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Department of
Agriculture

Forest
Service

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File Code: 1570-1

Appeal No.: 07-05-00-0020-A215

Date: March 20, 2007

Mr. Michael Graf
Attorney
Sierra Nevada Forest Protection Campaign
915-20th Street
Sacramento, CA 95814

CERTIFIED - RETURN
RECEIPT REQUESTED

Dear Mr. Graf:

On February 5, 2007, you filed a Notice of Appeal (NOA) on behalf of the Sierra Nevada Forest Protection Campaign, and the Sierra Club Environmental Law Program pursuant to 36 CFR 215 of the Sierra National Forest Supervisor's Record of Decision (ROD) approving Alternative 3, of the Kings River Project Final Environmental Impact Statement (FEIS) that was signed on December 20, 2006.

I have reviewed the entire appeal record, including your written Notice of Appeal (NOA), the ROD, FEIS, and supporting documentation. I have weighed the recommendation from the Appeal Reviewing Officer and incorporated it into this decision. A copy of the Appeal Reviewing Officer's recommendation is enclosed. This letter constitutes my decision on the appeal and on the specific relief requested.

FOREST ACTION BEING APPEALED

Alternative 3, Reduction of Tree Harvest Size Alternative for the Kings River project implements an uneven-aged silvicultural strategy that limits removal of trees to 30" in diameter and smaller. Actions include: thinning, prescribed burning, site preparation, planning, and herbicide use to control competing vegetation in plantations and for noxious weed eradication.

The decision also adopts all of the demonstratively effective management requirements and design measures described in Chapter 2 of the Final EIS. In addition, monitoring is included as an integral part of this project and will be carried out as described in Appendix B of the FEIS.

The Forest Supervisor chose to minimize the direct impacts of Kings River treatments on fisher by directing a staged approach for entering management units with better quality fisher habitat to ensure that there is the maximum opportunity to learn from the in-progress Conservation Biology Institute's (CBI) Southern Sierra Nevada Fisher Assessment and to provide additional time for the Pacific Southwest Research Station to gather baseline data for the fisher study.



The Selected Alternative includes approximately 13,700 acres of treatment of the following types:

- More than 9,000 acres of Wildland Urban Interface zones will be treated.
- Approximately 1,865 acres of Defensible Fuel Profile zones will be created.
- Over 9,000 acres of prescribed burn treatments will be implemented.
- Just under 6,000 acres will be thinned to implement the uneven-aged silvicultural strategy.
- Over 2,000 acres of thinning treatments for the California Spotted Owl study will be implemented.

APPEAL REVIEWING OFFICER'S FINDINGS

The Appeal Reviewing Officer (ARO), Scott Armentrout, found that the Forest Supervisor's decision was appropriate and complied with existing laws, policies, and regulations. The Forest Supervisor provided information supporting the logic and rationale in selecting Alternative 3 and described the included management activities. Documentation provided by the Forest Supervisor demonstrated compliance with the Sierra National Forest Land and Resource Management Plan as amended by the Sierra Nevada Forest Plan Amendment Record of Decision (February, 2004) and applicable laws, regulations and policies.

The ARO found the purpose and need for the projects were clear. The Forest Supervisor was responsive to public concerns.

He recommended affirmation of the Forest Supervisor's decision.

DECISION

I agree with the ARO's analysis as presented in the recommendation letter. All appeal issues raised have been considered.

In regards to the specific concerns regarding the Pacific fisher, I believe that the Forest Supervisor's decision to direct a staged approach for entering management units with better quality fisher habitat to ensure that there is the maximum opportunity to learn from the in-progress Conservation Biology Institute's (CBI) Southern Sierra Nevada Fisher Assessment and to provide additional time for the Pacific Southwest Research Station to gather baseline data for the fisher study (ROD, pg. 2) helps address many of the concerns about the fisher. As noted in the ROD (pg. 13), if new information surfaces from the work performed by the CBI and others, it will be considered to determine if modifications to the project are necessary.

I affirm with instructions, the Forest Supervisor's decision to implement Alternative 3 as described in the Record of Decision. I ask that the Forest Supervisor revise the "Fisher Rest Site Retention Guide and Score Card" so that the guide reflects the 30-inch tree diameter identified in the Selected Alternative. The project may be implemented on, but not before, the 15th business day following the date of this letter (36 CFR 215.9(b)).

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

Sincerely,

/s/ Beth G. Pendleton

BETH G. PENDLETON
Deputy Regional Forester
Appeal Deciding Officer

Enclosure

cc: Edward Cole
Karen L Burmark
Gary R Chase



File Code: 1570-1

Date: March 19, 2007

Subject: Kings River Project (KRP)
Appeal No. 07-05-00-0020-A215 (Michael Graf)
Sierra National Forest

To: Appeal Deciding Officer

I am the designated Appeal Reviewing Officer for this appeal. This is my recommendation on disposition of the appeal filed by Michael Graf, on behalf of the Sierra Nevada Forest Protection Campaign (SNFPC) and the Sierra Club Environmental Law Program, appealing the Sierra National Forest Supervisor Edward C. Cole's Record of Decision (ROD) for the Kings River Project Final Environmental Impact Statement (FEIS) signed December 20, 2006.

DECISION BEING APPEALED

The Kings River Project (KRP) is an administrative study developed from the consolidation of the Kings River Administrative Study and ongoing Pacific Southwest Research Station studies. It resulted from a memorandum of understanding signed in 2002 by the Station Director and the Regional Forester. The purpose of the Kings River Project (KRP) is to restore historic pre-1850 forest conditions across a large landscape, while protecting sensitive wildlife species and other important resources. As an administrative study, its goals are achieved by implementing forest treatment projects, research and monitoring. To fulfill the purpose and goals of the Kings River Project, the Forest Supervisor determined there is a need to:

1. **Research the uneven-aged silvicultural strategy and prescribed fire:** to answer persistent questions about whether uneven-aged forest management, including the reintroduction of fire into the ecosystem through prescribed burning, can maintain long-term viability of California spotted owl and other wildlife populations, improve forest health and develop a sustainable level of productivity. Through discussions with researchers and forest managers, the pre-1850 forest condition was identified as the desired condition, as it was obviously sustainable and fire resilient.
2. **Increase the number of large trees:** to reverse the trend of decrease in numbers of large trees in the Sierra Nevada, as a part of restoring the pre-1850 forest conditions, and to maintain a key component of suitable habitat for many wildlife species such as spotted owl and fisher.
3. **Reduce tree density:** to increase resistance to insect attack, to reduce undesirable fire behavior and the potential for unacceptable impacts from wildfires, and to restore historic forest conditions.



4. **Protect adjacent landowners from wildfire:** by reducing fuel accumulations on federal lands within the Wildland Urban Interface, and creating Defensible Fuel Profile Zones.
5. **Reintroduce fire:** to return and maintain the landscape in a fire condition class which will be acceptably resilient to future fires within the historic range of fire frequency and intensity.
6. **Control noxious and non-native weeds:** to reduce the impacts of the transportation system on forest resources and to provide the necessary access for the vegetation treatments.
7. **Create reforestation groups and control competing vegetation:** to create openings for establishment and growth of shade intolerant tree species, particularly pine and oak, so as to create additional age classes and uneven-aged forest stands; to release tree seedlings in reforestation groups from competing vegetation to reduce the probability of plantation failure.
8. **Improve watershed condition:** to mitigate impacts from past activities and foreseeable disturbances.

The Forest Service analyzed the Proposed Action (Alternative 1) and the No Action (Alternative 2) alternatives in the Draft Environmental Impact Statement (DEIS). In addition, three alternatives were considered but eliminated from detailed study at that time. One of these was the "Reduction of Harvest Tree Size" alternative. In response to comments on the DEIS, the Reduction of Harvest Tree Size Alternative was brought forward and analyzed in detail in the Final Environmental Impact Statement (FEIS) as Alternative 3. Alternative 3, the Reduction in Harvest Tree Size Alternative, was identified as the environmentally preferred alternative, and the Forest Supervisor ultimately selected it for implementation.

APPEAL SUMMARY

The Kings River Project Notice of Intent (NOI) was published in the Federal Register on December 20, 2004. Public meetings, including at least one field trip to the project area, were held on September 14 and December 7, 2004.

The Notice of Availability (NOA) of the DEIS was published in the Federal Register on January 27, 2006. Simultaneously, on January 27, 2006, a public notice in the newspaper of record, the Fresno Bee, advised readers that the DEIS was available for public review and comment for 45 days. Michael Graf, representing the Sierra Nevada Forest Protection Campaign and the Sierra Club Environmental Law Program, submitted timely comments and has eligibility to appeal.

The Final Environmental Impact Statement (FEIS) was placed on the Sierra National Forest web page on October 3, 2006. A public notice, advising of the availability of printed copies of the FEIS as well as the website address, was published in the Fresno Bee and the Federal Register, on October 20, 2006. This public notice invited additional comments for 30 days prior to the decision being made. Comments were submitted by ten groups and individuals by the close of the comment period.

The Record of Decision was signed on December 20, 2006. Legal notice of the decision was published December 20, 2006 in the Fresno Bee and initiated the 45-day appeal period. The current appeal was filed on February 5, 2007 and is timely.

The Forest contacted the appellant on February 23, 2007 to schedule an opportunity to informally resolve some or all of the appeal issues. A meeting was held with the appellant on March 14, 2007, but a resolution of issues was not obtained.

As relief the appellant requests that the Appeal Deciding Officer set aside the Kings River Project FEIS and ROD and remand the project for further public review.

ISSUES AND RESPONSES

Issue 1: The Kings River Project violates NFMA for failing to ensure the viability of the Pacific fisher in the planning area and the Sierra National Forest. (Appeal, pp. 6-28, pp. 50-53)

Response: Population persistence of fisher in the Southern Sierras is threatened by a number of population, habitat and environmental factors (FEIS, pg. 3-164). Many possible reasons may account for the decline in fisher numbers since the 1800s. The dilemma posed by this Project is whether the short-term adverse effects of reducing fuels and initiating the restoration of pre-1850 historical forest conditions will be offset by the benefits, over the next 10 to 20 years, of reducing the risk of stand replacing fires and improving suitable habitat. Inaction may tip the balance towards greater loss of habitat to wildfire, while implementation of the planned treatments may shift a delicate balance of survival by directly affecting habitat quality in a way as yet unknown (ROD, pg. 4).

Technical advice received from the U.S. Fish & Wildlife Service (USFWS) on fisher and numerous other scientific reports, letters and publications (Lamberson, Mazzoni, Zielinski, Jordon, Truex, Purcell and others) were reviewed and incorporated into the analysis between the Draft and Final EIS to assure the most appropriate science was utilized. As an adaptive management project, Kings River provides a field oriented approach to compliment modeling approaches such as Parks and Rojas' (2006) "Modeling Existing and Future Vegetation Characteristics, Wildlife Habitat and Fire Behavior Indices in the Kings River Project Area Under Three Management Scenarios" and Conservation Biology Institute's (CBI) Southern Sierra Nevada Fisher Assessment (ROD, pg. 5).

Analysis of the direct, indirect, and cumulative effects to the fisher are disclosed within the KRP Terrestrial Biological Assessment/Evaluation (KRP, BA/BE) on pages 4, and 43-63 and summarized in the FEIS on pages 3-13, and 3-140 through 3-173. The Forest concluded that the direct, indirect, and cumulative effects of vegetation management activities in the KRP initial eight management units taken together with past, present, and reasonably foreseeable activities on the Forest and across the Southern Sierra Fisher Conservation Area (SSFCA) will not result in a loss of viability for the fisher (FEIS, pg. 3-173).

In support of this project, the USFWS produced a “Review of the Draft Environmental Impact Statement for the Kings River Project, Sierra National Forest, California, for effects on the Fisher and the Yosemite Toad” dated July 27, 2006. In that document the Service recommended that the project be implemented as described in the description of the proposed action (FEIS, Appendix D). While the DEIS reviewed by the USFWS identified trees over 35” as legacies of the historic forest, the selected alternative proceeds cautiously by harvesting trees under 30” in diameter (FEIS, pg. 2-45 and ROD, pg. 1).

Additional design elements to protect high quality fisher den and rest sites and the viability of fisher are built into the project. The implementation of the Fisher Rest Site Retention Guide and Score Card Marking Instructions (Terrestrial BA/BE, Appendix D, pp.111-113) are designed to protect the best habitat components for fisher. The staged approach to implementation (ROD, pg. 13) and an adaptive management plan (FEIS, pp. 2-60 to 2-64), which promotes and relies on scientific analyses guide implementation of the project and allow for research efforts to be conducted in advance of fuels treatment in fisher habitats.

Contention 1. The selected alternative fails to protect high quality resting and denning habitat. (Appeal, pp. 15-16)

Maintenance and enhancement of fisher habitat over time is assessed by comparing short-term quality reductions on a small fraction of the KRP and Southern Sierra Fisher Conservation Area (SSFCA) against longer-term habitat quality improvements and comparing those effects to wildfire, if left untreated. The design and scheduling of vegetation management treatments include numerous specific provisions to minimize short-term effects and improve fisher habitat.

The project design limits the size of management units and disperses treatments over time in order to minimize potential disturbance to animals. Resting as well as denning habitat is favored by retention and recruitment of large trees. The “Fisher and Priority Sites Marking Guide – Kings River Project” will protect and retain important habitat structures and patches of large, dense trees (KRP BA/BE, pg. 43). Harvest limits based upon tree diameter at breast height (dbh) will preserve most potential fisher resting or denning sites. Vegetation management treatments are restricted to trees 30” dbh and smaller to protect and retain these important legacy elements used by fisher; marking guidelines are designed to protect existing large trees (greater than 35” dbh) and enhance the recruitment of medium-sized trees (20-35” dbh). These actions will provide a source for such large structural elements in the future. Further, thinning the smaller trees in these areas will accelerate the rate at which medium sized trees attain classification as ‘large’ (BA/BE p. 41).

Implementation of the project is predicted to increase the number of large trees. Over the last decade, approximately 27,000 acres of resting/denning habitat has actually been recruited on the Sierra National Forest (BA/BE p. 60).

Page 52 of the BA/BE, states that “...the current amount of resting/denning habitat in the Kings River Project area for the initial eight management units is 2.0 percent and 1.1 percent of the total available throughout the Sierra National Forest and the SSFCA, respectively (Table CE2)”. Furthermore, under alternatives 1 and 3, the proportion of suitable habitat composed of

resting/denning habitat is expected to change from 92 percent currently to 96 percent in 10 years and 98 percent in 20 years, assuming no fire occurs (Tables CE2 and CE3). Although the 9,050 acres of suitable fisher resting/denning habitat in the eight vegetation management treatment units would decline by 848 acres (= 9.4 percent of existing resting/denning habitat within those units) immediately following implementation, the habitat is expected to recover in 10 years under Alternative 3. It is important to keep the scale of effects in mind. The 848 acres downgraded to movement/foraging habitat occur across a total of 131,500 acres in the KRP (0.68 percent) and 1,018,000 acres (0.089 percent) of the SSFCA.

The project sets sustainable canopy cover retention levels with a goal of the selected alternative to “develop or maintain 50 percent of the landscape outside of the WUI with canopy density greater than 60 percent”. (FEIS, pg. 3-168). Canopy cover in existing rest/den quality fisher habitat will undergo a small decrease in quality in the course of implementing this project, possibly temporarily reducing the all or part of the treatment units (totaling 848 acres) to no lower than 50 percent. The selected alternative does not implement group selections to avoid creating openings in the canopy. Of the three HUC 6 watersheds used for the project analysis, two remain unchanged following implementation of the project. The other, Lower Dinkey Creek Watershed, loses 1 percent of rest/denning fisher habitat.

No actual den sites are currently known within the King’s River Planning Area. Should dens be located, prescribed burning will be implemented outside the denning season (mid-March to mid-May) to avoid disturbance. The selected alternative also specifically retains oaks, often used for resting or denning, unless they present a hazard to operations

Given these design criteria and controls, it seems reasonable to conclude that temporarily reducing canopy cover to no less than 50 percent on 848 acres over a three-year period of phased implementation will provide adequate protection for existing resting/denning resources and provide for future recruitment of these resources into the forest.

Contention 2. The KRP fails to account for habitat connectivity. (Appeal, pg. 21)

The KRP delineates and specifies design elements to maintain old forest linkages (OFL). Designated OFL protect and maintain strategic areas of the landscape in high quality habitat condition to ensure connectivity of suitable fisher habitat elsewhere in the planning area and the forest (KRP BA/BE, pp. 39-40). The OFL are delineated to facilitate fisher use and movement.

Design of the OFL utilized the female rest site model to emphasize canopy density greater than 60 percent, presence of large trees, and available habitat structural features near water. Given that research has demonstrated a fisher propensity for movement through riparian areas, and that fisher seem to spend most of their time within 100 feet of water courses (KRP BA/BE, pg.42), these 600 foot wide corridors provide not only movement and dispersal, but resting/denning quality habitat as well.

The Kings River Project encompasses 131,500 acres. OFL in the planning area consist of 4,609 acres (3.5 percent of the Project acreage), 1,085 of which occur in the initial eight vegetation

management units scheduled for treatment between 2007 and 2009. Table 11 (KRP BA/BE, pg. 46) documents that all OFL acres will remain suitable following treatment.

Canopy cover will not be reduced to less than 50 percent in resting/denning quality OFL habitat in any event (FEIS, pg. 3-19). Given the rapid rate of canopy cover recovery as documented in the FEIS and BA/BE, this reduction will be very temporary on small dispersed portions of the landscape at any given point in time.

Considering the areas mapped as highest quality reproductive habitat further connected by OFL with high probability of fisher use, habitat connectivity seems to be maintained over the course of project implementation and beyond. In the event of wildfire, it appears that connectivity is likely to be maintained in treated vicinities, which would not be the case without vegetation manipulation.

Contention 3. The KRP Adaptive Management approach does not ensure fisher viability. (Appeal, pg. 23)

The initial eight units will be implemented in a staged approach (ROD, pg. 2). Two units will be implemented in year 1, only one of which provides high quality fisher habitat. A further two units will be treated in year 2, neither of which supports much high quality fisher habitat. Habitat is NOT eliminated in any case. Areas may be temporarily (< 10 years) shifted from resting/denning to foraging and movement. The dispersed nature of the project allows fisher the opportunity to behaviorally limit disturbance effects by moving away from treatment activities.

Staged implementation (with monitoring) of the initial 8 units over a three-year period under Alternative 3 will inform future KRP unit analyses, allowing time and space to adjust management activities (ROD, pg. 2).

The Council on Environmental Quality (CEQ) regulations at 40 CFR 1502.9(c)(1) specify that an agency will supplement an FEIS if “There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”

The Forest Service Handbook (FSH) 1090.15, Chapter 10, Section 18.1 section on environmental analysis provides further guidance on what to do when new information is received subsequent to making a decision. This provides direction that if new information or changed circumstances relating to the environmental impacts of a proposed action come to the attention of the responsible official after a decision has been made and prior to completion of the approved program or project, the responsible official must review the information carefully to determine its importance, and determine whether a correction, supplement, or revision to an environmental document is necessary.

The staged implementation approach selected in ROD further allows for timely incorporation of new scientific information anticipated from PSW studies, the Sierra Nevada Adaptive Management study plan, and CBI Fisher Baseline Assessment for the SSFCA.

The KRP approach is consistent with the tenets of adaptive management, which are to take cautious, well-designed actions, monitor the results, and adjust management as necessary.

Contention 4. KRP cumulative effects to fisher are not adequate. (Appeal, pg. 22)

The Forest reviewed 70 projects that have occurred within the 1,018,000 acre SSFCA, utilizing all available detail with respect to planning, unit layout design, and implementation of these projects to assess the effects to fisher habitat (KRP BA/BE pp. 51-62 and 81-87). The spatial locations of management activities in the KRP area are displayed in Figures 3-2, 3-3, 3-4, and 3-5 (FEIS, pp. 3-8, 3-9, 3-10 and 3-11, respectively).

Further, fire history was reviewed dating back to 1916. The effects of past wildfires on fisher habitat are discussed in the FEIS on page 3-159. The spatial configuration of fires is displayed on FEIS pages 3-161 and 3-162.

The habitat effects of past management actions to the vegetative landscape since the mid-1960's were assessed. An analysis of timber harvest since 1978 was conducted to examine effects to fisher habitat. To impart a spatial component of cumulative effects to the analysis, the Forest analyzed and mapped the presence and distribution of tree plantations across the landscape as a proxy for spatial distribution of the oldest timber harvest units on the Forest (KRP BA/BE pp. 59-60).

The Forest prepared a detection and disturbance response analysis (KRP BA/BE pp. 60-62) to evaluate potential behavioral disturbances of management actions, combining data on projects with fisher survey detections between 1993 and 2005. This analysis examines the latency between the disturbance event and detection of fisher at sampling sites in the disturbance vicinity.

The cumulative effects analysis devised a highly conservative map analysis approach in collaboration with Dr. Bill Zielinski, Dr. Kathy Purcell, and Sierra Nevada Fisher Monitoring Team Leader, Rick Truex. To generate the map and analysis on page 57 of the BA/BE (and FEIS, pg. 3-162), CWHR habitat values were modified to restrict forest types used by fisher, and select those types and classes of the highest value to fisher reproduction.

Page 3-159 of the FEIS evaluates cumulative effects at the SSFCA scale and notes that although more than 60 percent of management activities proposed within the SSFCA since 1992 made determinations of "may affect individuals, but not likely to result in a trend toward federal listing", the scope and scale of those effects was very small in the context of the 1,018,000 acre SSFCA. Generally, any one project influenced less than 0.5 percent of the SSFCA area at a given point in time. By contrast, a single wildfire, the Manter fire on the Sequoia National Forest, burned 6,000 acres of SSFCA suitable fisher habitat in a few short weeks. Effects of vegetation treatment on fire behavior are displayed for the eight initial management units on FEIS pages 3-84 to 3-89.

The forest identified an increase of approximately 27,000 acres of suitable fisher habitat over the past decade (FEIS, pg. 3-166) and concluded that given the analysis above, "The combination of

a stable or slightly increasing amount of suitable fisher habitat on the Forest over the last ten years (FEIS, pg. 3-171), and perhaps an increasing spatial distribution of fisher, make it reasonable to conclude the cumulative effects of vegetation management activities on the Forest have not affected viability of the fisher;...” (KRP BA/BE pg. 60).

Given the apparent recent geographic expansion of fisher populations on the Sierra, the stable to increasing amount and distribution of suitable fisher habitat on the Sierra National Forest over the past decade, the disturbance response analysis, and the low likelihood of death or injury of individuals, it does not appear that fisher populations are likely to lose viability as a result of project implementation, and in fact, retention of habitat in the long term may serve to enhance viability.

Contention 5. The analysis of effects fails to take a hard look at KRP effects to Pacific fisher. (Appeal pp. 50-53)

In addition to all analyses noted in the preceding paragraphs, existing fisher habitat and survey detection information was analyzed using a variety of models to explore alternative potential effects. These models include, but are not limited to:

- A KRP-specific female fisher rest site model
- Evaluation and subsequent conclusion of inappropriate scale to use the FIA-based model for fisher resting habitat suitability (per Zielinski et al. 2006)
- California’s Wildlife Habitat Relationships (CWHR), which corresponds to the maximum habitat map presented on page 56 of the BA/BE
- Modified CWHR to reflect only the highest quality reproductive habitat from pre- to post project per specifications from Zielinski and Truex (minimum habitat map on page 57 of the BA/BE)
- Acres treated, with pre- to post-implementation projections
- Parks and Rojas’ (2006) spatially explicit animations of fisher habitat effects pre- to post-treatment
- Forest Vegetation Simulator (FVS) to simulate growth of habitat in treated and untreated areas
- California’s Fire and Resource Assessment program (FRAP) models for fire and fire effects
- California Land Cover Mapping and Monitoring Program to determine changes in vegetative cover
- Use of FLAMAP as a habitat fire effects predictor
- Fire Fuels Extension to simulate potential fire intensity, tree mortality and fuel consumption
- An incorporation of planning area fire history back to 1916

By its very nature, non-existent data cannot be analyzed. The project analysis seeks to remedy lack of information regarding the effects of vegetation management treatments to fisher habitat by collecting such data in explicitly designed studies.

Regulations regarding the process to disclose and deal with incomplete or unavailable information are set forth at 40 CFR 1502.22. The KRP BA/BE has made clear that much of the information we would like to have on fisher and fisher habitat response to vegetation manipulation to decrease fire hazard and risk is not available. The FEIS and KRP BA/BE propose, as a reason for implementing this project, that such data be collected and analyzed for use in future project analyses. Further, the KRP BA/BE has summarized existing credible scientific evidence relevant to this effects evaluation. The project record examines potential effects for which probability is relatively low, as well as probabilities for wildfire in the KRP. The analysis was conducted based upon credible scientific evidence, and avoided pure conjecture, as directed under 40 CFR 1502.22 (b)(3).

No other treatment data is available to expand our understanding of effects of SPLAT-based vegetative manipulation treatments to fisher or their habitats. The Truex and Zielinski Fire and Fire Surrogate Study (2005) analyzed late season burns and reductions of canopy cover to less than 50 percent. Neither of those conditions will result from the design specifications of the selected alternative (3). The KRP BA/BE clearly identifies implementation of that study as being a very different application of prescription fire and mechanical thinning in a geographical area and with results not suited for extrapolation to the KRP area (KRP BA/BE, pg. 33).

The analysis conducted by the Forest was used by the U.S. Fish and Wildlife Service to conclude that the likelihood of direct injury or death of fisher as a result of KRP project activities is low (USDI 2006).

In summary, I find that the forest conducted multiple tests and analyses of existing data, reviewed appropriate existing scientific literature, communicated with recognized fisher scientists, utilized available fisher survey and monitoring data, plus employed and even developed models to evaluate effects to habitat with and without vegetation manipulations in order to reach a reasoned and logical determination of effects.

Upon review of the project record, I find the Forest Supervisor met the NFMA requirement to maintain a viable population of fisher across the Sierra National Forest.

Issue 2: The Kings River Project still does not comply with forest monitoring requirements. (Appeal, pp. 28-35)

Contention 1. The breeding bird surveys cited in the MIS report are not adequate to access (sic) population trend on the Sierra National Forest. (Appeal, pg. 28)

Response: The MIS Report for the Sierra National Forest (Oct 2006), extensively discusses the strengths and limitations with regard to Breeding Bird Survey (BBS) data and applicable uses. BBS routes, of which there are nine on or within 10 miles of the Sierra National Forest and 82 routes within the range of the Sierra Nevada, provide the most extensive, long-term data set available on landbird population trends (Siegel and DeSante 1999). The BBS, which has been conducted annually since 1966, consists of a continent-wide array of roadside point-count routes. Each route is 24.5 miles long, and includes 50 3-minute point counts at 0.5 mile intervals. Because the majority of avian species observed are considered migratory (i.e. expected to travel

outside of their breeding range at least part of the year), analysis boundaries that extend beyond political forest boundaries are appropriate. Therefore, this combination of routes throughout the forest and the Sierra Nevada and the long term monitoring of these routes provides more than adequate data to use in determining species occurrence and distribution as well as population trends of those species.

Contention 2: The response to SNFPC comments regarding the BBS results is evasive and inadequate.

Response: A thorough discussion of the level of precision and validity provided by BBS generated data is provided within the Sierra NF MIS Report. Credibility measures for each species detected are provided and although some species have reduced credibility at smaller scales, the credibility of the data within BBS for those species is increased at a larger scale. For example, all four species identified within Table 1 of the Notice of Appeal have maximum reported credibility (blue) at larger population scales, including at the state, western US and/or survey wide levels (Sauer et al. 2006).

Contention 3: Monitoring required by the forest plan was not completed for eleven species evaluated in the Kings River Project and additional species affected by the project.

Response: The Sierra NF has collected monitoring data for spotted owl, fisher, marten, deer, and avian species and has included summaries of those data in its Forest MIS Report, the KRP Wildlife Biological Assessment/ Biological Evaluation (BA/BE), in the KRP MIS Specialist Report, and in the Historical Raw Data from the Breeding Bird Survey for Management Indicator Species supplemental report noted in the ROD (pg. 9).

Appendix E of the 2001 Sierra Nevada Forest Plan Amendment (SNFPA), as stated in the 2004 SNFPA Record of Decision, amended the Forest Plans for National Forests in the Sierra Nevada to modify the kind of monitoring that is to be performed; however, the actual list of MIS that are to be monitored on each Forest remains unchanged and unaffected by the 2004 SNFPA Record of Decision. A complete list of MIS for the Sierra NF is provided in Table 1mis of the KRP MIS Specialist Report. Appendix 2mis, found within the KRP MIS Specialist Report, provides an incomplete summary of MIS monitoring that has been completed on the Sierra NF. Additional monitoring efforts are reported in the Forest MIS report, the KRP Wildlife BA/BE and the Supplemental MIS Report as indicated above. Although monitoring of additional species may be identified in the forest plan, typically as part of land management plan implementation monitoring, this is not a management indicator species monitoring requirement and is not required for project level analyses.

From my review of the project record, I find that, as noted in the ROD (pg.12), the KRP is consistent with the requirements, standards and guidelines in the 2004 Sierra Nevada Forest Plan Amendment and remaining standards and guidelines from the 1992 Sierra National Forest Land and Resource Management Plan.

Issue 3: The Kings River Project violates the National Environmental Policy Act by failing to consider important information and analysis necessary for a full and accurate assessment of the impacts of the project and alternatives that could avoid or lessen such impacts to fisher, spotted owl and other sensitive forest species.

(Appeal, pp. 35-53)

Contention 1: The Forest Service has failed to take a hard look or consider a reasonable range of alternatives. (Appeal, pp. 38-39)

Response: Forest Service policy is guided by the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR Parts 1500 – 1508. Part 1502.14 specifically addresses alternatives. Part 1502.14(a) Rigorously explore and objectively evaluate all alternatives which were eliminated from detailed study, briefly discuss the reasons for their dismissal.

Forest Service policy for consideration of alternatives is also found in Forest Service Handbook (FSH) 1905.15 part 14. Reasonable alternatives address significant issues while meeting the purpose and need of the project.

The range of alternatives was crafted to respond to the purpose and need of the project and to significant issues raised by the public. For the DEIS the Forest developed two alternatives, the Proposed Action (Alternative 1) and the No Action (Alternative 2) alternatives. Three alternatives were considered but eliminated from detailed study (FEIS, pp. 2-47 through 2-52) (ROD pg. 10). In response to comments on the Draft the “Reduction in Tree Size Alternative” was brought forward and analyzed in detail in the FEIS as Alternative 3.

In the FEIS, three additional alternatives were considered but eliminated from detailed study. They are: “Eliminate Herbicide Use”, “Study Previously Harvested Areas” and the “Sierra Nevada Forest Plan Amendment (2001)” (FEIS, pp. 2-47 through 2-52) (ROD pp. 10, 11). Under NEPA, the range of alternatives includes those alternatives considered but eliminated from detailed consideration.

I find the Forest Supervisor did analyze a reasonable range of alternatives.

Contention 2: Elimination of the 2001 Framework as an alternative is based on incorrect assumptions and not supported by evidence. (Appeal pp. 39-42, 44)

Response: The Sierra Nevada Forest Plan Amendment (2001) was considered as an alternative, but eliminated from detailed study. The application of the 2001 standards and guidelines was analyzed by the Final Supplemental EIS for the 2004 Sierra Nevada Forest Plan Amendment. The 2004 Framework provides the most recent direction applicable to the Kings River Project when it replaced the 2001 Framework with revised management direction.

The KRP FEIS (pp. 2-49 thru 2-51) discusses the rationale for eliminating the 2001 Framework Alternative from detailed study. The five reasons the alternative was eliminated from further analysis were:

1. Fails to meet purpose and need to design treatments to facilitate timely and scientifically valid studies.
2. The 2001 Framework Alternative is not feasible to design treatments to protect and minimize impacts to Pacific fisher.
3. The 2001 Framework Alternative is not uneven-aged management; it is thinning from below. This would preclude design of treatments in accordance with the Kings River Project uneven-aged silvicultural strategy (Appendix C).
4. The 2004 SNFPA ROD managers identified treatment restrictions and stand conditions as an unacceptable risk. The treatments would not meet the objective of the KRP to design treatments to increase resistance to crown fire and stand replacing fires.
5. The 2001 alternative would leave trees in a dense condition due to the dbh limitations. This would not meet the KRP objective to design treatments to increase resistance to insect attack.

The Record of Decision (pg. 11) further discloses the rationale for eliminating the 2001 Framework Alternative from detailed study. Since the 2001 Framework emphasized harvest of small trees (less than 20" dbh), analysis utilizing the Forest Vegetation System model revealed that this type of treatment would result in thinning from below in 96% of the stands. While this alternative would reduce fuel ladders and ground fuels, it would leave dense crowns that would still be vulnerable to crown fires.

In summary, I find that the Forest Supervisor properly considered a Sierra Nevada Forest Plan Amendment (2001) alternative and supplied appropriate rationale to eliminate the alternative from detailed study.

Contention 3: The claims regarding crown fuels are not supported by the Forest Service's own data. (Appeal, pg. 42)

Response: Forest Inventory Data was used and crown bulk density (CBD) values (kg/m³) were derived by the Forest Vegetation Simulator (FVS) and were part of data layers used in FlamMap in modeling the fire behavior. These models show a reduction in the potential of crown fires but also discuss the need to reduce the ground and ladder fuels to achieve this decrease in fire behavior. The FEIS describes canopy of 40% as a threshold for crown fire (Van Wagendonk 1996, from Response to Comments on FEIS-comment #11) (FEIS, pp. 3-95 and 3-96).

The 2001 SNFPA decision did not allow managers to sufficiently treat dense stands to the guidelines proposed or those critical crown bulk densities identified by research (FEIS, pg. 2-51). The guidelines for CBD of 0.05-0.15 kg/m³ for the prevention of crown fire spread is taken from the SNFPA ROD 2001 (Appendix A-11) not the 2004 ROD as incorrectly stated in the FEIS. The model outputs of the Proposed Action are indicators of meeting the need to reduce crown fuels and move toward openness and discontinuity of crown canopy, both horizontally and vertically, and results in a very low probability of crown fire initiation (FEIS, pg. 3-98). Data in

FEIS Table 3-16 is representing the average CBD of the plant aggregates in each management unit. Seven of the unit averages are within the upper limit of the guideline. This indicates that future crown growth in areas of higher CBD will likely result in areas exceeding the guidelines. Treatments are designed to create conditions where future growth will still provide adequate reduced CBD to meet the need for reduced probability of crown fire.

The crowning index increases for all management units except for N_soapro_2, a hardwood and chaparral unit. FVS modeling under represents the changes of stand dynamics in brush-only stands or where brush predominates (FEIS, pg. 3-96).

The FEIS also notes that “canopy cover alone is not a predictor of crown fire (Van Wagner, 1977). Agee (1996) indicates that thresholds for crown fire do exist and can be manipulated using silvicultural techniques. It is true that he describes the threshold in terms of crown bulk density. In addition, the FEIS wants the reader to know that thresholds for wildlife use also exist.

I find that the Forest Supervisor adequately analyzed the alternative using the most appropriate available data.

Contention 4: The FEIS should consider an alternative that does not threaten the viability of sensitive wildlife species. (Appeal, pp. 45-46)

Response: The appellants contend that an alternative with less impact on sensitive wildlife such as the fisher and spotted owl should be considered. Appellants further state that the 2001 Framework is a reasonable alternative to meet this need.

Three alternatives were considered in detail and three additional alternatives were considered but eliminated from detailed study.

The Sierra Nevada Forest Plan Amendment (2001) was considered as an alternative but eliminated from detailed study. The application of the 2001 standards and guidelines was analyzed by the Final Supplemental EIS for the 2004 Sierra Nevada Forest Plan Amendment. The Record of Decision for that project provided the most recent direction applicable to the Kings River Project when it replaced the 2001 decision with revised management direction.

The FEIS (pp. 2-49 thru 2-51) discusses the rationale for eliminating the alternative from detailed study. The five reasons the alternative was eliminated from further analysis were:

1. Fails to meet purpose and need to design treatments to facilitate timely and scientifically valid studies.
2. The alternative is not feasible to design treatments to protect and minimize impacts to Pacific fisher.
3. The alternative is not uneven-aged management; it is thinning from below. This would preclude design of treatments in accordance with the Kings River Project uneven-aged silvicultural strategy (Appendix C).

4. The 2004 SNFPA ROD managers identified treatment restrictions and stand conditions as an unacceptable risk. The treatments would not meet the objective of the KRP to design treatments to increase resistance to crown fire and stand replacing fires.
5. The 2001 alternative would leave trees in a dense condition due to the dbh limitations. This would not meet the KRP objective to design treatments to increase resistance to insect attack.

The FEIS (pp. 3-121 thru 3-182) contains an extensive discussion of the impacts of alternatives to sensitive wildlife species.

The Record of Decision (pg. 11) further discloses the rationale for eliminating a 2001 Framework alternative from detailed study.

In summary, I find that the Forest Supervisor did consider a Sierra Nevada Forest Plan Amendment (2001) alternative and supplied appropriate rationale to eliminate the alternative from detailed study.

Contention 5: The Forest Service has failed to take a hard look at whether the selected alternative meets the stated project purpose and need because of incorrect definition of historic conditions, including fuel conditions. (Appeal, pp. 43, 46-47)

Response: The current inter-agency MOU directs the High Sierra Ranger District to implement an uneven-aged silvicultural strategy with a group selection regeneration method across the KRP area and provide an opportunity for research to study effects (USDA 2002) (FEIS, pg. 2-3)

The KRP Historical 2004 write-up states that there is no landscape scale data available for the 1850 forest but it does describe an in-depth look at data sets used to characterize the historical conditions including early photographs of KRP and early cruise data (1914 to 1926 USDA 1926). The analysis of historical conditions examined quantitative data sets and literature from several local and non-local areas and states “these determinations were inherently subjective” (Appendix A). The underlying purpose of the proposed action is described as “to restore historical pre-1850 forest across a large landscape”. The J Curve discussion describes this process in “An Uneven-Aged Management Strategy: Lessons Learned” (Smith and Exline 2002).

I find that the Forest Supervisor took a hard look at finding the best way to address the Purpose & Need.

Contention 6: The inverse J curve does not reflect the historic condition of the pre-1850 forest. (Appeal, pp. 46-48, 62-64)

Response: The KRP FEIS describes in detail the process used to determine historical pre-1850 forest conditions of the Kings River Area in Chapter 3, pages 3-21 through 3-32 and in Appendix A, pages 1-17 including references. The document specifically states that “No landscape data describing the distribution of tree sizes for the historical pre-1850 Kings River Project exist.” (FEIS, pg. 3-24, and Appendix A, pg. 1). However, the EIS relies on several data sets as well as

photographs, dendrochronology and written descriptions to arrive at the potential of the inverse J-curve distribution. From Appendix A, page 1, “No one source can capture the variability or describes the historic conditions of the Kings River Project. Several data sources are typically used in the literature to identify the historic condition: historic oblique photos, written accounts, historic reconstructions of forest structure, (analogous relic) mixed conifer and pine forests, data sets representative of the historic condition, early aerial photographs, dendrochronology (fire scars and past growth), and repeat photography (Stephenson 1999. SNEP 1996). Descriptions, photographs and data sets are examined and compared to give a context. Specific descriptions and photographs of the Kings River Project are used when possible. Where data is lacking or incomplete that is specific to the KRP sources from other areas are used.”

The EIS states that, at the stand level, the size distribution may not reflect the inverse J-curve; however, distribution across the landscape of multiple stands would combine to represent the distribution of the inverse J-curve. “Scale is important in defining the distribution. If you look at only the opening you may see a normal distribution. If one looks only at a portion of the stand with partial disturbance one might find one of many distributions including the inverse J-shaped curve. However, when one steps back and looks at both the opening and the partially disturbed area stands are more likely to produce an inversed J-shaped curve. This is because young trees invading the understory fill in the lower end of the inverse J-shaped curve and older trees left after a disturbance fill in the upper end. This pathway of frequent low intensity disturbance is the pathway associated with the silviculture strategy for KRP resulting in the inverse J-shaped curve” (FEIS, pg. 3-28).

In addition, the EIS also describes the forces that are in effect that allowed the conclusion to be drawn for the inverse J-curve distribution across the landscape. “The frequent low intensity disturbance of the 1850 forest also set the stage for stand initiation and understory re-initiation (Oliver and Larson 1996) and maintained stands in the stem exclusion phase. That is low intensity ground fire and occasional torching of crowns resulted in crown openings that saw the initiation of seedlings. In partial or low disturbance areas, this left an overstory and allowed for invasion of the understory or understory re-initiation” (FEIS, pp. 3-27, 3-28).

As for the inverse J-curve reflecting a fire resilient forest, the Forest does not rely on the inverse J-curve to create fire resilience. The inverse J-curve strategy primarily addresses distribution of trees 11” – 30 or 35” DBH. Other methods to manage surface and ladder fuels, density and species composition to address fire resiliency are well documented throughout Appendices A, and C, the FEIS, pages 3-21 through 3-32, and in a letter in response to comments on the DEIS at Appendix G, page 27 by District Ranger, Ray Porter. Specifically in the FEIS, page 3-32 it states:

“The KRP uneven-aged management strategy uses the inverse J-shaped curve for trees between 11” and 30” or 35” in diameter, depending on the alternative and regeneration in groups to promote heterogeneity and homogeneity where appropriate. Prescribed fire is then applied where appropriate and functions as a tool to reduce fuel accumulations, kill small trees and brush (mostly fir and cedar), and reinitiate frequent fire. The fire is important to the KRP uneven-aged management strategy because it tends to depress the number of small trees in the inverse J distribution. An important note is that planted

openings are protected from prescribed fire by fire lines or by planting after the initial burns or both. Application of the inverse J-shaped curve does not explicitly manage trees below 11” inches, tree removal based on spacing and fire determine trees below 11”. Trees in these lower diameters are managed to remove fuels ladders or provide layering for wildlife.”

I find that the Forest Supervisor took the requisite hard look in determining the probable Pre-1850 historical condition within the Kings River Project area, as well as in determining the fire resiliency of both the proposed action and the preferred alternative within the Kings River Project area.

Contention 7: The Forest Service has not taken a hard look at impacts to Pacific fisher.
(Appeal, pp. 50-53)

Response: See response to Issue 1, including responses to Contentions 1 through 5 (above).

Contention 8: The Forest Service has not taken a hard look at impacts to spotted owl.
(Appeal pp. 53-59)

Response: The KRP BA/BE presents, considers, and analyzes numerous direct, indirect, and cumulative impacts to California Spotted Owls (pp. 13-24) and they are summarized in the FEIS (pp. 3-124 through 3-131). The analysis on owls utilized recent research, including Bart (1995) and Lee and Irwin (2005), Blakesley (2003), and Verner et al. (1992). None of the owl home ranges will drop below the minimal threshold for quality (Bart 1995) as a result of treatments (FEIS, pg. 3-126).

As noted in the ROD (pg. 7), the activities proposed in the project are within the scope of effects considered and described by the U.S. Fish and Wildlife Service in its 12-month finding to not list the California spotted owl. As a result, the project will not result in any cumulative effects that are greater than those already analyzed by the Service when it determined the owl does not warrant listing as threatened or endangered. California spotted owl survival is expected to increase over the next 30 years and viability of the owl in the planning area is not a concern (FEIS, pp. 3-130 to 3-131).

After reviewing the project record, I find the KRP adequately considers impacts to the California spotted owl and does not violate NEPA.

Contention 9: The DEIS does not take a hard look at impacts to MIS and species at risk.
(Appeal pp. 59-60) (Although the header for this section refers to the DEIS, the first sentence of the section refers to the FEIS. Since this document was submitted during the comment period for the FEIS, we assume that the reference to DEIS in the header and twice more later in explanatory statement are simply editorial mistakes.)

Response: As discussed in Issue 2, monitoring data has been collected for a variety of forest species. Summaries of those data are included within the Forest MIS Report, the KRP Wildlife BA/BE, and the KRP MIS Specialist Report. Species distribution, occurrence and/or habitat

data for multiple scales were utilized for analyses of effects to management indicator species, listed species, and forest sensitive species including species at risk (draft MIS report, Sierra NF, MIS Report KRP, KRP Wildlife BA/BE and the KRP ROD (pg. 9). Anticipated impacts on the above wildlife groups and their habitats of the action alternatives as well as any consequences of no action were analyzed within the MIS report and KRP Wildlife BA/BE. Additional discussion was provided within the ROD with regard to the California spotted owl and Pacific fisher, both species at risk, MIS and TES.

Based on my review of the project planning record, I find the KRP analysis does include a hard look at impacts to MIS and species at risk.

Contention 10: The KRP's analysis of cumulative impacts on wildlife is inadequate.
(Appeal, pp. 60-62)

Response: Population persistence of fisher in the Southern Sierras is threatened by a number of population, habitat and environmental factors (FEIS, pg. 3-164). Many possible reasons may account for the decline in fisher numbers since the 1800s. The dilemma posed by this Project is whether the short-term adverse effects of reducing fuels and initiating the restoration of pre-1850 historical forest conditions will be offset by the benefits, over the next 10 to 20 years, of reducing the risk of stand replacing fires and improving suitable habitat. Inaction may tip the balance towards greater loss of habitat to wildfire, while implementation of the planned treatments may shift a delicate balance of survival by directly affecting habitat quality in a way as yet unknown (ROD, p. 4).

Technical advice received from the U.S. Fish & Wildlife Service on fisher and numerous other scientific reports, letters and publications (Lamberson, Mazzoni, Zielinski, Jordon, Truex, Purcell and others) were reviewed and incorporated into the analysis between the Draft and Final EIS to assure the most appropriate science was utilized. As an adaptive management project, Kings River provides a field oriented approach to complement modeling approaches such as Parks and Rojas' (2006) "Modeling Existing and Future Vegetation Characteristics, Wildlife Habitat and Fire Behavior Indices in the Kings River Project Area Under Three Management Scenarios" and CBI's Southern Sierra Nevada Fisher Assessment (ROD, pg. 5).

Analysis of the direct, indirect, and cumulative effects to the fisher are disclosed within the KRP Terrestrial Biological Assessment/Evaluation (KRP BA/BE) on pages 4, 43-63 and summarized in the FEIS on pages 3-13, 3-140 through 3-173. The Forest concluded that cumulative effects of vegetation management activities in the KRP initial eight management units when taken together with past, present, and reasonably foreseeable activities on the Forest and across the Southern Sierra Fisher Conservation Area (SSFCA) will not result in a loss of viability for the fisher. In support of this project, the US Fish and Wildlife Service produced a "Review of the Draft Environmental Impact Statement for the Kings River Project, Sierra National Forest, California, for effects on the Fisher and the Yosemite Toad" dated July 27, 2006. In that document the Service recommended that the project be implemented as described in the description of the proposed action (FEIS, Appendix D, pg. 19). While the DEIS the Service reviewed identified trees over 35" as legacies of the historic forest, the selected alternative proceeds cautiously by retaining trees over 30" in diameter.

Cumulative effects analysis for California spotted owl included areas bounded by the San Joaquin River on the north, the Kings River on the south, and the elevation range for spotted owls on the east and west. This area is appropriate for analysis of cumulative effects, because the total size of the KRP (approximately 131,500 acres within two watersheds of the Kings River drainage) is considered sufficient to facilitate replication of experiments and also “represents the heterogeneity of southern Sierra ecosystem types” (USDA Forest Service 2004, pg. 81). Wilderness areas and national park land, where limited land management occurs, further define the boundary on the east. The two rivers course through steep, rugged canyons that are dominated by chaparral or rock at lower elevations, have no habitat, and are inhospitable (although by no means impenetrable barriers) for north to south movement. (FEIS, pp. 3-5 to 3-12, and 3-128 to 3-131). For spotted owl and fisher, also look at FEIS Figures 3-50, 3-52 and 3-54 and Tables CE2 and CE3.

Cumulative effects analysis for other various species can be found in the FEIS on the following pages: pp. 3-133 through 3-134 for goshawks; pp. 3-135 through 3-136 for great gray owls; pp. 3-174 through 3-177 for marten; pp. 3-177 through 3-178 for wolverine; pp. 3-178 through 3-179 for Sierra Nevada red fox; pp. 3-181 through 3-182 for Townsend’s big-eared bat; pp. 3-182 through 3-183 for Mule deer; pp. 3-185 through 3-187 for Riparian avian guild; pp. 3-189 through 3-190 for Oak woodland avian guild; and pp. 3-192 through 3-193 for mixed conifer avian guild.

An uneven-aged management study has been conceived but will only be implemented to the extent of establishing ten management units as treatment-controls. These controls are intended for use in a future uneven-aged management study and may also be used for other study and monitoring purposes. The uneven-aged management study can not be reasonably implemented utilizing the initial eight management units because two are involved in the Kings River Experimental Watershed (KREW) Study and several others have significant area in the defense zone of the wildland urban interface (WUI). These focused activities preclude applying the uneven-aged silvicultural strategy to the extent necessary for this study. (FEIS, pg. 2-23).

TES wildlife analyses considered the projects within the list of Present and Reasonably Foreseeable Activities in the KRP area. This section of the BA/BE also includes descriptions and maps of past activities as well (KRP Wildlife BA/BE, pp. 81-87).

Based on my review of the project planning record, I find the KRP analyses of cumulative impacts are appropriate and adequate.

Contention 11: KRP fails to take a hard look at impacts on fire resiliency. (Appeal, pp. 62-64)

Response: Will implementation of a landscape strategy such as the KRP uneven-aged silvicultural strategy combined with prescribed fire be able to restore forests to the historical pre-1850, fire resilient condition? This hypothesis is at the heart of the management experiment and drives all facets of the project. All planned research has been conceived to examine the response of the ecological system to the set of management prescriptions meant to implement the overall

vegetation management strategy. The design of the proposed action has been an iterative and collaborative process between management and research over several years. (FEIS, pg. 2-17)

The KRP has missed several fire entries, possibly as many as 20 low intensity fires. Due to the lack of frequent-low intensity fires, the project area has become overstocked with fire intolerant trees and shrubs converting it to a fire susceptible forest type in which high intensity fires are prevalent. Of the project land area, 44% is within a Fire Regime I and Condition Class III. (FEIS, pg. 3-75)

The FEIS also describes the forces that are in effect that allowed the conclusion to be drawn for the inverse J-curve distribution across the landscape. “The frequent low intensity disturbance of the 1850 forest also set the stage for stand initiation and understory re-initiation (Oliver and Larson 1996) and maintained stands in the stem exclusion phase. That is low intensity ground fire and occasional torching of crowns resulted in crown openings that saw the initiation of seedlings. In partial or low disturbance areas, this left an overstory and allowed for invasion of the understory or understory re-initiation.” (FEIS, pp. 3-27, 3-28)

District Ranger Ray Porter, in a July 17, 2006 letter to Robert C. Heald, describes the intent of the J curve to portray distributions of trees in reforestation groups (FEIS, Appendix G, pp. 27-30). It describes the importance of spacing standards to control the number of small trees. Reducing small trees along with selected larger ones would decrease unnatural intense fire behavior potential. Agee and Skinner 2005, is quoted along with others that implementing fuel treatments would move towards a more fire resilient forest. Agee and Skinner (2005), within the context of their document, defined resiliency as a “forest capable of maintaining substantial live basal area after being burned by a wildfire”.

I find that the Forest Supervisor did take a hard look at impacts on fire resiliency.

Issue 4: The Forest Service has not complied with NEPA by introducing new information and not preparing a supplemental DEIS instead of the FEIS. (Appeal, pp. 36-38)

Response: The appellants contend that the Forest Service should have prepared a supplemental draft EIS, rather than a final EIS.

The regulations for implementing NEPA (40 CFR parts 1503.4 (a)(1-4) direct that in response to comments an agency may “modify alternatives including the proposed action”; “develop and evaluate alternatives not previously given serious consideration by the agency” and “make factual corrections”.

The Forest Service released the Draft EIS for public comment on January 27, 2006. There were 17 comment letters received in response to the release. In response to those comments, the Forest Service brought the “Reduction of Tree Size” alternative forward for detailed analysis. The Forest also improved and modified the analysis of effects in Chapter 3 of the FEIS.

Because of the changes made between the Draft and Final EIS, the Forest made the FEIS available to the public on October 3, 2006 via the internet and published a legal notice in the

Fresno Bee on October 20, 2006. The legal notice and Notice of Availability (NOA) notified the public that additional comments would be accepted for 30 days. This is in accordance with 40 CFR part 1503. Interested parties were notified in writing that the NOA and the Legal Notice would precede the ROD by 30 days.

The appellant provided written comments on the FEIS. Those comments were analyzed and considered in formulating the Record of Decision (Summary of Response to Public Comments, King River Project FEIS, Sierra NF, December 15, 2006).

I find that the Deciding Officer provided adequate time for the public and the appellant to review and comment on the FEIS before the final decision was made.

Issue 5: An impermissibly narrow definition of the stated Purposes is applied. (Appeal pp. 43-44)

Response: The appellant claims that a narrow definition of the stated Purpose is applied. Forest Service policy is guided by the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR Parts 1500 – 1508. Part 1502.13 specifically addresses Purpose and Need. The agency is responsible for specifying the underlying purpose and need in proposed alternatives, including the proposed action.

The underlying purpose of the Kings River Project is to restore forest conditions thought to have been present prior to 1850, and in so doing, to preserve critical habitat and protect communities from wildfire (FEIS, pp. 1-4 through 1-9; ROD, pg. 3).

Two action alternatives were identified to achieve the stated purpose, and were fully analyzed in detail. For a discussion on reasonable range of alternatives, see the response to Issue 3, Contention 4.

Based on my review of the project record, I find the project's Purpose was sufficiently broad and adequately described.

Issue 6: The Forest Service has failed to respond adequately to comments. (Appeal, pg. 66)

Response: The appellant contends that the Forest Service did not adequately respond to comments received from the public. Forest Service policy is guided by the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR Parts 1500 – 1508. Part 1503.4 specifically addresses the procedures for responses to comments.

Appendix G of the FEIS displays the Forest Service response to comments that were made on the DEIS. The appellant's comments were responded to for comment numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13 (FEIS, Appendix G, pp. 1-18).

Seventeen comment letters on the DEIS were reviewed, summarized, and responded to as documented in Appendix G. Twenty-six comment letters on the FEIS, including the appellant's

were reviewed, summarized and responded to in the Summary of Response to Comments, Kings River Project FEIS, Sierra NF (December 15, 2006).

In the DEIS, the “Reduction in Tree Harvest Size” alternative was considered but not analyzed in detail. In response to comments received on the DEIS, the FEIS brought this alternative forward, designated as Alternative 3, for detailed analysis. After full analysis, Alternative 3 was labeled as the environmentally preferred alternative (ROD, pg.10), and the Forest Supervisor ultimately selected it for implementation.

I find the Forest Supervisor appropriately considered and responded to substantive comments.

Issue 7: The Kings River Project violates applicable Regional standards ensuring the protection of soil quality and NEPA for failing to disclose relevant and significant information regarding impacts to soil quality. (Appeal, pp. 66-69)

Response: The appellant alleges that the Forest Service is in violation of NEPA in five areas related to soil quality impacts. These are: failing to defend sub-soiling effectiveness; reliance on average rather than at-a-point values to evaluate detrimental soil compaction; failure to collect sufficient data in management units krew_prov_1 and n_soaproot_2; failure to discuss post harvest compaction rates, and lack of unit-by-unit comparison of soil compaction pre and post project.

The Forest does support the use of sub-soiling by citing references that primarily discuss the effectiveness of soil tilling, a similar technique. They presented this argument at Comment 19d of the Response to Comments (FEIS, Appendix G, pp. 21-22). These reports, based on work from the Sierra and Stanislaus National Forest, suggest that tilling and sub-soiling are effective treatments that reverse the effects of soil compaction. No actual data was presented in the Response to Comment 19d, and the comment regarding 100 percent effectiveness is related to tilling and not sub-soiling. Sub-soiling however, is recommended in FSH 2509.18 – SOIL MANAGEMENT HANDBOOK and listed in Exhibit 03 on page 11 as a management option for alleviating detrimental effects of soil compaction.

Average soil compaction levels for the management areas were identified in the KRP EIS Soils report (pp. 4-5). Unless otherwise noted, the Forest collected these data in 2005. Several units are reported in percentage of area compacted (El-O-Win (1%)), Bear Meadow Project Area-(12.2%-collected in 1996), Soaproot (8%), and Glen Meadow (4%). In other units compaction was reported as average soil compaction. One unit (Bear_fen_6) reported as having compaction of 5% along one transect.

With respect to lack of data for management units krew_prov_1 and n_soaproot_2, comment 18 of the Response to Comments section states that soil pit and grid data, field data, and two reports cited in the FEIS were available for review in the project file.

The appellants contend that the Forest should conduct unit-by-unit comparison of pre-project and post-project compaction rates. Three of the four units selected for pre-post project compaction analysis have a similar compaction hazard rating (high) due to the presence of Holland family

soils, and so the Forest Supervisor could still accomplish unit-by-unit comparison, along with an evaluation of post-harvest compaction rates.

I find that the Forest Supervisor adequately analyzed and disclosed the effects of management activities on soil quality for the Kings River Project.

Issue 8: The KRP does not comply with Regional direction that the identification of pre-1850 conditions include an assessment of the historical presence of lower Westside hardwood forest ecosystems. (Appeal, pp. 69-70)

Response: The appellants claim that the Forest has not done a ‘landscape level’ assessment to identify hardwood ecosystems based on pre-1850 disturbance levels.

The Forest has completed preliminary tasks such as mapping historic and existing conditions and describing an approach to managing Natural Hardwood Ecosystems. The Forest stated in Comment #10 of the FEIS Response to Comments, they will follow the direction as required in the 2004 ROD. More specifically, this includes actions such as identifying areas where Natural Hardwood Ecosystems are outside the range of natural ability for potential natural vegetation ecosystems (distribution pre-1850 disturbance levels); identify and develop restoration and/or enhancement projects.

Given that the Forest has agreed to conduct additional analysis, I believe that the Forest Supervisor has taken the necessary steps to continue to move forward towards a formal analysis and development of Natural Hardwood Ecosystems restoration plan.

The current inter-agency MOU directs the High Sierra Ranger District to implement an uneven-aged silvicultural strategy with a group selection regeneration method across the KRP area and provide an opportunity for research to study effects (USDA 2002) (FEIS, pg. 2-3)

The KRP Historical 2004 write-up states that there is no landscape scale data available for the 1850 forest but it does describe an in-depth look at data sets used to characterize the historical conditions including early photographs of KRP, early cruise data (1914 to 1926 USDA 1926). The analysis of historical conditions examined quantitative data sets & literature from several local and non-local areas and states “these determinations were inherently subjective” (Appendix A). The underlying purpose of the proposed action is described as “to restore historical pre-1850 forest conditions across a large landscape”. The J Curve tries to simulate this process and is described in “An Uneven-Aged Management Strategy: Lessons Learned” (Smith and Exline 2002).

I find that the Kings River Project does comply with Regional direction by describing the pre-1850 condition with the most appropriate existing information and models.

RECOMMENDATION

The Forest Supervisor’s decision and supporting rationale are clearly presented in the Record of Decision. His reasons for selecting Alternative 3 are logical and responsive to direction contained in the Sierra National Forest Land and Resource Management Plan as amended by the

2004 Sierra Nevada Forest Plan Amendment. The Forest Supervisor responded to public comments by fully developing an alternative (FEIS Alternative 3) that had previously been considered but not fully analyzed in the DEIS. The Forest Supervisor's decision to select Alternative 3 indicates he considered and responded to public input.

My review was conducted pursuant to and in accordance with 36 CFR 215.19 to ensure the analysis and decision is in compliance with applicable laws, regulations, policy, and orders. I reviewed the appeal record, including the comments received during the comment period and how the Forest Supervisor used this information, the Appellant's objections and recommended changes.

Based on my review of the record, I recommend the Forest Supervisor's decision be affirmed on all issues. I recommend that the appellants' requested relief be denied on all issues.

/s/ Scott G. Armentrout

SCOTT G. ARMENTROUT
Appeal Reviewing Officer
Deputy Forest Supervisor, Shasta-Trinity National Forest