets. Consistent with the Tonto FP, we support actions to "Manage the oak component to maximize an optimum mix of mast and browse to accomplish wildlife objectives...".

Turkey habitat can also be enhanced in the area by maintaining scattered patches of untreated salvage logging slash, particularly in proximity to dependable water, for potential turkey nesting cover (A-S FP, pages 125-126). Consistent with the Tonto FP, turkey habitat can be enhanced by management for a minimum of one slash pile or unlopped top per acre within ½ mile of water for turkey nesting (Amend. 22 page 131). Retention of clumps of small diameter trees will also enhance turkey loafing habitat.

GENERAL COMMENTS:

During recent visits to sites within the project area, the Department observed substantial regrowth of the browse component in the area, specifically oak, locust and ceanothus. Until a sufficient herbaceous forage base is established, many wildlife species, particularly wild ungulates such as elk and deer, will rely heavily on this browse forage component. The Department recommends that the ID Team ensure that proposed salvage operations do not negatively impact the browse forage component. Management actions should include measures to minimize impacts from heavy equipment landings and slash treatments to the greatest extent

Mr. Merle Glen
September 25, 2002

3

The Department appreciates the opportunity to review the Scoping Request and provide these preliminary comments. We also appreciate the opportunity to participate on the ID Team for this project, and we look forward to working cooperatively with the team to plan and analyze treatments within the salvage project that maintain or enhance wildlife habitat values. Please contact me at (602) 789-3602 if you have any questions regarding this letter.

Sincerely,



John Kennedy, Chief
Habitat Branch

cc: Richard Remington, Regional Supervisor, Region I ✓
Rod Lucas, Regional Supervisor, Region VI

Log # 9-5-02(04)



THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

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September 25, 2002

Mr. Merle Glen
 Public Affairs Specialist
 Rodeo/Chediski Fire Salvage and Rehabilitation Project
 P.O. Box 569
 Overgaard, Arizona 85933

Re: Rodeo-Chediski Salvage Project

Dear Mr. Glen:

The Arizona Game and Fish Department has reviewed the scoping request for the Rodeo-Chediski Fire Salvage and Rehabilitation Project. We appreciate the enormity of this project, as well as the importance in accomplishing it to prevent further loss of valuable timber resources to decay and insect infestation.

It was difficult to review the Scoping Request, as there was not a well-defined Proposed Action. The document states that the Forest Supervisors will decide the extent and types of treatment, and the appropriate methods and mitigation measures to employ. The Department anticipates that another document will be completed that will include a range of alternatives, and will specify proposed salvage, fuels and rehabilitation treatments under each alternative. The Department would appreciate the opportunity to be involved in the development of specific alternatives and treatments.

In the scoping request, the proposal states that "Salvage dead and dying trees in the wildland urban interface and reducing remaining stand densities" (Introduction letter; Scoping request, page 3). The Department supports the salvage of dead trees within the area, and recommends that the ID Team consider retaining some large diameter (>16" dbh) dead trees that would serve as high quality snags (i.e., crown affected, base/root area intact). In addition, we recommend that the Forest Service consider retaining snags in clumps and as single trees in high severity and moderate severity areas at higher densities than identified in the Land Management Plans to address the excessive losses of hiding cover, shelter and food for wildlife. The Department recommends that the Forests define a "dying" tree in terms of percent of tree affected, severity of effect, etc.

... explains. "The substantial cost of removing these trees can be (forest restoration) will

Mr. Merle Glen
September 25, 2002

2

activities. Should timber removal be included, the Department recommends that it be conducted in a manner to maintain or enhance habitat conditions for management indicator species and density dependent wildlife species, to the greatest extent possible.

Watershed Concerns

Efforts to prevent further watershed disturbance, such as minimizing vehicular/mechanical disturbance in treatment areas, should be considered a priority. Road treatments and contour log felling, mulching, silt fencing and other permanent and/or temporary type sediment controls should be implemented within and downslope of treatment areas, particularly in Canyon Creek. We support watershed stabilization and rehabilitation on slopes, and efforts to prevent or minimize any additional flow of sediment and/or debris into the riparian habitats during these activities.

It should be noted that salvage and rehabilitation activities on the White Mountain Apache Reservation, including access across National Forest lands that may impact adjacent watersheds on National Forests lands, particularly the Canyon Creek watershed on the Tonto National Forest. The ID Team should coordinate with the White Mountain Apache Reservation relative to their salvage and rehabilitation activities and access routes, and pursue opportunities to work cooperatively with the Reservation to minimize impacts to National Forest lands.

General Comments

The Department is aware that the Forest Service has determined that public safety issues associated with high use areas (e.g., developed recreation sites, trails, roads) impacted by wildfire constitute emergency areas for treatment and will be addressed with Categorical Exclusions. However, it is unclear from the scoping request whether the planning and analysis for these emergency areas will be included in the proposed salvage and rehabilitation project or whether it will be evaluated in a separate analysis. The Department is willing to assist the Forest Service in developing specific treatments within high use areas, to ensure that wildlife resource issues and opportunities are incorporated into specific treatments, to the greatest extent possible.

A map of the analysis area was included with the scoping request, which separated the fire area into 6 separate zones. However, there is no reference in the scoping request to the various zones. The Department assumes that the zones were established to break up the extremely large analysis area into more manageable units. However, if the Forest Service has established any other criteria for these units (i.e., severity of impact, treatment emphasis and/or priorities), this information should be included.

We would appreciate clarification on the Forests' intent with regard to wildland areas, specifically, the development of an analysis document and associated time frames. We would also be concerned with watershed protection and the need to expedite the opportunity for Department

Ms. Merle Glen
November 15, 2002

3

The Department recently had the opportunity to review the Forests' draft policy for restocking domestic livestock after a burn (Standard Considerations for Restocking of Domestic Livestock on Burned Areas). The Department supports the recommended minimum restocking standards identified in the document. We also support the assessment timeframes identified based on burn intensity. Given the effect of the fire on ground cover (herbaceous and litter), the potential for soil erosion is significant and restocking of livestock prior to establishment of adequate ground cover could accelerate erosion rates.

As with the Scoping Request, the NOI states that the substantial cost of removing fire-killed trees can be offset by the commercial sale of wood products. We identified concerns with this statement in our September 26 letter, and these concerns may still apply. With regard to the "commercial sale of wood products," it is unclear what wood products the Forest Service is referring. If the sale of wood products relates only to the sale of the salvaged dead trees, the Department supports this action. We request further clarification on this issue.

The Department supports the use of dead trees and slash to improve watershed conditions in Black Canyon Lake and Canyon Creek. The fishery resources in these areas no longer exist and will require significant management actions to recover to pre-fire conditions and potentials. Based on evaluations of USDA Forest Service BAER team postfire rehabilitation work (Robichaud, 2000), the probability for success is low for hillside and channel treatments. In light of this fact, we recommend implementation of methods that have been documented as the most effective for wildland and urban interface treatments. According to this report, contour log felling and mulching in both quantitative and nonquantitative reports were very effective.

With regard to wildland salvage logging and rehabilitation activities, emphasis should be placed on designing treatments that complement the mosaic of burn intensities and potential improvement in habitat heterogeneity that may result many years from now. Studies show that large and small mammals are likely to abandon the high severity areas; however, they will use the areas adjacent to meet their hiding cover, shelter and forage needs moving into severely burned areas as they recover (summarized in Smith, 2000). We believe a conservative approach to salvage logging treatments and maintenance of a mosaic of habitat conditions in the moderate and low intensity burned areas will better meet the needs of wildlife.

The Department appreciates the opportunity to provide these comments and we hope they prove useful in the preparation of the EIS for salvage activities within the Rodeo/Chediski Fire area.

Sincerely,



John Kennedy
Habitat Branch Chief

DEIS Coa KTR#014
Received 12/01/03



Protecting endangered species and wild places through science, policy, education, and environmental law.

December 1, 2003

Sent via facsimile to (928) 333-6357, hard copy to follow

Rodeo-Chediski Fire Salvage Team
Apache-Sitgreaves National Forests
P.O. Box 640
Springerville, AZ 85938

Dear Salvage Team:

Following are the Center for Biological Diversity's comments on the draft Environmental Impact Statement ("DEIS") for the proposed Rodeo/Chediski fire salvage timber sale. The Center for Biological Diversity ("CBD") is a non-profit, public interest organization dedicated to the preservation, protection and restoration of biological diversity, native species and ecosystems. CBD currently has more than 7,500 members and works to achieve its goals through the use of science, policy, education and environmental law.

CBD submitted extensive comments on the scoping report for this project. Most of the issues and questions raised in these comments have not been addressed in the DEIS. Please ensure the final EIS provides full and detailed responses to all issues and concerns raised in these comments and all other comments received on the DEIS. We recommend an appendix in the FEIS which contains reprints of all comments received on the DEIS, with response to those comments then provided in the margins.

We believe the DEIS is fundamentally flawed in a number of respects, and seems clearly designed to justify a predetermined outcome of a large post-fire salvage timber sale. Such an approach is directly at odds with the letter and spirit of NEPA, which mandates that the Forest Service carefully consider a full and reasonable range of alternatives to the proposed course of action. In its bias towards post-fire salvage of large trees (as only trees larger than 12 inches will be cut under all proposed alternatives), the DEIS has failed to acknowledge the many adverse environmental effects produced by salvage sales. These failures are most clearly evident with respect to analysis concerning soils, fire and fuel loads, wildlife, and economics.

While the Forest Service repeatedly makes public claims that it is not attempting to log large and old-growth trees and is a reformed agency focused on thinning small

trees and protecting communities, the Rodeo-Chediski salvage sales demonstrate these claims to be demonstrably false. With hundreds of Arizona communities at high risk of wildfire, the Forest Service continues to focus its resources towards projects designed exclusively to log large trees in areas far outside the wildland-urban interface. Rodeo-Chediski will log as much as 105 million board feet of large trees on 45,000 acres. Nearly 20 miles of roads will be constructed in an already extremely overroded landscape, more than 100 miles of currently closed roads "reopened," and 250 miles of additional road will be "improved." This enormous expenditure of time and resources will do nothing help decrease wildfire or bark beetle risk, protect communities, restore damaged ecosystems, or recover imperiled wildlife species—the goals which the Forest Service repeatedly and falsely claims it is now primarily concerned with. In fact, the consequences of all of the nearly identical "action" alternatives considered in the DEIS will run directly counter to these important goals.

I. REQUESTS FOR INFORMATION

During scoping, we requested several categories of information to be provided within the DEIS. For the most part, the Forest Service has failed to provide this information. We are thus including our request once again, and ask that the following information be provided in the final EIS:

- * Proposed logging unit boundaries, clearly defined and discernable by both textual descriptions and maps. The maps provided in DEIS do not provide sufficient detail;
- * Methods of logging prescriptions to be used (e.g. clearcut, shelterwood seed cut, etc.)
- * Estimates of current tree distribution per acre, broken down into appropriate size classes;
- * Estimates of trees to be cut by size per acre. Please provide such information for trees greater than 16 inches in diameter and larger, broken down into two inch size classes (e.g. estimated number of trees to be cut per acre 16-18", 18-20", 20-22", etc.)
- * Information on whether the Forest Service proposes to log only trees that were immediately killed by the fire, or also proposes to log burned trees which have not yet died. If the latter, please provide detailed information on mortality models which are used, including baselines of crown scorch and other information used to predict such mortality. The DEIS contends that only "dead" trees will be logged; does this mean 100% crown scorch?
- * Detailed information on location of roads to be re-constructed and

Please also provide similar information regarding which roads will be obliterated or otherwise closed after the proposed salvage logging operations are completed.

- * Relation of proposed logging units to locations of threatened, endangered and other imperiled species. This information should also include post-fire survey results with respect to species such as Mexican spotted owl and northern goshawk. The Forest Service should not simply assume that territories within the fire area have been abandoned or are otherwise not being utilized.
- * Accurate information on the Rodeo-Chediski fires, including percentage of Forest Service land burned broken down by severity class and habitat type, as well as comparison of these percentages with those pertaining to tribal land.
- * Detailed information on salvage activities taking place and anticipated to take place on the White Mountain Apache Reservation, including locations of sales, volume removed, etc. Such information is especially important to proposed logging within shared watersheds in the larger Salt River watershed.
- * Detailed and quantified information on adverse environmental effects caused by the Rodeo-Chediski fires, including soil impacts, increases in erosion rates and corresponding increases in sedimentation, impacts to wildlife, etc.
- * Detailed and quantified information concerning current management practices and status within the Rodeo-Chediski fire area, including grazing allotments and levels of grazing, road densities, on-going and recent timber and fuelwood activity, and other management activities.

II. FAILURE TO ADDRESS RELEVANT SCIENTIFIC RESEARCH REGARDING THE ENVIRONMENTAL EFFECTS OF POST-FIRE SALVAGE LOGGING

It is essential that the Forest Service directly, fully and honestly address the body of scientific research and literature addressing the environmental effects of post-fire salvage logging. This has not been done in the DEIS; in fact, the DEIS does not even contain a bibliography of scientific literature used in the Forest Service's analysis. In numerous other salvage logging timber sales planned by Southwestern region national forests in recent years, the Forest Service has failed to acknowledge key studies and literature reviews, instead basing its conclusions regarding environmental effects entirely on personal observation and alleged professional experience. While observation and experience on the part of Forest Service personnel should certainly inform their analysis

scientific research, literature and other available assessments regarding the environmental effects of post-fire salvage logging.

One study that the Forest Service has been particularly reluctant to address or acknowledge is a 1995 study authored by seven respected academic, governmental, and tribal biologists entitled "Wildfire and salvage logging: Recommendations for ecologically sound post-fire salvage management and other post-fire treatments on federal lands in the West" (hereafter referred to as the Beschta report).² The central reason for ignoring this report may be the fact that the Beschta report contains several management recommendations which are directly at odds with the manner of post-fire salvage logging typically proposed by the Forest Service. These recommendations include:

- * Prohibition of salvage logging in severely burned sites, and other areas susceptible to extreme erosion
- * No tractors and skidders in all salvage areas because of the exacerbated soil compaction and erosion problems they create on sensitive soils
- * No road building
- * Retention of at least 50% of all snags in all size classes
- * Retention of all snags greater than 20 inches or older than 150 years
- * Presumption against reseedling
- * General recommendation to allow burned areas to *recover naturally* rather than resorting to human intervention

In attempting to dismiss the importance of the Beschta report, the Forest Service commonly advances two main arguments: (1) the report was intended to apply only to forests within the Pacific Northwest; and (2) the report has not been peer-reviewed. Neither of these contentions has validity.

1. The Beschta Report Was Intended to Apply to all Interior Western Forests, and Its Findings Have Been Explicitly Adopted in Southwestern Region National Forests

The Beschta report's findings are not limited to forests of the Pacific Northwest. As the title explicitly states, it contains recommendations for ecologically sound post-fire salvage management and other post-fire treatments on federal lands *in the West*. On the first page of the report, it is noted that "*Western ecosystems have evolved with, and in response to, fire. While some have argued that fire is the major imminent threat to the*

health of the region's forest ecosystems, it much be recognized that there are a number of threats to the integrity of ecosystems in the *interior west*." Throughout the Beschta report, similar references to *western* ecosystems are made. The authors of the Beschta report clearly did not intend their findings to be limited to the ecosystems of the Pacific Northwest.

Moreover, the findings of the Beschta report have been directly acknowledged and adopted within the Southwest. The Mexican spotted owl recovery team, at page 88 of the spotted owl recovery plan, states that "the recovery team advocates the general philosophy of Beschta et al (1995) for use of salvage logging." The plan also establishes a presumption against salvage logging within spotted owl territories and outlines several management requirements, including repeated survey efforts, that must be met before salvage logging within owl territories is permitted.

Finally, from a legal perspective, the 9th Circuit Court of Appeals (of which Arizona is a part), stated in a recent case that the Forest Service's failure to consider and address the findings of the Beschta report was partial grounds for remanding a post-fire salvage timber sale for further analysis. *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208 (1998). In that case, the court stated, "According to the Beschta report, there is no ecological need for immediate intervention in post-fire landscapes. A rapid response, the Beschta report explains, may result in unforeseen, detrimental environmental consequences. The Regional Forest Supervisor directed that the Beschta report recommendations be addressed in post-fire environmental review documents, but the Forest Service failed to disclose the report's recommendations in the Big Tower EA." *Id.* at 1213.

2. The Beschta Report Is a Widely Respected Document, and Many of the Forest Service's Own Researchers Have Acknowledged its Validity

Several Southwestern region national forests have attempted to dismiss the importance and validity of the Beschta report on the grounds that it has not been "peer-reviewed." This assertion was also recently made by Chief Bosworth in the self-serving June 2002 U.S. Forest Service report, "The Process Predicament: How Statutory, Regulatory, and Administrative Factors Affect National Forest Management." In that report, the Chief maligns the Beschta report as "questionable," stating that the report contains "unsubstantiated statements and assumptions." Notably, these assertions are themselves not backed up with documentation or citation of specific Forest Service or other documents, whether peer-reviewed or not.

Although not published in a peer-reviewed technical journal, the Beschta report was in fact peer-reviewed prior to issuance by other scientists with expertise in fire ecology. Additionally, in March 1995, more than 50 scientists with expertise in biology, fisheries, wildlife, ecology and geology endorsed the report in a letter to then President Clinton. The members of the Beschta report themselves have incredible depth and

hydrology, water quality, forest management, landscape ecology, aquatic ecology, fish ecology, conservation biology and ecological restoration.

Importantly, several Forest Service researchers have acknowledged the importance of the Beschta report, and concurred with several of its findings. For example, in August 1995, Dr. Richard Everett of the U.S. Forest Service Pacific Northwest Research Station prepared a response to the Beschta report titled "Review of Recommendations for Post-fire Management" (hereafter referred to as the Everett report), sent in a letter to the Pacific Northwest Regional Forester. The Everett report concurred with several key aspects of the Beschta report, including its conclusion that there is no data supporting the notion that post-fire salvage logging reduced the risk of reburn. For example, page 4 of the Everett report states that "there is no support in the scientific literature that the probability of reburn is greater in post-fire tree retention areas than in salvage logged sites," and that the Beschta report is "... correct that the intense reburn concept is not reported in the literature." At page 5, the Everett report states that current research suggests that salvage logged areas may have elevated fire hazard over unlogged sites, and at page 6 concludes that "*the urge to remove woody biomass is not based on reducing short-term fire hazard, but on the capture of economic values and reduction of long-term fire hazard.*"

3. Other Studies Addressing the Environmental Effects of Post-fire Salvage Logging

Many additional scientific reports exist which address the environmental effects of post-fire salvage logging. These reports include an extensive literature review conducted by the Forest Service itself, the McIver and Starr report. Many of the conclusions reached in the McIver and Starr report run directly counter to the unsubstantiated conclusions reached throughout the DEIS that the proposed salvage logging will somehow benefit the environment. The Beschta report, as well as several additional studies and other sources of information relating to the environmental effects of post-fire salvage logging which should be addressed by the Forest Service, are contained in the table below.

| Study | Comments |
|---|---|
| Beschta et al (1995)
Intermountain West | Advocates natural recovery
Provides management recommendations |
| McIver and Starr (2000)
Intermountain West | Forest Service literature review
Acknowledges negative effects |
| Klock (1975)
Eastside Cascades | Ground based logging causes severe soil disturbance and erosion |

| | |
|---|--|
| Perry (1994) | Senate testimony on hazards of salvage logging |
| Minshall et al (1994) | Letter to President from scientists against postfire logging |
| Sexton (1998) | Negative effects of salvage logging and seeding on ponderosa pine and vegetation |
| Keene (1993) | Salvage should be used to restore, conducted within other forest values |
| Maser (1996) | Lists negative effects of salvage, fundamentally questions practice |
| Peters et al (1996) | Salvage logging does not reduce fire risk, damages soils, streams, and wildlife |
| Brown (1997) | Ecological effects of salvage logging are primarily detrimental |
| Caton (1996)
Northwestern Montana | Nest abundance higher in unlogged area for 16 of 17 cavity-nesting birds. |
| Hitchcox (1996)
Northwestern Montana | Cavity-nesting birds at significantly higher densities in unlogged areas |
| Sexton (1994)
Oregon | Salvage decreased forb and shrub biomass, species richness, increased exotics |

Studies directly applicable to the ponderosa pine habitat type such as Sexton (1998) are particularly important to consider. In that paper, "Ecological effects of post-wildfire management activities (salvage-logging and grass-seeding) on vegetation composition, diversity, biomass, and growth and survival of *Pinus ponderosa* and *Purshia tridentata*," Sexton addresses post-fire logging of an area subjected to a "stand-replacement disturbance, where the majority of trees, the herbaceous component, and crowns of understory shrubs were killed." Sexton concludes that "salvage logging resulted in a significant decrease in understory biomass, species richness, species diversity, and growth and survival of *P. ponderosa* and *P. tridentata*," and that "salvage-logging reduced species richness, species diversity, and altered species composition."

III. FAILURE TO CONSIDER REASONABLE RANGE OF ALTERNATIVES

NEPA requires that an EIS contain a discussion of the "alternatives to the proposed action." 42 U.S.C. §§ 4332(C)(iii) (E). The discussion of alternatives is at "4)

Congress, 222 F.3d 562, 567 (9th Cir. 200)(compliance with NEPA's procedures "is not an end in itself . . . [but] it is through NEPA's action forcing procedures that the sweeping policy goals announced in § 101 of NEPA are realized."). NEPA's regulations and Ninth Circuit caselaw require the agency to "[r]igorously explore and objectively evaluate all reasonable alternatives." Id. § 1502.14(a) (emphasis added); Citizens for a Better Henderson v. Hodel, 768 F.2d 1051, 1057 (9th Cir. 1985) (EIS must consider "every" reasonable alternative). The courts, in the Ninth Circuit as elsewhere, have consistently held that an agency's failure to consider a reasonable alternative is fatal to an agency's NEPA analysis. See, e.g., Idaho Conservation League v. Mumma, 956 F.2d 1508, 1519-20 (9th Cir. 1992) ("The existence of a viable, but unexamined alternative renders an environmental impact statement inadequate."); Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 48 Fed. Reg. 18,026 (March 16, 1981)("In determining the scope of alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out the particular alternative. Reasonable alternatives include those that are practical or feasible from a technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.")

Several specific proposals for alternatives were provided during the scoping process by CBD and other organizations. CBD and others also offered to work cooperatively with the Forest Service in developing such alternatives. Requests to develop such alternatives were ignored. Despite the Forest Service's claim that it is willing to dialogue and work with the public, our offers to work with the agency in crafting meaningful alternatives were ignored. Apparently, the Forest Service's definition of "the public" includes only select segments of society.

As a result, the only alternatives developed for this EIS process are slightly different variations of the same essential action: large post-fire salvage sales focused exclusively on the logging of large trees across tens of thousands of acres. No alternatives were developed that would have focused on retention of large trees and removal of small trees through alternative contracting mechanisms or alternatives which would move towards restoration and healing of this area and true reduction of future fire risk.

Thus, we once again request that you analyze an alternative that would focus on small tree removal (e.g. not allow removal of any snags over 12" dbh), or other alternatives which would offer a true alternatives to the proposed action (e.g. retain the 20 largest snags in each acre).

IV. SOILS ANALYSIS IS FUNDAMENTALLY FLAWED

The entire environmental analysis within the DEIS is based on the laughable premise that tens of thousands of acres of post-fire salvage logging of large trees on fragile soils and steep slopes will improve soil quality and watershed health, increase hydrologic function, and decrease erosion and sedimentation. The Forest Service reasons

in support of these assertions. Such discussion and reference must be included in the FEIS, especially in light of the fact that a large body of scientific research has consistently found that logging operations have significant and long-lasting adverse effects on soil quality, and related issues of erosion and sedimentation.

The DEIS turns this research on its head throughout the document. For example, at page 52 the Forest Service states that the no action alternative "would produce the highest soil erosion of all alternatives considered in detail." At page 60, the agency opines that "in post-fire salvage situations, conditions before logging are in the worst possible condition with peak erosion and runoff rates present in many areas. Under these conditions, salvage logging can improve all elements of soil quality and result in a net beneficial effect." The next page states that "the limited negative effects of compaction are more than offset by positive effects of providing ground cover." The Forest Service's contention that as much as 105 million board feet of logging on 45,000 acres and construction of nearly 20 miles of road will benefit the post-fire environment is visually illustrated at page iv, which shows that the biggest post-fire salvage timber sale in the history of Arizona will result in enhanced soil productivity, lowered erosion rates, improved soil quality, improved stream channel condition, reduced flooding, reduced sediment rates, and improved watershed conditions.

The Forest Service's lack of scientific rigor in reaching these conclusions is breathtaking. As stated in the Beschta report, soil productivity is irreplaceable in human timescales; thus, post-fire management actions must proceed with great caution to avoid increasing erosion or damaging soils. An important baseline of this approach is the retention of all large snags across the landscape. Instead, the Rodeo-Chediski sales focuses entirely on the logging of large trees, while retaining millions of small trees.

As noted by the Forest Service itself in the only exhaustive literature review of scientific studies of post-fire salvage logging, it is likely that such logging will produce much more sediment than produced by fire alone (McIver and Starr 2000). Logging and associated activities have numerous negative impacts on soils that persistently increase soil erosion, reduce soil productivity, and slow postfire recovery. Logging inevitably increases soil erosion and stream sedimentation, regardless of how carefully it is designed and implemented. Again, this is a conclusion that has been repeatedly reached by the Forest Service itself. (Megahan et al., 1992; USFS and USBLM, 1997a; b).

For example, logging and associated activities (e.g. the construction and use of landings and temporary roads) significantly increase soil disturbance and reduce soil productivity. Based on a review of post-fire logging studies and case histories in the Sierra Nevada, Kattleman (1996) concluded that the more soil disturbance was increased after fire, the more soil erosion was increased. McIver and Starr (2000) arrived at similar conclusions based on review of information over a wider geographic area. These impacts are often most acute in severely burned terrain. Beschta et al. (1995), concluded that postfire logging should be avoided in severely to moderately burned terrain. Despite the

Logging also increases soil erosion by disrupting existing soil cover by needles, branches and logs. Post-fire logging persistently impedes the recovery of soil cover and soil conditions by removing a significant amount of wood which would ultimately fall to the forest floor, providing both soil cover and important sources of organic matter for soil productivity. The removal of branches, trees, and other sources of coarse woody debris, inevitably and significantly reduces soil productivity (USFS and USBLM, 1997a; b). None of these effects are discussed in DEIS, but are simply dismissed as non-significant.

The proposed logging project would also dramatically increase soil erosion and inhibit postfire recovery by constructing "temporary" road. Road construction, including temporary roads, causes severe loss of soil productivity via acute compaction, complete removal of all vegetation and organic matter, and vast increases in erosion. The latter effect is prolonged by the loss of soil productivity, which severely retards revegetation. Roads also facilitate the spread of noxious weeds, which significantly retards postfire recovery by competing with native vegetation. The only thing temporary about "temporary" roads is their vehicular use; the multiple negative impacts of constructing "temporary" roads persist for decades to centuries. Due to the severe and enduring negative effects of roads, the Beschta report concluded that: "Building new roads in the burned landscape should be prohibited."

V. THE DEIS DOES NOT CONTAIN A DISCUSSION OF THE CUMULATIVE EFFECTS OF FIRE SUPPRESSION ACTIVITIES.

The Rodeo-Chediski fire was fought by an army of firefighters, bulldozers and airplanes, resulting in the construction of hundreds of miles of firelines, construction of many camps and staging areas, and the release of millions of gallons of chemical retardant into the environment. The cumulative effects of these activities are not discussed in the DEIS.

VI. THE "REBURN" THEORY IS UNSUPPORTED

A recent Forest Service scientific report "found no studies documenting a reduction in the fire intensity in a stand that had been previously burned and then been logged". McIver & Starr, "Environmental Effects of Post-fire Logging: Literature Review and Annotated Bibliography", U.S.F.S., PNW-GTR-486 (2000), p. 19. Nonetheless, the DEIS claims that most large snags must be removed supposedly to prevent a future intense fire. The DEIS fails to analyze conclusions from this key Forest Service studies, and other studies, that suggest this is unnecessary.

There exist at least two key scientific studies which contradict the DEIS's proposal to remove most large snags, and which were not analyzed at all in the DEIS. First, the Rothermel (1991) (see Res. Pap. INT-438) study determined that even woody

larger than 6" dbh would be increasingly less relevant to fire behavior). Second, the James K. Brown et al ("Coarse Woody Debris and Succession in the Recovering Forest", May 5, 2001) study concluded on page 7 that, "A modifying factor in determining an optimum CWD [coarse woody debris level] is that the larger the diameter of downed CWD the greater the loading that can be allowed without undesirable fire effects." The study further noted on page 7 that, "...high fire hazard and resistance-to-control ratings apply when CWD loadings of 25 to 30 [tons]/acre are largely comprised of 3 to 6 inch material." In fact, when asked about the difference between small diameter material and large logs in terms of fire intensity, Dr. Brown made the following comments at a recent conference in Montana regarding the Bitterroot fire salvage project: "There is a significant difference. Smaller sizes are more of a problem from a fire standpoint and also less desirable from a biological standpoint and long-term ecological standpoint. The 3 to 6 inch [diameter] material isn't as useful and is more of a problem. There is an important distinction there. The decision of what to do on the landscape really depends a lot on [the size of] that material...the larger size is desirable to remain on the site." (emphasis added). Nonetheless, the Forest Service repeatedly asserts without reference throughout the DEIS that logging of trees exclusively larger than 12" will reduce future fire risk. A full and robust explanation of this theory must be provided in the FEIS.

VII. INCREASE IN FIRE RISK NOT ADEQUATELY DISCUSSED

Related to the DEIS's flawed conclusion that the proposed post-fire salvage logging will reduce fire risk is the fact that such logging will actually increase such risk. In fact, the proposed salvage logging will actually increase fire hazard for many years, due to the production of enormous amounts of slash.

The DEIS acknowledges that creation of this slash will increase fire danger in the short-term. However, the Forest Service does not explain its contention that this fire danger would quickly decrease over time, as the proposal contemplates leaving several tons of slash per acre on site. While the DEIS claims that "the long-term benefits from salvage harvest would be the reduction of large woody fuels over a large area, and subsequent reduction in future fire intensity and severity," is directly contradicted by the Forest Service's own research discussed above, which concluded that "removing large, standing dead trees will not reduce fire hazard" and that logging treatments that not remove slash actually result in elevated fire danger.

In one Forest Service study, the authors concluded that, "The cut and scatter and salvage/group selection treatments that do not treat the slash and adjoining landscape resulted in more extreme fire behavior than the [untreated forest]... This occurred because surface fuel load was increased. Removing large, standing dead trees will not reduce fire hazard in these ecosystems." See Stephens, U.S. Forest Service, "Effects of fuels and silvicultural treatments on potential fire behavior in mixed conifer forests of the Sierra Nevada", For. Ecol. Manag. 105: 21-34 (1998). These conclusions from the Forest

In the final EIS, please address how many tons of slash per acre will remain in each size class of coarse woody debris. The DEIS at page 111 inexplicably concludes that under the action alternatives, logging "would not produce many fine fuels and would pose no short-term risk." (while at the same time asserting that these fine fuels will reduce erosion and improve soil quality).

VIII. IMPACTS TO WILDLIFE NOT ADEQUATELY ANALYZED

As discussed above, the DEIS relies on the fundamentally flawed assertion that slash created from post-fire logging operations will improve ground cover to conclude that such logging will result in a net positive benefit to the soil resources within the Rodeo-Chediski fire area. This unwillingness to address the negative environmental effects of salvage logging is continued within the section addressing wildlife impacts. Here too, the Forest Service claims without reference or scientific justification, and in the face of considerable evidence to the contrary, that all of the action alternatives will result in a benefit to wildlife and that simply allowing for natural recovery will cause the greatest amount of environmental damage (since the Forest Service refused to consider an alternative which would have limited cutting to small-diameter trees, the effects of such action are not considered). For example, the Forest Service concludes at page 138-139 of the DEIS that the "no action" alternative would result in slower recovery of forage for big game and less favorable for antelope than all of the "action" alternatives, and the intensive logging and road construction proposed under these alternatives.

Again, research conducted by the Forest Service itself has long documented the negative impacts of roads and logging on many species of wildlife. Many of these references are available in documents associated with the Roadless Rule, the Sierra Nevada Framework, and the Interior Columbia Basin Management Plan.

1. Impacts to Mexican spotted owl not adequately analyzed and Forest Plan Requirements are not met

At least 20 Protected Activity Centers (PACS) are contained within the Rodeo-Chediski wildfire analysis area. These PACs are disproportionately found on the Tonto National Forest, which despite its relative small acreage burned in relation to the Sitgreaves, contains nine of these PACs. The PACs are overwhelmingly situated in the many steep canyons dissecting the face of the Mogollon Rim.

Of these 20 PACs, in previous surveys, nesting owls have been detected within 14 since 1985. In post-fire surveys, owls were detected in at least 11 PACs. Recent research has demonstrated remarkable short-term fidelity to nest areas, even when severely burned. In light of this research, it is imperative that the Forest Service does not treat burned areas as no longer habitat or assume that Forest Plan and Recovery Plan requirements intended to protect and recover owls are no longer applicable.

While the Forest Service has laudably abided by requirements prohibiting logging within PACs, it has unfortunately attempted to circumvent other requirements by recharacterizing mixed conifer protected and restricted habitat as no longer protected if those areas were moderately or severely burned. Thus, the proposed action does not abide by important guidelines, including those prohibiting the logging of trees larger than 24 inches within mixed conifer habitat. As importantly, the proposed action would allow substantial logging and hauling activities within MSO habitat during springtime nesting periods. Such actions are illegal under both Forest Plan and Recovery Plan direction.

2. Impacts to Bald eagle not adequately analyzed

Very few areas in Arizona and the greater Southwest support either nesting or wintering bald eagle sites. Several important wintering areas occur within the Rodeo-Chediski analysis area. Despite this fact, the Forest Service proposes salvage logging within ¼ of wintering area concentration sites near Black Canyon Lake and OW Ranch. The fact that extensive logging is already occurring near these areas under the three categorically excluded decision memos is not adequately discussed. Scientific evidence addressing the effects of human presence and disturbance on bald eagles is also not properly considered. The Forest Service's conclusion that formal section 7 consultation concerning potential effects to bald eagles is not necessary is contrary to the best scientific evidence, and formal consultation with Fish and Wildlife Service should be initiated concerning these effects.

3. Impacts to Apache trout not considered

The Forest Service has not considered the effects of proposed salvage logging on Apache trout populations on the White Mountain Apache reservation, and has failed to consider these impacts in its Biological Assessment. Information concerning the effects of the wildfires on these populations and the subsequent salvage logging of more than 160,000 acres of salvage logging on the reservation is not addressed. While the large majority of logging on these sales will occur within the Little Colorado watershed, several thousand acres of logging will also occur within the larger Salt River watershed and could potentially impact Apache trout populations. Given the intensive salvage logging already occurring within this species' habitat, it is especially imperative that full and careful consideration to additional logging is fully considered.

IX. A LAWFUL ROADS ANALYSIS HAS NOT BEEN CONDUCTED

The U.S. Forest Service administers the largest road transportation network of any agency, governmental entity, or nation on Earth. More than 386,000 miles of classified roads are contained within national forest boundaries. Forest service lands also contain an additional 137,000 miles within their boundaries, including 54,600 miles of public roads, 22,400 miles of private roads, and 60,000 miles of unclassified, unauthorized roads. It

total, a nearly inconceivable 523,000 miles of roads are harbored within the Forest Service "transportation" system.¹

In a direct acknowledgment of this untenable situation, the sheer impossibility of maintaining such a system, and the innumerable deleterious environmental impacts of roads, the Forest Service on January 12, 2001 published its final rule implementing the Forest Service Roads Strategy. The implementation of this strategy modified Forest Service regulations at 36 C.F.R. parts 212 and 261, as well as replacing Forest Service Manuals addressing Planning (Title 1900) and the Transportation System (Title 7700).

Unfortunately, the Bush administration has waged an undemocratic and underhanded assault on both the Roads Strategy and the Roadless Policy, both of which were finalized only after what was perhaps the most extensive effort ever undertaken by a federal agency to solicit public opinion and comment on a proposed rule. In contrast, the various subterfuges of these policies by the Bush administration have allowed the American public little to no opportunity for public comment or review. See 66 Fed. Reg. 8899, February 5, 2001 (delaying effective date of the roadless rule); Interim Directive 7710-2001-2 (delegating authority to the Chief to approve road construction or reconstruction in roadless areas); Interim Directive 2400-2001-1 (extending the deadline by which all decisions must be informed by a roads analysis). In cases where public comment has been allowed, such as "New Interim Directive No. 7710-2001-3," which essentially guts the Roadless policy, these comments are ostensibly invited and considered even though the Forest Service has made them effective upon issuance. And of course, the Bush administration has baldly directed the Department of Justice to abdicate its duties to defend itself in the industry litigation challenging the adequacy of public participation during the Roadless policy NEPA process, leaving the legal defense of this landmark effort to intervenor environmental organizations.

Under the Roads Strategy, a revised administrative policy to guide transportation planning, analysis, and road management on national forest lands, the agency is required to conduct roads analysis before implementing site-specific projects. The purpose of this analysis is to finally provide some semblance of sanity and balance to the forest service roads system, for economic, ecological, and simple planning purposes. For example, revised Forest Service Manual Chapter 7712.13 (c) states:

"When proposed road management activities (road construction, reconstruction, and decommissioning) would result in changes in access, such as changes in current use, traffic patterns, and road standards, or where there may be adverse effects on soil and water resources, ecological processes, or biological communities, those decisions must be informed by roads analysis."

The final EA for the Roads Strategy also clearly contemplates such analysis, stating that all project decisions, ecosystem assessments, or forest plan revisions published more than six months after the effective date of the rule (January 10, 2001) require a roads analysis process or appropriate documentation explaining why information from a higher-level roads analysis was not needed to inform the project-level decision (Final EA, p. 30).

The Roads Strategy not only provides procedural direction to conduct roads analysis, but establishes substantive standards with respect to road closure, particularly unclassified roads. In recognition of the vast excessiveness of the current forest service transportation network, and the large contribution that illegal, uninventoried, and wildcat roads contribute to this problem, the Roads Strategy implements new policy stating that the forest service will:

“not maintain unclassified roads except under emergency resource protection circumstances. Unclassified roads will be closed and made inaccessible where funding permits unless they are made part of the authorized forest road system as provided for in this policy.” FSM 7703.2 (1).

The Strategy provides for additions to the road system “only where resource management objectives are clearly demonstrated and where long-term funding obligations have been carefully considered,” 7703.1 (4); further, any decision to add roads to the system “must be informed by a roads analysis process,” involving consideration of several environmental impacts, including ecological processes, introduction of exotic species, effects on threatened and endangered species, cultural uses or historical sites, fish and wildlife habitat, water quality, and visual quality. 7703.2 (3). 7703.2 (2) further states that “many unplanned, unauthorized, unclassified travelways exist within National Forest System lands and are high priority candidates for decommissioning.”

Despite the Road’s Strategy clear presumption in favor of decommissioning unclassified roads, and its detailed requirements for adding any road to the transportation system, the DEIS anticipates the “temporary construction” of approximately 20 miles of road and the “reopening”

The proposed road construction conflicts with the Roads Strategy presumption in favor of road decommissioning, as well as its stated goal and requirement to reduce the extent of milcage within the Forest Service transportation system.

Additionally, the roads analysis informing this project does not meet substantive direction contained in the Roads Strategy in several respects. For example, the analysis does not adequately analyze the various environmental, economic and other impacts of both the existing road system within the Rodeo-Chediski analysis area. Additionally, it does not meet or address the Strategy’s presumption in favor on closing and decommissioning non-system roads, but instead contemplates the “reconstruction” and

roads systems may only be made where "resource management objectives are clearly demonstrated (in this case, the Forest Service concedes that the proposal is at odds with existing direction, and would require forest plan amendments) and there has been no consideration of long term funding objectives.

X. FOREST PLAN ROAD DENSITIES ARE NOT ADDRESSED

The DEIS fails to address current road densities per square mile, whether those densities meet Forest Plan direction, and whether those standards will be met after proposed road construction is completed.

XI. CUMULATIVE EFFECTS ANALYSIS IS INADEQUATE

The need to adequately address cumulative effects is a cornerstone of lawful NEPA compliance. 40 C.F.R. § 1502.16. Under CEQ's NEPA implementing regulations, cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non Federal) or person undertakes such other actions. 40 C.F.R. § 1508.7. The requirement to address cumulative effects has been addressed in detail recently by several federal court decisions. As stated recently by the 9th Circuit Court of Appeals,

"To 'consider' cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing the Forest Service's decisions, can be assured that the Forest Service provided the hard look that it is required to provide . . . General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided."

Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1379-80 (9th Cir. 1998)

The court's holding the Neighbors of Cuddy Mountain case has been followed by several subsequent decisions within courts around the country, including courts within the 4th, 9th, and D.C. Circuits. As noted repeatedly in these cases, the analysis of cumulative effects must be contained within the NEPA document:

"The EA's cursory and inconsistent treatment of sedimentation issues, alone, raises substantial questions about the project's effects on the environment and the unknown risks to the area's renowned fish populations. We do not find adequate support for the Forest Service's decision in its argument that the 3,000 page administrative record contains supporting data. The EA contains virtually no references to any material in support of or in opposition to its conclusions. That is where the Forest

Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1213-14 (emphasis added).

Like the decisions at issue in the Neighbors of Cuddy Mountain, Blue Mountains, and other cases, the Forest Service has failed to provide detailed and quantified information with respect to cumulative effects as required by NEPA. This failure is especially problematic with respect to: 1) the cumulative effects of proposed road construction and "reconstruction" in conjunction with past, present and future road construction, especially wildcat roads caused by increasing off-road vehicle use; 2) the cumulative effects of the proposed logging, other logging current occurring, the Rodeo-Chediski wildfires and the effects of fire suppression, and other activities on sensitive wildlife species such as the Mexican spotted owl and bald eagle; and 3) the cumulative effect of the proposed logging, road construction, grazing impacts and other impacts on soils which may cause increased erosion, sedimentation, and general watershed level impacts.

While the EIS does contain a cumulative effects section which addresses some of these issues, the analysis provided in narrative and qualitative in nature, rather than the quantitative and searching inquiry required under NEPA.

XII. THE AREA SOUTH OF FOREST LAKES WAS ONLY LIGHTLY BURNED AND SHOULD NOT BE SALVAGE LOGGED.

In site visits, CBD staff and volunteers noted very few large trees which were killed in this area, and could still see the mark on the large trees from the Baca timber sale (which the Forest Service has falsely and repeatedly lied about to the press, characterizing it as a "thinning" project). Also directly contrary to Forest Service public statements that 80% of the Baca area has been "destroyed," this western edge of the fire boundary is largely lightly to very moderately burned. The fire was clearly beneficial throughout the majority of this area. These areas should be removed from the salvage sales.

XIII. MODERATELY BURNED AREAS WILL RECOVER NATURALLY AND SHOULD NOT BE SALVAGE LOGGED

XIV. MANAGEMENT INDICATOR SPECIES ANALYSIS IS INADEQUATE

The DEIS fails to meet statutory and regulatory direction with respect to MIS. Pursuant to NFMA, the Forest Service is required to "provide for a diversity of plant and animal communities." 16 U.S.C. § 1604(g)(3)(B). Regulations implementing this provision state more specifically that the Forest Service must manage habitat to "maintain viable populations of existing native and desired non-native vertebrate species." 36 C.F.R. § 219.19. The regulations further state that to implement this requirement, certain species must be designated as "management indicators," and that "planning alternatives

of the management indicator species will be monitored and relationships to habitat changes determined.” § 219.19 (a)(1) and (6)(emphasis added). Thus, the courts have held that in order for the Forest Service to fulfill its duties with respect to MIS, “population data must be collected.” Sierra Club v. Martin, 168 F.3d 1, 7 (11th Cir. 1999).

In Sierra Club v. Martin, the court remanded timber sales on the Chattahoochee and Oconee National Forests, noting that:

“[D]espite this extensive habitat change and the fact that some MIS populations in the Forest are actually declining, the Forest Service has no population data for half of the MIS in the Forest and thus cannot reliably gauge the impact of the timber projects on these species.”

The diligent and proper inventorying and monitoring of MIS is especially important with respect to songbird species in the Southwestern region. Indeed, the Forest Service itself has acknowledged widespread and systematic declines among songbird species in Arizona and New Mexico, including pygmy nuthatch—MIS on the Kaibab. (Hall, Morrison, and Block 1997). These declines are characterized as “significant” for a full two-thirds of species found in Arizona and New Mexico. Id. Much of the explanation for this dire situation lies with past, present, and historical land-use practices:

“We can presume that the synergistic and cumulative effects of natural vegetation change, livestock grazing, logging, fuelwood harvest, and fire suppression will underlie many of the predicted population declines.”

Id. at 73. Thus, the Forest Service’s own literature has found that songbird populations are widely in decline in Arizona and New Mexico, and that these declines have largely been created by human activities such as the logging activities proposed on Rodeo-Chediski. Nonetheless, the Forest Service fails to provide the detailed and quantified population information for songbird MIS—including pygmy nuthatch and yellow-bellied sapsucker—as required by NFMA.

Fully and properly considering MIS population numbers and trend is also especially important in a post-fire situation, as some species may have suffered population declines. For example, the Northern goshawk was already shown to be suffering population declines before the fires, and presumably has suffered some adverse consequences as a result of the fire. Yet the DEIS provides no reference to AZGF study of this imperiled raptor, nor does it even attempt to address population number and trends.

XV. THE RECENT 9TH CIRCUIT DECISION INVALIDATING THE NORTHERN GOSHAWK STANDARDS AND GUIDELINES MUST BE ADDRESSED IN THE FEIS, AS THESE S & G’S GUIDE MANAGEMENT IN THE PONDEROSA PINE HABITAT WHICH WILL BE LOGGED UNDER THE PROPOSED ACTION

It is not acceptable in this time of limited budgets that the Forest Service continues to plan timber sales which result in a net loss to the U.S. Treasury. In addition, the economic analysis in the DEIS is clearly flawed, as it does not consider all expenses (e.g. road building) or the economic benefit of naturally recovering forests.

XVII. CONCLUSION

The Center for Biological Diversity believes the draft Environmental Impact Statement for the Rodeo-Chediski salvage sales is fundamentally flawed. Impacts to soils, wildlife, fire risk and other considerations are not adequately addressed. The Forest Service has failed to analyze a reasonable range of alternatives, unlawfully restricting its analysis to nearly identical courses of action which will exclusively log large trees over tens of thousands of acres. We urge the Forest Service to prepare a new DEIS which considers a full range of alternatives, and which fully and honestly addresses the best available science concerning the many adverse impacts of post-fire salvage logging.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Segee', with a stylized flourish at the end.

Brian Segee
Southwest Public Lands Director
Center for Biological Diversity



DEIS COM, LTR #015



December 1, 2003

Not timely
J.E.H. [Signature]

Elaine J. Zieroth
Forest Supervisor
Apache-Sitgreaves National Forests
PO Box 640
Springerville, AZ 85938

Re: Draft Environmental Impact Statement Rodeo-Chediski Fire Salvage Project

Dear Ms. Zieroth:

Please accept the following comments on behalf of the Sierra Club's Grand Canyon Chapter and our more than 12,000 members in Arizona and the Southwest Forest Alliance. The Sierra Club is a nonprofit organization dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Southwest Forest Alliance is a Flagstaff-based forest advocacy group with over 60 member organizations that since 1994 has focused on developing a scientifically based vision for restoring degraded forest ecosystems and building public support for this vision.

We are taking this opportunity to express our position and concerns with this project per the National Environmental Policy Act (NEPA). We have made every effort to provide meaningful and specific comments relative to the proposed action.

Overall, we do not think the **Draft Environmental Impact Statement Rodeo-Chediski Fire Salvage Project** (DEIS) adequately addresses the full range of reasonable alternatives nor does it adequately address the impact of these alternatives including the cumulative impact. The DEIS inappropriately exaggerates the beneficial impacts of salvage logging both ecologically and economically. The economic benefits are questionable, the ecological benefits are not substantiated, and both economic and ecological concerns can better be addressed via restoration. We believe that implementing post-fire salvage logging across this large of an area will have both long and short-term detrimental environmental impacts and that the proposed actions will result in a net loss to the American taxpayers. Because of that and the failure of the Forest Service to include an alternative which includes restoration and research, we can only support **Alternative 1 – No Action**, at this time.

We continue to have concerns about this proposal that we do not believe were adequately addressed in the DEIS. Before focusing on the specific aspects of the DEIS, we want to reiterate

operation could significantly affect the watershed and as such the domestic water supply for the Phoenix-Mesa area. Logging in recently burned areas increases water run-off and speeds up topsoil erosion.

After a fire like this, it is sometimes difficult to determine which trees will survive and which trees will not. Some burned trees could live for another three to ten years and during that time they provide habitat for wildlife, a seed source for the next generation of trees, and can help stabilize the soil. Snags, the standing dead trees, also provide critical wildlife habitat, especially for animals like cavity nesting birds.

Salvage logging and the road building that accompanies it can increase fire danger by leaving the smaller more flammable wood (slash) and increasing human access to the forests. Building additional roads in this already heavily roaded area will be detrimental to the forest, to wildlife, and as we mentioned earlier will expose it to greater fire risk. We again urge you to look at closing any existing roads that are unnecessary in order to limit future fire risks.

In addition to other concerns, salvage logging will cost the taxpayers money. In these times of tight budgets shouldn't the limited dollars available be focused on protecting communities from fire in the wildland-urban interface area, and not on further decimating our forests through salvage operations?

We have no objection to tree removal for public safety purposes, but believe it should be limited to that. Instead of logging these burned areas, we would like to see the Forest Service, its biologists, fire experts, etc. learn from this fire and from the recovery of this area. Instead of planning huge timber sales, the Forest Service should also focus on educating and informing residents about the dangers of living in fire-prone areas and working to protect communities at risk from the fire dangers.

The DEIS did not adequately address a full range of reasonable alternatives.

Per the NEPA the Forest Service is required to rigorously explore and objectively evaluate all reasonable alternatives (40 CFR 1502.14). We do not believe that the Forest Service met the mandates of the NEPA because it summarily dismissed other alternatives without adequately exploring whether or not they could meet the purpose and need of the DEIS (page 29 DEIS). For example, the Forest Service rejects the proposal for a "Conservation and Local Economy" alternative. This proposal could contribute economically to the local community, plus cost less (there would be no need for road construction). It could also provide opportunity for important research on postfire conditions and natural recovery. Likewise another proposal that "focuses on the natural recovery of the burned area while providing for local economies" was dismissed because the Forest Service asserts that it does not meet the purpose and need. We believe the Forest Service inappropriately dismissed both of these from consideration and should have, at a minimum, incorporated some aspect in the various alternatives.

There was also no consideration of an alternative that included action on only a few thousand acres of lands where fuelwood, specialty wood products, and other small sawtimber sales could be implemented. This could meet the proposed purpose and need and be incorporated into a restoration proposal that does not include construction of additional roads.

relative to this project. Roads contribute to erosion and also produce a greater risk of fire due to access and the increased risk of human caused fires. Each action alternative includes construction of between 14.2 and 19.9 miles of additional roads, plus additional construction activities on existing roads – between 221-249 miles.

In the document *Environmental Effects of Postfire Logging: Literature Review and Annotated Bibliography* (January 2000), the Forest Service, citing Megahan, discusses the negative impacts of logging activities and states, "Of these, road building and continued use of roads are probably the biggest potential contributors to postfire erosion, just as they are in green tree stands."¹

The document goes on to indicate that erosion from timber harvesting is 7 times that of undisturbed areas and for landings and roads it is actually 100 times that of undisturbed areas. In addition to the roads, the skid trails are also of enormous concern. Studies indicated that tractor skidding over bare ground creates greatest soil disturbance, as will be the case with these actions.²

According to the US Department of Agriculture, Forest Service figures from 1999, there were 56,010 miles of Forest Service roads in the southwest as of 1998. Surely, consideration of closure for some of these to protect resources and limit erosion is more reasonable. The Forest Service fails to support the assertion that, "All action alternatives would improve watersheds through road maintenance and contour felling of dead trees."

In addition to inappropriately eliminating consideration of road closures, we also believe the Forest Service was negligent in not including some kind of research component in at least one of the alternatives. It instead makes broad assumptions about the benefits of salvage logging (and likewise the detriment of no action). This is contrary to the Forest Service findings in the January 2000 document *Environmental Effects of Postfire Logging: Literature Review and Annotated Bibliography* (hereafter the Annotated Bibliography). The authors conclude:

"We know enough about both logging activity and structural change to recommend caution. Although ground-based logging activity could mitigate for erosion problems under certain conditions, it is more likely that it will either have no effect or produce more sediment than that produced by the fires. More importantly, we do not know how site-specific effects accumulate over watersheds, and this knowledge is essential if forest management is to be linked to aquatic integrity. Operational research at the watershed level that integrates terrestrial and aquatic components is needed to inform management about the risk and opportunities available in the postfire landscape."³

As is evidenced by the number of times that the DEIS lumps together the effects of the action alternatives, there is very little difference among them and in fact they appear to be only slight variations on the same alternative. See page 54, Direct and Indirect Effects Common to Alternatives 2,3,4 and 5 on Soil Resources; page 61 Direct and Indirect Effects Common to Alternatives 2,3,4 and 5 on Hydrologic Resources; page 63 Cumulative Effects Common to Alternatives 2,3,4, and 5; page 86 Effects Common to Alternatives 2,3,4 and 5, Direct and Indirect Effects, Vegetation Composition and Structure; relative to vegetation page 87 Cumulative Effects Common to Alternatives 2,3,4 and 5; and page 108 regarding fire and fuels

Regarding Alternative 2 and the potential for helicopter logging of slopes 40% or greater. There was no discussion of the danger involved in this kind of operation.

The DEIS fails to adequately address the economic impact of the five alternatives.

On page 214 of the DEIS referring to Alternative 1-NoAction, it states, "This alternative would not return any revenue to the United States Treasury." While this is technically accurate, the DEIS fails to note that the other alternatives will result in a net loss to the United State Treasury and ultimately the American taxpayers. Alternative 2 would have a net deficit of \$190,354, Alternative 3 would have a net deficit of \$224,954, Alternative 4 a loss of \$149,654, and Alternative 5 a loss of \$219,754. Because of this, and because this measure is being justified on economic grounds, not ecological, we believe the range of alternatives does not adequately address the proposed need. Given that every alternative results in a net deficit, it is even more important that the Forest Service seriously consider natural recovery in this proposal. Intervention can actually delay recovery by promoting more soil erosion and compaction and more roads and the associated problems. Restoration activities such as eliminating roads, hand thinning of small trees, and helping to address erosion can provide jobs and does not need to be an enormous drain on the taxpayers.

The Forest Service looks only at the potential short-term economic gain from salvaging the timber rather than at the long-term potential economic benefits of the smaller wood products industry and restoration. The positive economic impacts of salvage logging are questionable. In research related to the salvage timber sale for the Biscuit Fire, ECONorthwest found that it would cost \$400 for every \$300 in revenue and result in a net loss to the taxpayers. We believe these findings are not inconsistent with this proposal.

The DEIS fails to examine the opportunity for research or adaptive management regarding postfire conditions.

The DEIS notes that **Alternative 1 – No Action**, would provide an opportunity for a control to study the differences in natural recovery versus other salvage operations, yet there is no real analysis of this opportunity and what it could provide. In the Annotated Bibliography the Forest Service acknowledges that the "...environmental effects of postfire logging is scanty at best."¹⁹ They find only 21 major studies that examined a wide range of potential effects of postfire salvage logging. They do go on to draw some conclusions based on these studies however.

"These studies support work in unburned watersheds suggesting that postfire logging associated with road building, conducted with ground-based log retrieval systems, or undertaken in stands having steep slopes and sensitive soils likely will have the greatest potential for exacerbating the erosional problems typically observed in burned watersheds."²⁰

In addition to recognizing the need for additional research, the same bibliography recognizes the need for looking at adaptive management. It states:

"Thus foraging capacity and cover value for wildlife, such as large ungulates like elk, has declined in the short term in respect to pre-fire conditions. In the long term, however, depending on the rate of understory and midstory re-establishment, these areas should provide suitable food resource areas for many species of wildlife, including large ungulates, and may ultimately increase forage capacity in comparison to pre-fire conditions."¹⁵

It goes on to say:

"Although short-term forage capacity and cover values for elk and similarly deer have been adversely affected in the high intensity burn areas, it is anticipated that forage resources may increase in the short term in the moderate and low intensity burn areas, and should ultimately increase over time in the high intensity areas as well."¹⁶

Of course, to a great degree, this will depend on what is done relative to livestock grazing, an issue not addressed in this DEIS. Failure to address livestock grazing makes it impossible to accurately assess the cumulative and long-term impacts of the proposed alternatives. We believe this should also be addressed in the Final EIS.

On page 219 of the DEIS, it asserts that Alternative 1 would be "less favorable for antelope compared to action alternatives..." It goes on to say that this is because natural recovery would take longer if the small dead trees were not removed. The DEIS provides no back up for this assertion and there is plenty of evidence to the contrary (See Game and Fish Document).¹⁷ In fact several researchers have indicated that postfire salvage logging slows down the natural recovery and that "... limiting human effects will best help ecosystems."¹⁸

The DEIS fails to adequately consider the environmental and economic impacts of the transportation system.

Again, we must raise the issue that no actual road closures were considered in any of the alternatives, despite the strong scientific basis for doing so to protect against erosion and the strong concerns expressed about erosion relative to this project. There is also no real consideration of the impact of the construction of temporary roads on wildlife and the possible introduction of additional exotic plant species via the construction activities. Each action alternative includes construction of between 14.2 and 19.9 miles of additional roads, including between 30 and 40 new segments, plus additional construction activities on existing roads – between 221-249 miles. The construction of nearly 20 miles of temporary roads and then the proper closure of those roads comes at enormous costs. Construction on existing roads is also costly. There are costs associated with road closures, but they tend to be short term and limited versus the ongoing cost of keeping this enormous transportation system open. As the DEIS points out, there are currently approximately 530 miles of Forest Service roads in the project area alone, so closure of some of these roads is unlikely to cause undue hardship, especially where there is redundancy. The DEIS fails to examine this option.

¹⁵Arizona Game and Fish Department, 2002, *A Briefing on the Effects of The Rodeo-Chediski Fire on Wildlife and Wildlife Habitats.*

¹⁷ Ibid.

The DEIS fails to adequately assess the impact of the postfire salvage logging and the associated erosion on soils.

We question the assertion on page 52 of the DEIS that the No Action alternative would produce the greatest amount of soil erosion. According to numerous studies, soils are quite vulnerable to erosion and compaction in burned areas and "... therefore, post-burn management activities that accelerate erosion or create soil compaction must be prohibited."⁹ Logging of sensitive areas is often associated with accelerated soil erosion and compaction¹⁰. Most of these studies specifically recommend against postfire salvage logging in severely burned areas. The destruction of vegetation associated with the logging and change in the associated microclimate can hinder the natural recovery and the stabilization of the soil.

The DEIS fails to adequately address the impact of post-fire salvage logging on vegetation.

On pages 76-91, the DEIS discusses vegetation, but does not address the possible and likely negative impact postfire salvage logging will have relative to the introduction of exotic species and noxious weeds. The DEIS says logging will have no effect on the future composition of forests (page xiii), but what about the opportunity this provides for exotic plant species? In addition to the other detrimental effects of salvage logging, it can also promote the introduction of noxious weeds through additional soil disturbance via the heavy equipment that is used. In a 1994 paper that looked at the impacts of salvage logging on ponderosa pine, Timothy Sexton found an increase in exotic species in areas that have undergone salvage logging.¹¹ Exotic and invasive plants certainly affect forest composition. Sexton also found decreased canopy cover and reduced overall plant species richness. Again, it appears that logging does indeed affect plant composition.

The DEIS also fails to consider the more subtle impacts that salvage logging can have on vegetation. Standing trees and the shade they provide affect microclimates. The soil is cooler in this shade and it slows the heating of the surface. This can impact what plant species develop and thrive over time.¹²

The DEIS fails to adequately assess the impact of the postfire salvage logging on air quality.

The DEIS examines the impact of postfire salvage logging on air quality on pages 113-120. On page 119 it states that the emissions from the logging trucks and other equipment are insignificant. Dust created by as much as 1000 trips per day on a particular road (page 201 DEIS), even with watering for mitigation, will be significant. The conditions are so dry in Arizona

⁹Beschta et al., 1995.

¹⁰Marston, R.S. and D.H. Haire, 1990. *Runoff and soil loss following the 1988 Yellowstone fires*. Great Plains-Rock Mountain Geographic Journal 19(1):1-8.

¹¹Sexton, Timothy O. 1994. *Ecological effects of post-wildfire salvage-logging on vegetation diversity, biomass, and growth and survival of Pinus ponderosa and Purshia tridentata*. Corvallis, OR: Oregon State University, Department of Rangeland Resources.

that it takes little time for roads to dry and dust to fly. A greater concern, however, is the emissions from the primarily diesel engines, few of which, if any, will be newer and cleaner burning engines. Besides, low sulfur diesel is still not available in Arizona, so they will be burning the same dirty fuel.

Even a modern diesel engine, one diesel bus, puts out as much particulate pollution as 30 automobiles (Maricopa Association of Governments, 2003). Most diesel pollution comes from diesel-powered vehicles, in particular large trucks and buses. There are numerous studies that indicate a significantly higher cancer risk from exposure to diesel exhaust. According to the California Air Resources Board scientific review panel, diesel exhaust contains over 40 substances that are listed by the Environmental Protection Agency as hazardous air pollutants, fifteen of which are proven or probable carcinogens. These include arsenic, benzene and formaldehyde, among others. There are 1510 excess cancers in the Phoenix area alone due to diesel exhaust.¹³

A study released in November 1999 from California titled the *Multiple Air Toxics Exposure Study II* revealed that the average cancer risk in the southern California area from carcinogenic air pollutants, excluding diesel particulates, has a regional average of 420 in a million. When diesel particulates are included, the cancer risk averages 1400 in a million. The study found that diesel soot accounted for 71% of the cancer risk in that area. So, how can the emissions from these vehicles be considered insignificant?

Particulate matter (PM) or soot is also a serious health concern relative to diesel exhaust. Although heavy-duty vehicles make up only 2 percent of all vehicles on the road, they are responsible for nearly two-thirds of all soot emitted by all on-road vehicles. The release of soot occurs with diesel engines because of the high sulfur content in diesel fuel, poor refinement processes, and incomplete combustion of fuel. A number of adverse long-term noncancer effects have also been associated with exposure to diesel exhaust, including increased chance of chronic bronchitis and reduction in lung function. Based on available scientific information, levels of diesel exhaust exposure below which there are no carcinogenic effects have not been identified. A number of adverse short-term effects have also been associated with exposures to diesel exhaust, including decrease in lung function, increased cough, labored breathing, chest tightness, and susceptibility to infection.¹⁴

We also question the assertion that Alternative 1 will create the greatest emissions over the long-term (page 118). The amount of slash created by salvage logging, plus the emissions from logging trucks and associated off-road equipment, plus the dust kicked up by all this activity is significant. We find nothing in the DEIS that backs up this assertion.

The DEIS fails to adequately consider the impacts of the alternatives on wildlife.

On pages 138-141, the DEIS asserts that Alternative 1-No Action will provide less forage for big game than the action alternatives. This is contrary to findings by the Arizona Game and Fish Department. In *A Briefing on the Effects of the Rodeo-Chediski Fire on Wildlife and Wildlife Habitats* by the Arizona Game and Fish Department, it states:

Alternatives 2,3,4 and 5 Direct and Indirect Effects; plus there are many more. The sections where the differences are highlighted are quite limited.

The DEIS fails to adequately address and inappropriately dismisses relevant scientific research regarding the ecological impacts of post-fire salvage logging.

In the report *Wildfire and Salvage Logging: Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments on Federal Lands in the West* authored by Robert L. Beschta et al. (hereafter the Beschta report), it states "There is no ecological need for immediate intervention on the post-fire landscape."⁴

It goes on to say, "Fires are an inherent part of the disturbance and recovery patterns to which native species have adapted."⁵ It further states, "Fires reset temporal patterns and processes that, if allowed to proceed undisturbed by additional human impact, provide dynamic and biologically critical contributions to ecosystems over long time frames."⁶

Rather than thoroughly examine the Beschta Report in the DEIS or acknowledge its import, the Forest Service seeks every opportunity to justify post-fire salvage logging based on promotion of the "reburn hypothesis." This is contrary to the Forest Service findings in the Annotated Bibliography in which it cites Everett (1995) where he concurs with Beschta regarding the lack of available information to support the reburn hypothesis and questioning that salvage logging results in less damage than a typical green tree harvest.⁷ The DEIS itself even states that "The possibility of a reburn in areas burned at moderate and high severity levels for 10 years is low." (Page 97) Additionally, the Annotated Bibliography stated, "Following Beschta and others (1995) and Everett (1995), we found no studies documenting a reduction in fire intensity in a stand that had previously burned and then been logged."⁸

The Beschta Report not only questions the ecological need for salvage logging, but it also specifically recommends against salvage logging in severely burned areas and those with fragile soils – this includes much of the project area. The Beschta Report also goes on to make specific recommendations should any postfire salvage be considered. The report states that salvage logging must:

- Leave at least 50% of standing dead trees in each diameter class.
- Leave all trees greater than 20 inches dbh or older than 150 years.
- Generally, leave all live trees.

The report also recommends against the use of tractors and skidders, because of their impact on soils (erosion and compaction), and it recommends that no new roads be constructed, plus that an evaluation and closure of existing roads be considered.

⁴ Beschta, Robert L., et al., 1995. *Wildfire and Salvage Logging: Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments on Federal Lands in the West*, 14:1011-1016.

"Finally, we believe that like most practices, postfire logging is certain to have a wide variety of effects, from subtle to significant, depending on where the site lies in relation to other postfire sites of various ages, site characteristics, logging methods, and intensity of fire. Even though additional research will be necessary to more completely understand the mechanisms behind the various effects of postfire logging, there is no substitute for the practice of adaptive management, particularly if it is undertaken with unlogged controls, replicated units, and response (monitoring) variables that can be measured with good precision."²¹

Conclusion

The DEIS does not adequately address the full range of reasonable alternatives nor does it adequately address the impact of these alternatives, including the cumulative impact. It fails to adequately address the impact on wildlife and vegetation, plus the DEIS inappropriately dismisses important scientific literature. It also does not include any opportunity for or real consideration of research or adaptive management. Because we believe the impacts of this proposed project are environmentally damaging and are inadequate economically, not to mention short-sighted, we must support **Alternative 1 – No Action**. It provides the most environmental protection at the least cost.

Please keep us informed of any future documents, decisions, meetings, etc relative to this matter and send us the Final Environmental Impact Statement when it is available. Thank you.

Sincerely,



Sandy Bahr
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Dec. 8, 2003

Received 12/15/03
Deadline for submitting
comments extended for
two weeks. Reason
was timely. Jett.

Dear Dr. Witzeman, MD.

Your Oct. 21 request for a hard
copy of the Rodeo-Chediski DEIS
was discovered this morning. It
had been misdirected to the Forest
Planner's desk and he has been
on an extended leave of absence
for health reasons.

My sincere apologies for the
delay in sending the DEIS
to you.

Jimmy E. Hobbets
ID Team Leader
Rodeo-Chediski Fire Salvage Project
Apache-Sitgreaves National Forests

Page 1

Date 12-11-03

From Bob Witzeman, Cons. Chair, Maricopa Audubon Soc.
4619 E. Arcadia Lane, Phoenix AZ 85018

To: Elaine J. Zieroth, Forest Sup. A/SNF, PO Box 640
Springerville AZ 85938

Dear Sirs/Madams:

Thank you for mailing me your DEIS on the
Rodeo Chediski Fire even though we requested it
Oct 31 and did not receive it until yesterday



Dec 10th 19 2003. We understand how
mail can be misplaced and we have no
doubts that because of this you will now
accept our comments. You must do so.

We would strongly recommend the No Action
 Alternative as the best way to restore &
 rehabilitate and return ^{the land} to a healthy &
 vigorous ecosystem. For these reasons:

- ① The standing burned trees & the burned trees
 that may fall over the next four to 10 yrs,
 play an important role in forest health.
- ② When these trees fall they provide check-dams.



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Phoenix Audubon Society

and prevent soil erosion. ^{After falling,} They may scatter like jack straws or in a herringbone pattern on hillsides - holding soil in place. Logging them off prevents this soil-conservation function.

- ③ When standing, burned trees remain unlogged they become smorgas boards for wildlife. They also become foraging perches for raptors; as well as avian insectivores such as blue birds, swallows + flycatchers.
- ④ Cavity nesting woodpeckers find the standing dead trees of great value both as food & nesting sources



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- (3) When burned trees fall or ^{cover} litter the forest floor landscape, they provide a most valuable cover for ~~the~~ wildlife, both as nesting sites and as concealment from predators.
- (4) Fallen and standing, dead, burned trees provide shade for sun intolerant species; & prevent moisture losses.
- (5) Fallen trees act as giant sponges conserving moisture & humidity. This allows the creation of an ~~entire~~ moisture and humidity-nurtured ecosystem; vital to the regrowth & renewal of plants, trees & flowers and wildlife.
- (6) Logging off trees removes logs that would



be broken down by molds, fungus, insects, algae to become soil for the next generation of trees. By logging off these sources of topsoil for the next forest generation, the Forest Service is harming the potential for growth of the next generation of trees.

② The value of forbs, grasses + trees growing up beside shaded, moist snags, standing burned trees, + fallen trees is critical. ~~High~~ Harvesting away + logging of such trees destroys the opportunity for a vibrant, healthy, dynamic new generation of trees + meadows.



(10) Open spaces without trees are not harmful. Meadows attract many mammals from voles, mice and deer, to bird species that avoid canopy.

In summary: All of the proposed actions will increase the time for the return of a dynamic forest ecosystem. The NoAction is vital & essential to the return of a ~~healthy~~ healthy ~~ecosystem~~ ~~at the~~ forest ecosystem,

Sincerely

Robert A. Witzeman (Robt A. Witzeman)
Cons. Chair Maricopa A.S.

Word Index

A

Air quality . xvi, xxix, 102, 116, 117, 118, 119, 120, 121, 122, 123, 245

Airshed..... 245

Alluvial..... 75, 169, 177, 245

Amphibians 136, 384

Antelope 132, 135, 143, 144, 192, 226, 383

Aquatic .. 16, 45, 46, 124, 129, 136, 137, 142, 168, 169, 170, 171, 231, 256, 304, 312, 331, 332, 334, 335, 336, 348, 355

Aquifers..... 51, 54, 64

Archaeological sites..... 172, 173

B

BAERii, xxv, 2, 3, 5, 11, 40, 42, 47, 49, 51, 52, 65, 103, 109, 115, 132, 133, 144, 146, 151, 153, 156, 172, 175, 177, 181, 182, 183, 184, 188, 190, 196, 199, 201, 204, 209, 210, 235, 374, 379

Bald eagles126, 137, 330

Basal area..... 245

Baseline . iii, v, xv, 42, 55, 61, 65, 78, 89, 90, 130, 172, 322, 365

Beetle84, 86, 91, 108, 149, 183, 342, 376

Best management practices xxvii, xxviii, 45, 205

Biological Assessment and Evaluation ... xxi, xxiii, 125, 234

Black bear..... 133

BMPs..... i, xiv, xxvii, 30, 40, 66, 204, 205, 210, 245, 301, 322, 361

Breeding season 127, 152, 155, 158, 159, 163, 251, 323, 365

Browse.....xvi, 145, 249

Buffer 27, 28, 45, 46, 49, 50, 150, 154, 160, 217, 315

C

Canopyxxxv, 29, 39, 49, 95, 96, 99, 103, 105, 128, 131, 132, 140, 164, 182, 254, 257, 258, 329, 330, 353, 355, 356, 358

Capable habitat 246

Carbon.....47, 116, 119

Cavity nestingxxxvi, 140, 143, 146, 147, 148, 149, 150, 151, 156, 159, 161, 164, 165, 384

Channelxxiv, 23, 24, 25, 27, 39, 41, 49, 51, 53, 55, 62, 63, 65, 67, 69, 70, 71, 72, 169, 225, 226, 249, 256, 304, 305, 306, 309, 311, 313, 315, 361

Channels xxiv, 25, 30, 46, 49, 51, 53, 62, 63, 69, 74, 168, 169, 204, 225, 251, 252, 255, 256, 302, 306, 309, 311, 313, 318, 336, 338

Chaparral.....246, 345, 346

Chiricahua leopard frogs 137, 162

Clumps 84, 150, 160, 252, 254

Coarse woody debris48, 88, 113, 136, 144, 146, 147, 149, 156, 157, 158, 159, 160, 161, 168, 235, 252

Compaction23, 44, 48, 52, 55, 62, 87, 144, 226, 305, 308, 315, 317, 320

Concentrated Use Areas.....xxvii, 191, 196

Coniferous 141

Rodeo-Chediski DEIS

- Consultationxxv, 1, 13, 127, 151, 172, 173, 228
- Continuity..... 103, 115, 176, 250
- Coveriii, xiv, xvi, xvii, xxiv, xxxv, xxxvi, 4, 5, 14, 15, 30, 39, 40, 41, 46, 47, 48, 49, 52, 53, 54, 55, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 74, 80, 81, 82, 85, 90, 95, 108, 116, 120, 124, 125, 127, 128, 131, 132, 133, 135, 136, 141, 142, 143, 144, 145, 146, 151, 154, 156, 159, 161, 162, 163, 164, 165, 171, 197, 198, 204, 211, 225, 226, 227, 250, 254, 288, 302, 304, 305, 307, 313, 329, 332, 338, 339, 340, 351, 352, 353, 355, 357, 358, 362, 363
- Critical habitat xvii, 247
- Crown closure..... 247
- Crown density 247
- Crown fire 96, 247
- Cumulative effects 40, 55, 65, 68, 69, 71, 72, 76, 77, 88, 90, 91, 92, 111, 115, 121, 122, 123, 143, 145, 147, 148, 149, 150, 151, 153, 155, 156, 157, 158, 160, 161, 162, 163, 164, 168, 171, 176, 177, 183, 184, 186, 195, 197, 198, 203, 209, 210, 219, 221, 223, 235, 247, 261
- D**
- Dead and down24, 28, 47, 100, 103, 120, 151, 306, 353, 362
- Deferred maintenance..... 199, 370
- Demographics xxxvi, 212, 213
- Desired future condition.....6, 369
- Direct attack..... 100, 107
- Dispersed recreation 248
- Disturbed sites 307
- Diversity.....x, xvi, 10, 27, 37, 94, 127, 136, 145, 146, 147, 149, 156, 161, 165, 183, 211, 318, 336, 351, 352
- Duff94, 105, 108, 109, 132, 250, 251, 253
- Dust abatement17, 26, 122, 203, 207
- E**
- Elkxxxvi, 132, 133, 134, 135, 144, 163, 192, 246, 351, 352, 384
- Emissions xvi, xxxv, 119, 121, 122, 123, 197
- Endangered species9, 12, 126, 136, 247
- Ephemeral xxiv, 25, 49, 50, 52, 53, 63, 69, 129, 168, 169, 174, 181, 302, 304, 309, 311, 347
- Equilibrium..... 49, 63, 225
- Equivalent Disturbed Area vi, 34, 40, 41, 56, 57, 58, 59, 60, 61, 65
- Erosion ... iii, vi, 15, 45, 47, 52, 62, 67, 68, 70, 71, 225, 248, 306, 307, 308, 311, 380
- Esthetic 103
- Ethnographic172, 173, 174
- F**
- Fertility..... 249
- Fine fuels 249
- Fire intensity99, 133, 134, 249, 263
- Fisheries x, xxiii, xxxii, 124, 142, 168, 169, 170, 171, 231, 232, 304
- Flame lengths xxxv, 95, 99, 107, 112, 113, 114, 115
- Flooding ... xxv, xxxvi, 4, 5, 6, 39, 41, 48, 49, 50, 65, 72, 168, 169, 175, 176, 193, 197, 225

Rodeo-Chediski DEIS

| | | |
|--------------------------|--|--|
| Floodplains |44, 49, 53, 62, 63, 69, 169, 313 | 168, 169, 170, 192, 193, 200, 208, 220, 226, 227, 232, 246, 247, 250, 251, 252, 256, 257, 261, 304, 323, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 351, 352, 353, 354, 355, 357, 358, 360, 362, 364, 365, 373 |
| Forage | x, xvi, xvii, xxi, xxxvi, 30, 37, 48, 66, 102, 103, 124, 128, 132, 133, 135, 143, 144, 145, 146, 147, 151, 154, 163, 197, 226, 285, 328, 343, 351, 352, 353, 362 | |
| Forbs | xvii, xxv, 9, 82, 83, 95, 99, 112, 132, 133, 136, 143, 144, 145, 156, 160, 161, 164, 185, 250, 254, 258 | Habitat Quality Index xxxv, 124, 134, 233 |
| Forest Development Roads | 201 | Herbaceous xv, 95, 102, 103, 110, 112, 132, 143, 335, 354 |
| Forest health | 220 | Heritage x, xxiv, xxxiii, xxxiv, 26, 30, 37, 172, 173, 226, 227, 235, 240, 251, 367, 377 |
| Fragments | 248 | Humus 248, 253 |
| Fuel laddering | 250 | Hydrologic resources xiv, xxxi, xxxiii, xxxiv, 5, 30, 39, 49, 53, 63, 67, 69, 70, 76, 88, 197, 225, 226, 227, 379 |
| Fuel loading |94, 107, 250 | I |
| Fuel Model |95, 96, 107, 108, 250 | Infiltration4, 39, 41, 43, 46, 47, 48, 49, 52, 53, 54, 55, 62, 64, 65, 66, 72, 143, 145, 159, 160, 162, 171, 225, 226, 251, 313 |
| Fuels | ... x, xi, xv, xxxii, xxxiii, xxxiv, 29, 37, 88, 94, 113, 121, 122, 225, 227, 231, 234, 249, 275, 276, 277, 278, 279, 280, 281, 283, 284, 285, 286, 287, 294, 295, 296, 297, 299, 374, 375, 376 | Initial attack..... 107, 114, 231 |
| G | | Insect infestation 100 |
| Grazing | iii, xxxvi, 9, 44, 65, 66, 81, 94, 129, 145, 153, 156, 158, 164, 249, 263, 374, 379 | Intermittent 129, 142, 168, 201, 252, 302, 304, 309 |
| Ground cover | xiv, 39, 40, 41, 48, 52, 53, 54, 55, 62, 63, 66, 67, 68, 69, 70, 71, 72, 74, 132, 225, 227 | Invertebrates..... 129, 136, 169, 336 |
| H | | Irretrievable xxxiii, 227, 252 |
| Habitat | iii, iv, v, x, xiv, xv, xvi, xviii, xix, xxii, xxiii, xxix, xxxvi, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18, 19, 20, 21, 28, 29, 30, 31, 36, 37, 49, 67, 79, 81, 84, 85, 86, 89, 90, 92, 93, 103, 112, 118, 124, 125, 126, 127, 128, 129, 130, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, | Irreversible xxxiii, 227, 252 |
| | | Issues i, ii, iii, v, xiii, xxix, 1, 10, 11, 13, 14, 15, 18, 22, 33, 199, 211, 220, 235, 251, 261, 262, 263, 383 |
| | | J |
| | | K |
| | | Key habitat 252, 327, 351 |

Rodeo-Chediski DEIS

L

Litter4, 46, 47, 48, 74, 83, 94, 95,
105, 109, 116, 132, 182, 183, 248, 250,
253, 258, 313

Livestock9, 51, 66, 94, 128, 129,
145, 153, 156, 158, 164, 249

Lopping..... 250

Lotic 329, 334, 335, 340

M

Management indicator species iii, xxi,
xxxv, 125, 126, 127, 141, 142, 164

Meadows 129, 140, 142, 204, 205, 302,
304, 308, 329, 345, 347, 348, 349

Mexican spotted owls 28, 126, 155, 323

Micro-sites..... xvi, 85, 136, 145

Mitigation measuresxxv, xxxv, 6, 17,
19, 20, 21, 23, 28, 122, 152, 158, 162,
176, 195, 202, 203, 204, 208, 210, 305

Mixed coniferxxii, xxiii, 8, 16, 28, 29,
80, 81, 82, 92, 104, 120, 127, 129, 136,
137, 138, 139, 140, 141, 149, 153, 158,
183, 257, 353, 354, 357, 383

Monitoring requirements..... 10, 173

Morphology30, 49, 63, 73, 74, 169,
338, 361

Mortalityxiv, 3, 4, 65, 79, 84, 85, 86,
99, 103, 104, 108, 116, 132, 152, 159,
181, 323

Most Similar Neighbor 78, 124

Mountain lion 133, 136

Mule deer 133, 134

N

Nitrogen47, 116, 119

Non-attainment areas..... xvi, 116, 118

Nonpoint source pollution 312

Northern goshawks 28, 158, 159, 160,
161, 324

Nutrients .. iii, xiv, xxiv, 14, 40, 46, 47,
48, 50, 52, 53, 55, 62, 67, 69, 70, 89, 144,
146, 147, 149, 153, 157, 158, 169, 225,
246, 248, 249, 257

O

Old growthxv, xxxv, 85, 88, 89, 96,
126, 330, 356, 358, 374

Openingsxxi, 182, 352

Organic5, 39, 44, 46, 47, 48, 50, 52,
53, 67, 74, 83, 89, 109, 119, 171, 175,
248, 250, 251, 253, 254, 256, 338

P

Particulate..... xvi, 116, 119, 120, 122, 255

Peak flowsvi, 34

Per capita 217

Perennial streams xxiv, 50, 124, 129,
142, 154, 162, 168, 347

Pikeminnow xix, 336

Pit-run materials xxviii, 205

Post-Fledgling Family Areas iv, 19

Prehistoric sites 174, 175

Prescribed fire..... 13, 48, 52, 249, 250, 255,
258, 259, 375, 383

Productivity 44, 45, 47, 48, 52, 62, 65,
70, 71, 85, 102, 116, 143, 159, 160, 225,
227, 254, 304, 308, 312, 313, 318, 320,
361

Pygmy nuthatch 141

Q

R

Re-burn 100, 101, 110, 128, 156

Recovery Plan8, 80, 127, 138, 153,
233, 323, 382, 384

Recreation Opportunity Spectrumxxv,
187, 188, 255, 256

Regeneration xv, 30, 45, 83, 84, 89,
109, 112, 116, 129, 152

Retardant..... 50

Riparianxxiv, 9, 44, 45, 46, 49, 51, 54,
55, 64, 74, 79, 124, 129, 141, 142, 162,
168, 169, 181, 192, 193, 199, 226, 235,
256, 302, 304, 305, 328, 329, 330, 331,
332, 334, 335, 338, 340, 342, 344, 345,
349, 354, 355, 357, 358, 359, 360, 377,
384

Roaded..... 187, 188, 189, 256

Roadless.....xxv, 190, 192, 195

Runoff ... xiv, xxxvi, 4, 5, 25, 39, 41,
42, 43, 45, 46, 47, 48, 49, 50, 51, 54, 55,
62, 63, 64, 65, 66, 68, 69, 70, 71, 72, 145,
162, 171, 201, 203, 204, 205, 225, 226,
251, 254, 288, 305, 307, 311

Rural..... 6, 101, 211, 213, 215, 216, 255

S

Saplings 103

Scarifying23, 27, 306, 308, 322

Scenic integrityxxxvi, 179, 180, 181,
182, 185, 197

Scopingii, iii, xxix, 11, 13, 14, 212

Scouringxxiv, 49, 169

Sedimentationiii, xxiv, xxvii, 5, 14, 39,
48, 54, 63, 65, 162, 163, 169, 170, 203,
204, 205, 226, 227, 303, 304, 305, 307,
308

Seedlings 115, 254

Semi-primitive 187, 189

Sensitive speciesxvii, xxix, xxxv, 126,
128, 136, 140, 150, 232, 245, 327, 364,
365

Seral..... 256

Shrubsxvii, xxv, 95, 100, 101, 105,
110, 112, 114, 115, 132, 133, 143, 144,
145, 156, 183, 185, 246, 247, 254, 328,
329, 331, 338, 360

Skidding xiv, xxviii, 23, 24, 25, 66,
89, 203, 208, 303, 305, 306, 308, 309,
310, 311, 317, 320

Slash xiv, xv, xvi, xxiv, 6, 7, 13, 16,
17, 23, 24, 25, 26, 27, 41, 42, 48, 52, 53,
54, 55, 62, 63, 64, 65, 66, 67, 68, 69, 70,
71, 72, 87, 89, 95, 97, 103, 107, 112, 114,
115, 143, 145, 152, 154, 159, 162, 171,
176, 179, 185, 189, 225, 227, 249, 276,
278, 279, 282, 283, 284, 285, 286, 287,
288, 303, 306, 307, 308, 309, 311, 312,
315, 322

Snag recruitment 147, 148, 149, 226

Snag retentioniv, 20, 65, 71, 92, 93,
150, 152, 158

Soil productivity..... 225

Squirrels141, 164, 353

Streamside management zones . xxiv, 24,
304, 305, 306, 309, 310, 311, 312, 320

Succession 257, 374

Surface fire96, 108, 247

T

Temporary road .. i, xxv, xxviii, xxxvi,
7, 8, 16, 17, 19, 20, 21, 22, 25, 30, 177,
184, 195, 204, 208, 209, 307, 309

Terrestrial ecosystem..... 18, 39, 73, 302

Rodeo-Chediski DEIS

Threatened and endangered 9, 12, 125,
126, 136, 193, 228

Threshold41, 138, 139

Traditional cultural property..... 258

Trailsxxv, xxvii, 23, 25, 51, 66, 90,
112, 146, 157, 183, 185, 187, 188, 189,
192, 193, 195, 196, 197, 200, 203, 302,
305, 307, 308, 309, 311, 317

Turkeyxxii, 56, 135, 265, 288, 291, 355

U

Under burning 258

Ungulate83, 143

V

Vegetative structural stages..... xxxv, 82

Visual Quality Objectives178, 180, 258

Volcanics 74

W

Wilderness xxv, 117, 192, 232, 252

Wildfireii, xvi, xxxv, 4, 11, 47, 48, 88,
99, 100, 101, 102, 104, 111, 114, 115,
120, 121, 122, 123, 169, 175, 176, 249,
383

Wildland30, 66, 95, 96, 97, 101, 102,
113, 116, 118, 121, 184, 185, 245, 249,
250, 259

X

Xeric 81

Y

Yarding iii, i, iv, v, viii, xiv, xxvi, 7,
15, 18, 20, 21, 32, 63, 65, 66, 87, 92, 177,
185, 198, 228, 303

Z