August 31, 2007

Duncan Leao, ID Team Leader
Lake Tahoe Basin Management Unit
35 College Drive
South Lake Tahoe, CA 96150

Sent via e-mail to: comments-pacificsouthwest-ltbmu@fs.fed.us
and dleao@fs.fed.us

RE: Comments on the Proposed Action for the South Shore Fuels Reduction Project and Healthy Forest Restoration Project on the Lake Tahoe Basin Management Unit.

Dear Mr. Leao,

These comments on the proposed South Shore Fuels Reduction Project (the "Project") are submitted on behalf of the Sierra Forest Legacy, and the Sierra Club (collectively, the "Legacy").

The South Shore Fuels Reduction Project proposes logging of trees up to 30" diameter and reduction of canopy cover to 40 percent or below in the name of fuels reduction and forest health. The proposal states the projects includes treatments on 12,525 acres including 2,500 acres within and adjacent to the Angora Fire perimeter. However, as described in more detail in these comments, the best available evidence indicates that such intensive logging is unnecessary to achieve legitimate fuels reduction and forest health goals and will adversely affect habitat for sensitive and imperiled species such as the California spotted owl and American marten. Therefore, the urges the Forest Service to consider and adopt an alternative, consistent with the 2001 Framework, that would generally limit logging (outside the defense zone) to trees 20" diameter and smaller and maintain canopy cover at 50 percent or greater. It is particularly important that the Forest Service adhere to these guidelines in higher quality, ecologically important old forest habitat, including but not limited to owl nesting habitat, marten denning and resting habitat, owl home range core areas (HRCAs), and the forest carnivore network.

The Legacy objects to the project to the extent that it deviates from the standards and guidelines contained in the 2001 Record of Decision for the Sierra Nevada Forest Plan Amendment ("2001 ROD") and implement the 2004 Record of Decision for the Sierra Nevada Forest Plan Amendment ("2004 ROD"). As demonstrated in the Notice of Appeal and Statement of Reasons submitted to the Chief of the Forest Service by the Sierra Forest Legacy and other organizations, the 2004 ROD and accompanying final

supplemental environmental impact statement ("FSEIS") fail to comply with the National Forest Management Act ("NFMA"), National Environmental Policy Act ("NEPA"), and other applicable environmental laws and regulations. (Sierra Nevada Forest Protection Campaign ("SNFPC") *et al*. 2004).[1] Therefore, to the extent that the South Shore Fuels Reduction Project implements any of the changes to the 2001 Sierra Nevada Forest Plan Amendment made by the 2004 ROD, the project is contrary to law.

The Legacy strongly opposes the HRFA § 218 Objection process that you intend to follow in the South Shore Fuels Reduction Project. The "objection process" leaves the final decision authority in the hands of the local forest officials and removes the quasi-judicial regional office appeal review where officials removed from, and less emotionally and economically invested in the planning process, review the legal and scientific validity of the forest's NEPA documentation and the adequacy of the project's conclusions. We request you grant the normal regional appeal review of the NEPA documents under 36 CFR § 215.

I. The Forest Service Should Consider and Address a Number of Significant Issues in Its Environmental Review and Planning for the Proposed Project.

The Legacy requests that the following issues, information, and analysis be considered, addressed, and disclosed in the environmental review for this Project and as part of the planning process for this Project:

A. Description of the Project

The Forest Service should provide a clear and detailed description of the South Shore Fuels Reduction Project, including the nature, intensity, and extent of planned logging by unit. The South Shore Fuels Reduction Project scoping letter states that the Forest Service plans to treat 12,525 acres including 748 acres of CSO PACs and 2,842 acres of CSO Home Range Core Area, 1,275 acres of SEZ, and 644 acres total in three Inventoried Roadless Areas.

- We request that the Forest Service provide detailed maps that identify unit locations and the types of treatment in relation to ecologically important features including CWHR type (especially CWRH 6, 5D, 5M, 4D, 4M), California spotted owl protected activity centers (PACs), owl home range core areas (HRCAs), spotted owl habitat areas (SOHAs), owl areas of concern (AOCs), LSOG 4 and 5, forest carnivore sightings, and the forest carnivore network.

- With respect to the size of trees that will be removed, the Forest Service should identify the maximum tree diameter that will be removed within each treatment unit, based upon the applicable 30-40 percent basal area retention standard in the 2004 ROD (p. 68). The Forest Service should provide the underlying data and analysis that supports the diameter limit. If the project will remove any trees in excess of 30 inches in diameter for hazard or operability, the Forest Service should explain the basis for such logging and explain how removal of these trees

has been minimized as much as possible (2004 ROD, p. 68). The Forest Service should not consider "operability" as a rationale for removing trees > 30" in group selection units or for placing landings where alternative locations exist. Logically, operability issues should not be present in what are essentially small clear cuts that proposed to remove all trees <30".

- For each unit, the Forest Service should disclose the existing canopy cover and the canopy cover that will remain if the project is implemented. The Forest Service should explain how reductions in canopy cover are consistent with standards in the 2004 ROD (pp. 68-69). In estimating canopy cover in DFPZ units, the Forest Service should consider the impacts of any group selection within the DFPZ.

- For each unit, the Forest Service should disclose the existing CWHR size class and the post-treatment size class. In addition, the Forest Service should disclose and analyze the extent to which habitat quality within CWHR types is variable. For example, a stand with dominant trees of 20-24" and canopy cover of 55 percent provides far higher habitat quality for the California spotted owl and other old forest species than a stand with dominant trees of 12-14" and canopy cover of 40 percent, yet both stands would be classed as CWHR 4M. Please see the Science Consistency Review for the Empire project on the Plumas National Forest, which addresses this issue in detail (Stine 2005). We'll send upon request is you can not locate.

- The Forest Service should identify the snag and down wood retention levels as directed in the 2004 ROD (p. 69) and the basis for such standards. Outside the defense zone, the snag levels should be consistent with the best available scientific data associated with the snag and log requirements for a wide range of forest species including, but not limited to, cavity nesting birds, furbearers, owls and goshawks and their prey, and other avian species associated with deadwood. In making this determination, the agency should consider the recommendation of PRBO Conservation Science, in their study module on landbirds in the Plumas-Lassen area, that "snags are a critical component of forest ecosystems" and that "as many snags as possible" be retained, with an "absolute minimum" of 4 snags/acre, with "priority given to the largest ones." (Burnett et al. 2005, p. 23).

- The Forest Service should disclose the acreage and location of planned treatments by treatment type, including (where applicable) group selection, defensible fuel profile zones ("DFPZs"), area treatments, individual tree selection, and other approaches. The agency should specifically identify any logging proposed for purposes other than fuels reduction (*e.g.*, reducing stand density, salvage, insect and disease), including the planned acreage of such logging, the specific units in which such logging will occur, and the rationale for any such treatments. If the project involves reducing stand density to address forest health concerns, the Forest Service should identify the objective criteria used to select the trees removed to meet this objective. The project should identify the specific

contribution of fuels reduction treatments to the decreased risk of insect and disease problems related to stand density concerns.

- The Forest Service should identify the acreage and type of logging by land allocation, including (where applicable) old forest emphasis area, threat zone of the wildland urban intermix ("WUI"), defense zone of the WUI, protected activity centers ("PACs"), and owl home range core areas ("HRCAs") and forest carnivore network.

- The Forest Service should disclose the amount of planned road construction and reconstruction and analyze impacts on habitat fragmentation and connectivity, weed invasion, increased predation, and poaching. The environmental impacts of temporary road construction and restoration (disturbance) should be fully analyzed.

- If the project is adjusting the boundaries of the WUI compared to the boundaries assumed in the 2004 ROD, the Forest Service should explain the basis for the change and analyze the environmental impacts.

- The Forest Service should identify and analyze proposed hazard tree removal and the site-specific rationale for such logging. The Forest Service should analyze the impacts of such logging on soils, wildlife, and other environmental values. Hazard trees should be felled and left in place when necessary to meet wildlife needs or forest plan standards.

- To the extent that the Forest Service believes that logging of medium and large trees is necessary to "improve the cost-effectiveness" of the project, as stated in the 2004 ROD (p. 9), we request that the agency provide an objective definition of "cost effective" and a detailed analysis comparing the cost-effectiveness of a full range of alternatives, including alternatives with a range of lower diameter limits.

B. California Spotted Owl

The conservation status of the California spotted owl in the Sierra Nevada is precarious. (SNFPC *et al*. 2004, pp. 12-14). The most recent published meta-analysis concluded that "all the demographic evidence available – such as estimated vital rates, rates of population change, and differences in paired studies – suggest substantial caution in owl conservation and management efforts." (Franklin *et al*. 2004, p. 41). Moreover, the fact that the owl appears to be faring appreciably worse on national forest lands than on nearby national park lands suggests that logging has contributed to reduced survivorship and declining owl populations. (*Id.*, pp. 37-38, 40). A more recent, unpublished meta-analysis indicates significant concern regarding the owl's population in the Lassen study area, the closest study area to the South Shore Fuels Reduction Project project. The 2006 owl meta-analysis showed that lambda – the predicted rate of population change – was .973 on the Lassen study area, indicating a likely population decline, with a 95 percent confidence interval of .946 to 1.001. (Blakesley et al. 2006, p.

3). Moreover, the Lassen study area exhibited a 64 percent likelihood of experiencing a 10 percent or greater population decline within the next seven years. (*Ibid.*, p. 4). Other information further indicates that the Lassen owl population is declining. Thus, for example, site occupancy declined between 1991-1994 and 2001-2004, with several owl territories becoming abandoned following logging. (Blakesley et al. 2005). This information needs to be fully disclosed in the EIS, and its implications for management need to be weighed.

There is strong evidence that logging pursuant to the 2004 ROD, particularly logging of medium and large trees, reduction in canopy cover, removal of large snags and down wood, and logging within owl PACs, owl HRCAs, old forest emphasis areas, and areas of concerns, will degrade owl nesting and foraging habitat and threaten the owl's viability. (SNFPC *et al*. 2004, pp. 14-20). The Forest Service's Science Consistency Review concluded that the new plan "incurs greater risk" to the owl than the Framework (Stine and Keane 2003, p. 9), and the agency's Washington Office Director of Fish and Wildlife found that the new plan is "a prescription for continued owl declines." (Gladen 2003, p. 11). The owl scientists who have reviewed the plan have uniformly concluded that the plan increases the risks to the owl's population, threatening the owl's viability and distribution and contributing to a trend towards federal listing under the Endangered Species Act. (Noon 2004; Verner 2003b; Blakesley and Noon 2003; Peery 2004; Bond 2003).

Given the risks to the owl of implementing the 2004 ROD, it is essential that the Forest Service take a detailed and careful look at the likely impacts on the owl and its habitat of implementing the project. An adequate analysis should address, at a minimum, the following issues. (*See* SNFPC *et al*. 2004, pp. 9-28, 77-80).

- The Forest Service should disclose the amount of owl nesting and foraging habitat currently within the project planning area and the amount of nesting and foraging habitat that will be logged, degraded, and/or rendered unsuitable. Canopy cover less than 50 percent should not be considered as suitable owl habitat. (SNFPC *et al*. 2004, pp. 10-11).

- The Forest Service should disclose the results of all owl surveys by year, distinguishing single owls from pairs and identifying reproductive status and number of fledglings when known, for all PACs within the analysis area.

- With respect to each owl activity center, we request that the Forest Service provide the following information: the amount of nesting and foraging habitat within the PAC, 500 acre nest core area, 1,000 acre HRCA, and home range, the amount of such habitat that will be logged, degraded, and/or rendered unsuitable, and the amount of such habitat that will remain suitable if the project is implemented. In analyzing the impacts of logging on owl home ranges, the analysis should be based on the assumption that a minimum of 50 percent suitable habitat is necessary, as indicated in the 1999 QLG EIS. (USDA Forest Service 1999b, App. AA). With respect to nest core areas, the best available information indicates that such areas

need to include a minimum of 83 percent suitable habitat, as the court found in the Creeks litigation. (Blakesley 2003; Sierra Nevada Forest Protection Legacy v. Tippin, 2006 WL 2583036 at *14 (E.D. Cal. 2006)).

- With respect to each HRCA, the Forest Service should identify the current amount of owl nesting and foraging habitat and the amount that will be degraded by the project, which was specifically identified by the Science Consistency Review as important information to be addressed in environmental planning. (Stine and Keane 2003, pp. 4, 6). The analysis should assess the percentage of suitable habitat within each HRCA both before and after project implementation.

  - Substantial new research, published after the 2004 Framework, emphasizes the importance of maintaining old forests with high canopy cover (70 percent or greater) within owl territories. For example, Blakesley (2005) showed that site occupancy is positively associated with the amount of nest area dominated by larger trees and higher canopy cover (>70%) [i.e., CWHR 5D] at a 203 hectare/500 acre nest area, and was negatively associated with non-habitat. Seamans (2005) found that "forests comprised of medium and large trees and having high canopy cover [i.e., CWHR 5D and 4D] were correlated with higher territory occupancy and higher individual survival rates," whereas the importance of forests with 30-69% canopy cover was equivocal. (Id., p. 91).) Chatfield (2005) similarly found that the probability of owl occupancy was most strongly correlated with the amount of CWHR 5D and 4D habitat. Both Seamans (2005, pp. 118-119) and Chatfield (2005, pp. 52-53) concluded that thinning, such as allowed by the 2004 Framework and proposed in the South Shore Fuels Reduction Project project, could greatly reduce habitat value for spotted owls by reducing canopy cover from dense to moderate.

  - In sum, new research by Blakesely, Seamans and Chatfield raises serious concerns about the impacts on the owl of reducing canopy cover within dense stands, as proposed in the South Shore Fuels Reduction Project. We ask that this new information be carefully considered and that the proposed action be modified to reduce the extent of habitat degradation caused by DFPZs and group selection.

- The Forest Service should disclose the acreage and location of old growth stands 1 acre or larger that will be logged. Research indicates that these small inclusions of habitat are important for the California spotted owl (Blakesley 2003; Moen and Gutierrez 1997), and they were protected under the 2001 ROD. Both the U.S. Fish and Wildlife Service and the Forest Service's Washington Office have expressed concerns about the elimination of protection for these stands under the 2004 ROD. (USDI Fish and Wildlife Service 2003c, pp. 4-5; Gladen 2003, pp. 10-11).

- The Forest Service should identify and disclose any of the "areas of concern" identified by Verner et al. (1992) that will be logged, including the existing amount of owl nesting and foraging habitat within such areas and the amount of nesting and foraging habitat that will be degraded. The Forest Service should analyze the extent

to which such logging within areas of concern may affect the owl's distribution and dispersal in the planning area. (*See* SNFPC *et al*. 2004, p. 20).

C. Pacific Fisher

The status of the Pacific fisher in the Sierra Nevada is highly imperiled. (SNFPC *et al*. 2004, pp. 31-32). The U.S. Fish and Wildlife Service recently concluded that the west coast population of the fisher, including the isolated population in the southern Sierra Nevada, warrants listing under the Endangered Species Act. (USDI Fish and Wildlife Service 2004). A report co-authored by leading Forest Service researchers concluded that the southern Sierra fisher population "has a very high likelihood of extinction given reasonable assumptions with respect to demographic parameters." (USDI Fish and Wildlife Service 2004, pp. 18790-91; Lamberson et al. 2000).

Promoting the fisher's viability in the Sierra Nevada requires two steps: protecting and enhancing habitat that is currently occupied within the southern Sierra fisher conservation area, and protecting and restoring habitat north of the southern Sierra fisher conservation area to facilitate the fisher's recolonization of and expansion to the central and northern Sierra. Therefore, it is essential that the Forest Service carefully consider impacts, using the best available science, of planned logging on the fisher even outside of currently occupied habitat.

There is strong evidence that logging pursuant to the 2004 ROD, particularly logging of medium and large trees, reduction in canopy cover, removal of large snags and down wood, and logging within old forest emphasis areas and the southern Sierra fisher conservation area, will degrade fisher denning, resting, and foraging habitat and further threaten the fisher's viability. (SNFPC *et al*. 2004, pp. 32-41). The forest carnivore experts who have reviewed the plan have uniformly concluded that the plan increases the risks to the fisher's population, further threatening the fisher's viability and distribution and contributing to the need for federal listing under the Endangered Species Act. (Barrett 2004a; Kucera 2004; Lewis 2003a, 2003b; Buskirk 2003). As the Forest Service has recognized, "given the current low density of fishers in the Sierra Nevada, the loss of even a small number of individuals … could significantly impact the population." (USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 9).

Given the risks to the fisher of implementing the 2004 ROD, it is essential that the Forest Service take a detailed and careful look at the likely impacts on the fisher and its habitat of implementing the project. An adequate analysis should address, at a minimum, the following issues. (*See* SNFPC *et al*. 2004, pp. 28-41, 80-83).

- The Forest Service should disclose the amount of fisher denning/resting and traveling/foraging habitat currently within the project planning area and the amount of such habitat that will be logged, degraded, and/or rendered unsuitable.

- The Forest Service should disclose the acreage and location of old growth stands 1 acre or larger that will be logged. Research indicates that these small inclusions

of habitat are important for the fisher (2004 FSEIS, p. 139), and they were protected under the 2001 ROD. Logging of these small but important areas could eliminate potential denning and resting sites for fisher (Barrett 2004a), especially given the documented use of numerous resting sites within a particular home range. (SNFPC *et al*. 2004, p. 30).

- Given that fisher use numerous rest sites a day and reuse rest sites infrequently (Mazzoni 2002, Zielinski et al 2004a), it is critically important that the Forest Service provide numerous, well distributed rest sites for the fisher. Jordan (2005), Zielinski et al. (2004a; 2004b) and Mazzoni (2002) all found that fisher rest sites are characterized by very high (70-90 percent) canopy cover. The Forest Service should analyze the project's impact on both the amount and distribution of fisher rest site habitat in light of this new research.

- The Forest Service should disclose the amount and intensity of proposed logging within the southern Sierra fisher conservation area where appropriate. Specifically, the Forest Service should analyze the percentage of each watershed characterized by medium-large trees and canopy cover of 60 percent or greater, both before and after proposed logging. These figures are based on the 2001 ROD (p. A-45) and reflected the best available research regarding occupied fisher home ranges. USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 11). (*See* SNFPC *et al.* 2004, pp. 33-34). Also see Mazzoni 2002 and others citing significant portions (20%) of female fisher home ranges in canopy cover averaging 80%. Also see Jordan 2005, Zielinski et al. 2004 (a) (b). The implications of this recent research strongly suggests that Fisher resting and denning habitat needs increased protection at various scales including the plot scale, riparian areas, and female home-ranges in general to adequately maintain important structures and high canopy cover beyond that required in the 2004 Framework,

- The Forest Service should identify and disclose the number of fisher home ranges that will be logged, the current amount of suitable habitat within each home range, and the amount of such habitat that will be logged. Information on many fisher home ranges is available from Forest Service telemetry research in the southern Sierra Nevada and should be disclosed and analyzed in the environmental documentation.

- The Forest Service should disclose the impacts of proposed logging on fisher habitat connectivity and on the fragmentation of existing habitat, particularly within checkerboard lands in the central and northern Sierra. (SNFPC et al. 2004, pp. 38-39). The 2004 ROD directs the Forest Service to "minimize old forest habitat fragmentation," to assess fragmentation issues in the biological evaluation, to assess potential impacts on habitat connectivity, and to consider retaining forested linkages as part of "project-level analysis." (2004 ROD, pp. 53-54). Special attention should be paid to impacts of any proposed DFPZs or road construction on habitat connectivity and fragmentation.

- The Forest Service should disclose the amount and intensity of proposed logging within furbearer management areas or forest carnivore networks that have been proposed or adopted by each national forest, including the Forest Carnivore Network on the LTBMU. The agency should undertake a fragmentation analysis for fisher based upon the best available habitat models (see Zielinski et al 2004a, 2004b, 2004 c; Zielinski 2005; Mazzoni 2002; Campbell 2004 and others). Rest site habitat requirements of very high canopy cover in portions of female home ranges should be clearly identified and used as a measure of habitat suitability when conducting habitat assessments for fishers. This may require the Forest Service to specifically identify potential fisher rest sites throughout project areas and protect them for future use.

D. American Marten

The marten is among the most habitat-specific mammals in North America, and changes in the quality, quantity, and distribution of available habitat can affect their distributional range in the Sierra Nevada. (USDA Forest Service 2001, Vol. 3, Chap. 3, part 4.4, p. 23). The marten is closely associated with the structural characteristics of old forests, especially large trees, large snags and down wood, and dense canopy cover. (SNFPC *et al*. 2004, pp. 41-43). Research has shown that the marten is highly sensitive to forest fragmentation, generally tolerating a landscape that has no greater than 20-25 percent forest openings. (*Id.*, p. 43).

Because of its low reproductive potential and large home range, together with its affinity for old forests, the marten is considered vulnerable to local extirpation. (USDA Forest Service 2001, Vol. 3, Chap. 3, part 4.4, pp. 22-23). In fact, extensive surveys by Forest Service researchers have found that there is a significant gap in the marten's distribution in the northern Sierra. This research compared contemporary and historical distributions of habitat and populations for forest carnivores, including the marten. (Zielinski et al. 2005a; Zielinski 2004). The research concluded that the marten is a species "with substantial changes in distribution," including "large gaps between contemporary detections that were not present historically" in the northern Sierra Nevada and southern Cascades. (Zielinski et al. 2005a, p. 1394). The authors conclude that marten "populations in the southern Cascades and northern Sierra Nevada now appear discontinuous." Notably, "the areas of Plumas and Lassen County where martens were not detected, and which have been managed for timber harvest, have relatively little forests with late seral/old growth attributes." (Zielinski et al. 2005a, p. 1394). The authors conclude that the apparent reduction in the range of the marten and other forest carnivores is most likely due to a combination of factors, including "loss of mature forest habitat." (Ibid., pp. 1385-86).

There is strong evidence that logging pursuant to the 2004 ROD, particularly logging of medium and large trees, reduction in canopy cover, removal of large snags and down wood will degrade marten denning, resting, and foraging habitat. (SNFPC *et al*.

2004, pp. 45-48). The forest carnivore experts who have reviewed the plan have uniformly concluded that it increases the risks to the marten's population, threatening the marten's viability and distribution and potentially leading to local extirpation. (Barrett 2004a; Kucera 2004; Buskirk 2003; Zielinski 2005).

Given the risks to the marten of implementing the 2004 ROD, it is essential that the Forest Service take a detailed and careful look at the likely impacts on the marten and its habitat of implementing the project. An adequate analysis should address, at a minimum, the following issues. (*See* SNFPC *et al*. 2004, pp. 41-48, 83-85).

- The Forest Service should disclose the amount of marten denning/resting and traveling/foraging habitat currently within the project planning area and the amount of such habitat that will be logged, degraded, and/or rendered unsuitable. The marten inhabits eastside pine forests, so the impacts on marten of logging within these areas must be assessed.

- The Forest Service should disclose the impact of group selection openings on the marten. Given the marten's sensitivity to forest openings, the Forest Service should analyze the percentage of openings within marten habitat before and after project implementation with respect to a threshold of 20-25 percent forest openings, as suggested by the best available research. (SNFPC et al. 2004, p. 43).

- The Forest Service should disclose the existence of marten within the planning area. The apparent absence of the marten from portions of the national forests to the north suggests that forest fragmentation in having negative impacts on marten distribution. The Forest Service should disclose and discuss any local survey information that indicates presence or absence of marten within the planning area.

- The Forest Service should disclose the impacts on marten distribution and viability of removing medium-large trees and large snags and down wood and decreasing canopy cover within the planning area.

- The Forest Service should disclose the impacts of proposed logging on marten habitat connectivity and on the fragmentation of existing habitat, particularly within checkerboard lands in the central and northern Sierra. (SNFPC *et al*. 2004, pp. 38-39). The Forest Service should utilize the habitat modeling and mapping by Zielinski et al. (2005b) to analyze the ecological importance of the project area to the marten at a landscape scale. The South Shore Fuels Reduction Project DEIS should specifically disclose impacts (direct, indirect, and cumulative) to the furbearer network on the LTBMU, including the amount, intensity, and location of proposed logging within the carnivore network. Since existing marten sightings are at low levels on the forest, impacts to the furbearer network from this and other projects will be particularly significant and potentially damaging to future recolonization of the northern Sierra Nevada. (See Zielinski 2005)

- The Forest Service should comply with direction in the 2004 ROD requiring the agency to "minimize old forest habitat fragmentation," to assess fragmentation issues in the [biological evaluation], to assess potential impacts on habitat connectivity, and to consider retaining forested linkages as part of "project-level analysis." (2004 ROD, pp. 53-54). Special attention should be paid to impacts of any proposed DFPZs or road construction on habitat connectivity and fragmentation within the QLG pilot project area, which has been identified by the Forest Service and others as a significant concern. (SNFPC *et al*. 2004, pp. 47-48; 1999 QLG ROD, pp. 8-9).

E. Northern Goshawk

The northern goshawk is a Forest Service Sensitive Species. In the Sierra Nevada, the goshawk breeds throughout the ponderosa pine/mixed conifer, red fir and lodgepole pine vegetation types, and in eastside pine forests on the east slope. (USDA Forest Service 2001, Volume 3, Chapter 3, part 4.4, p. 113). "Northern goshawks require mature conifer and deciduous forests with large trees, snags, downed logs, dense canopy cover, and open understories for nesting, and use forests with dense to moderately open overstories, open understories interspersed with meadows, brush patches, riparian areas, or other natural or artificial openings for foraging." (*Id*., p. 117).

The FSEIS identified that the 2004 ROD could adversely affect goshawk habitat with a particular emphasis on eastside pine habitats. Reduction in basal area without a canopy cover limits in eastside pine types (FSEIS, p. 284) higher reduction in canopy cover (*Id*., p. 285), and simplification of stand structure (*id*.) were all associated with the implementation of the 2004 ROD. The analysis in the FSEIS anticipates that "mitigations to retain higher levels of stand basal area or canopy cover to ensure adequate foraging and nesting habitat within a project area could be incorporated into individual projects." (*Id*., p. 284).

Given the risks identified in the FSEIS, the Forest Service must make a detailed assessment of the likely impacts of implementing this project on northern goshawk and its habitat. An adequate analysis should address, at a minimum, the following issues.

- The Forest Service should disclose the amount and intensity of harvest proposed in goshawk territories.

- The Forest Service should fully disclose the adverse impact of suitable nesting, foraging and post-fledging habitat for each of the identified goshawk areas impacted by this project (*Id.*, p. 285). The South Shore Fuels Reduction Project should disclose plans to enter goshawk PACs and nest areas and explain the justification for such action in regard to meeting fuels and stand density objectives.

- The Forest Service should evaluate goshawk density in the vicinity of the Project and prepare an assessment of the potential for the Project to adversely alter habitat and increase habitat and population gaps. (*Id*., p. 286)

- The Forest Service should consider one or more alternatives to the proposed Project that limit the reduction of canopy closure and basal area to ensure that high quality nesting and foraging habitat is associated with specific territories.

F. Management Indicator Species

The Forest Service is required to monitor the populations and habitat of management indicator species ("MIS") and to analyze the impacts of projects upon these species and their habitat. Monitoring requirements are derived from several sources: the 1988 Plumas LRMP, the 2004 ROD (which amended the LRMP), and applicable planning regulations (36 C.F.R. § 219.19). In addition, the 2004 ROD (p. 70), readopted Appendix E of the 2001 SNFPA FEIS, which establishes monitoring requirements for species at risk ("SAR") as well as MIS. The 2004 ROD established annual population monitoring requirements for numerous MIS and SAR, with which the Forest Service must comply before approving site-specific projects. See Earth Island Institute v. U.S. Forest Service, 442 F.3d 1147, 1173 (9th Cir. 2006); Sierra Nevada Forest Protection Legacy v. Tippin, 2006 WL 2583036 (E.D. Cal. 2006).

The Forest Service should disclose, by year, all efforts to monitor the populations and habitat of MIS and SAR. The Forest Service should analyze these data to derive any population trends. In addition, the Forest Service should analyze the direct, indirect, and cumulative impacts to each MIS/SAR affected by this Project, including amounts and changes in habitat and population.

The South Shore Fuels Reduction Project should not go forward until the Forest Service has obtained and analyzed all required monitoring data for MIS and SAR, including the annual population monitoring data required by the 2004 Framework.

G. Fire and Fuels

The 2004 ROD was based partly on the assumption that logging under the 2001 ROD could not achieve the Forest Service's fuels reduction objectives. However, as demonstrated in the Legacy's appeal of the 2004 ROD, the Forest Service has failed to demonstrate in the FSEIS that logging trees greater than 20 inches in diameter or reducing canopy cover to below 50 percent is necessary to reduce the risk of catastrophic fire. (SNFPC *et al*. 2004, pp. 62-71). Therefore, it is essential that the Forest Service include a careful and detailed analysis of fire and fuels issues in project-specific environmental documentation to justify proposed logging with respect to fuels reduction. The analysis should include, at a minimum, the following.

- The Forest Service should provide estimates of projected flame length, fire resiliency, mortality of dominant and codominant trees, and probability of

initiation of crown fire for each alternative, and disclose the underlying data and rationale.

- The Forest Service should provide estimates of existing and projected fire condition class for each alternative, together with underlying data and rationale.

- The Forest Service should prepare an analysis of impacts on fire hazard based on thinning from below up to a range of diameter limits, beginning with 12 inches in diameter and increasing by 2 inch increments to the maximum diameter limit allowed by the 2004 ROD.

- Based upon concerns raised by leading fire scientists (Stephens and Moghaddas 2005(a) (b), Stephens 2004; Stephens 2003; Stephens 1998; Rice 2005; van Wagtendonk 1996), the Forest Service should provide an analysis of tradeoffs leading to increased fire hazard from increased canopy openings. The Forest Service should disclose specific microclimate effects, including changes in wind speed, humidity, understory re-growth, and maintenance issues in treatment areas as part of the fuels analysis.

- Based on the above research and additional information from the Cone Fire, Raymond 2004, Agee and Skinner 2005, Alexander 2006, and others, there is little evidence that logging trees as large as 20" dbh or extensive overstory canopy reductions, as proposed in the South Shore Fuels Reduction Project, is needed to achieve fire resiliency and positive fire behavior outcomes. The Forest Service should specifically address and respond to the scientific information and opinion indicating that achieving fuels objectives (flame length, lowered rate of spread, and increased height to live crown) does not require logging trees greater than 20" dbh or reducing canopy cover below 50 percent to significantly improve fire resiliency. It appears that on page 8 of the Preliminary Proposal that the desired conditions for fuels objectives for fire resiliency are attainable under the 2001 Framework and a 20" diameter which we request you fully model and analyze.

- The increased fire hazard and probability of scorch on group selection units in and outside of DFPZs should be fully disclosed.

- The Forest Service should provide analysis of fire and fuels treatment outcomes in terms of how these treatments have affected stand density by thinning, prior to asserting additional need for increased logging to meet separate stand density objectives.

- The South Shore Fuels Reduction Project DEIS should disclose the uncertainty surrounding the fuel model outcomes utilized in the analysis (as discussed in the Empire 2005 SCR; The uncertainty around fuel loading characterizations should be fully disclosed and the confidence levels surrounding fuel model outputs which often drive arguments for increased treatment intensity should be fully discussed.

The DEIS should also fully explain the various focuses and bias within each fuel modeling strategy in plain language the public can understand. (See Rice 2005).

H. Riparian Issues and Analysis

Both the 2001 ROD and the 2004 ROD rely upon an Aquatic Management Strategy to protect and enhance riparian and aquatic resources. However, the FSEIS recognizes that the 2004 ROD "may pose higher short term risks to aquatic resources because it prescribes larger amounts of mechanical treatments and greater treatment intensities." (FSEIS, p. 215).

The FSEIS also recognized the need to complete site-specific analyses of cumulative effect of any proposed action on aquatic and riparian resources. (FSEIS, Volume 2, p. 31). At a minimum the Forest Service must evaluate the following in this project analysis.

- The Forest Service should quantify the amount and intensity of timber harvest proposed in Riparian Conservation Areas ("RCAs") and Critical Aquatic Refuges ("CARs").

- The Forest Service should make a finding, supported by evidence in the environmental analysis, that the proposed Project is consistent with the Riparian Conservation Objectives ("RCO") and the standards and guidelines in the 2004 ROD. (2004 ROD, pp. 62-66). This should include a detailed analysis of proposed actions where greater than 5% of the RCA will be compacted and a statement of how this level of compaction is consistent with meeting the RCOs and standards. (FSEIS, p. 210)

- The Forest Service should prepare a cumulative watershed effects analysis that discloses the threshold of concern for the affected watersheds, the level of disturbance contributed by the proposed action and proposed mitigation measures when project activities would cause the watershed to approach or exceed the threshold for concern.

- The Forest Service should assess road conditions for the project area, identify maintenance and restoration needs for stream crossings, and identify maintenance and decommissioning of specific roads.

- The South Shore Fuels Reduction Project DEIS should fully consider impacts of logging and other management activities on critical fire-related ecological functions of riparian areas in the project area (see Dwire and Kauffman 2003).

- The Legacy is opposed to mechanical treatments in the SEZ. The Lahontan RWQCB waiver for waste discharge for timber harvest does not allow mechanical treatments in SEZ, only hand thinning.

- The Forest Service should fully disclose the type and extent of all CWA authorities and agreements between your agency, Lahontan RWQCB and TRPA and cite the Forest Service will comply with said regulations to protect water quality in the Lake Tahoe Basin.

I. Other Planning Issues

The following issues should also be analyzed and disclosed in the environmental impact statement and/or environmental assessment for this Project.

First, the environmental impact statement and/or environmental assessment for this Project should analyze in detail a full range of reasonable alternatives, including alternatives involving less intensive logging than currently proposed. See Sierra Nevada Forest Protection Legacy v. Tippin, 2006 WL 2583036 (E.D. Cal. 2006). In particular, the Forest Service should analyze an alternative that implements the 2001 ROD. Such an alternative is necessary to allow the public and the decision maker to compare directly the environmental impacts of implementing the 2004 ROD and the consequences of implementing the 2001 ROD.

Second, the Forest Service must also make an independent finding in a biological evaluation with respect to the Project's impacts on sensitive species such as the California spotted owl, Northern goshawk, Pacific fisher and American marten. The 2004 ROD and FSEIS did not analyze site-specific impacts and did not fully consider cumulative impacts. As the Forest Service stated in the FSEIS:

> The modeling for the SNFPA provides a relative comparison of bioregional-scale effects of the alternatives on vegetation and habitat over time. It also provides information to the decision maker and public regarding potential spatial effects, for example numbers of PACs potentially treated, acres in home range core areas potentially treated, and so forth. However, the SEIS presents a programmatic level analysis. *Site-specific effects will be analyzed and mitigations measures will be developed when actual projects are planned and designed on the ground. Biological evaluations will also be developed at the site-specific project scale.*

(FSEIS, Volume 2, Response to Comments, p. 118, emphasis added) Similarly, in the November 25, 2003 biological opinion that accompanied the FSEIS, the Forest Service stated:

> The documentation in the FSEIS and this letter constitutes the programmatic Biological Evaluation for sensitive animal and plant species

> that are known or are suspected to occur within the planning area . . . Forest Service policy specifies that Biological Evaluations will be prepared for all project-level actions that are proposed to implement the selected alternative. The programmatic Biological Evaluation will provide a baseline to consider bioregional cumulative effects in these project-level analyses. *These project-level Biological Evaluations will be able to consider the spatial and temporal direct, indirect, and cumulative effects at the local scale and will make independent determinations for each affected sensitive species*.

(Biological Evaluation, p. 2, emphasis added) Therefore, as anticipated in the FSEIS and accompanying biological evaluation, the Forest Service must make new determinations at the project level with respect to species viability and the potential trend towards federal listing. *See, e.g., Sierra Club v. Block*, 576 F. Supp. 959 (D. Or. 1983) ("A programmatic EIS will often be insufficient as it relates to site-specific actions. This may be because it does not contain sufficient detail to satisfy NEPA requirements, or because new information is revealed subsequent to its preparation.").

Third, because the Forest Service made numerous assumptions in modeling the 2004 ROD in the FSEIS that were not incorporated into the plan's standards and guidelines (SNFPC *et al*. 2004, pp. 110-113), the Forest Service should disclose the extent to which the Project is consistent or inconsistent with the 2004 ROD *as modeled in the FSEIS*. For example, the environmental assessment should disclose whether any sugar pine larger than 6 inches in diameter will be removed in SPLATs, DFPZs, or defense zones; whether any trees larger than 20 inches in diameter will be removed in SPLATS; whether any trees larger than 24 inches in diameter will be removed from DFPZs, old forest emphasis areas, or the defense zone; and whether 50 percent canopy cover will be retained within old forest emphasis areas. (*See* SNFPC *et al*. 2004, pp. 111-112). To the extent that the Project is not consistent with the 2004 ROD, as modeled in the FSEIS, the environmental assessment must carefully analyze the differences, including cumulative impacts.

Fourth, the Forest Service should disclose other important Standards and Guidelines contained in the specific Land and Resource Management Plan that are not identified in the 2004 ROD. An explanation of forest plan consistency should be provided with each site-specific analysis.

Finally, with respect to all of the foregoing issues, the Forest Service should analyze the cumulative impacts of the project together with "other past, present, and reasonably foreseeable future actions." 40 CFR 1508.7. In addition to considering logging on public lands, it is essential that the analysis also address logging on private timberlands, particularly within checkerboard areas where private lands are intensively intermingled with Forest Service lands. (SNFPC *et al*. 2004, pp. 95-98). This analysis should include the environmental impacts of maintaining any proposed DFPZs or area treatments, which are reasonably foreseeable future actions.

J. Basis for Historical Vegetation Condition, Stand Density and Forest Health.

The Forest Service should fully disclose the foundation for their restoration vision in addressing targets for desired conditions in forest management projects (Heald 2006, North, In Press 2006). Historic vegetation condition documentation should be fully disclosed and be based upon the best available science. Stand density desired conditions should be based on the current best science and should be species-specific and assessed (modeled) after fire treatments. Forest health concerns should include a spatial analysis of forest-wide disease and pest conditions and should fully consider the ecological role of insect and fungal diseases in terms of normal and necessary ecological processes in a healthy forest. Any definition of a healthy forest must include a healthy population of representative old growth species and habitats.

K. Soil Quality

The Region 5 Soil Quality Standards (FSH 2509.18, 2[1]), the service-wide soil management handbook (FHS 2905.18-91-1), and the LTBMU LRMP provide the regulatory framework that governs soil management in this project. This framework establishes soil properties, conditions, and associated threshold values that are used to avoid detrimental soil disturbance. These soil impacts assessment criteria have a high level of rigor associated with the soil monitoring analysis due to the irretrievable nature of forest soil loss.

The South Shore Fuels Reduction Project DEIS should fully disclose forest plan level soil monitoring results from the LTBMU Forest Plan Monitoring. The DEIS should also disclose soil compaction, soil cover, and large woody debris historic levels and whether existing forest plan violations exist in the South Shore Fuels Reduction Project area. Proceeding from the existing conditions analysis the DEIS should explain in detail how the project will exacerbate or alleviate those conditions. Soil impact mitigation success rates should be fully disclosed based on site-specific conditions in the project area. Soil assessment procedures should be fully disclosed and should follow proper protocols and professional standards.

Conclusion

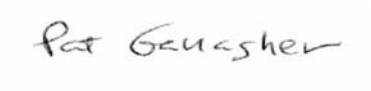
In conclusion, the Legacy requests that it be provided with a copy of the environmental analysis (draft and final), the biological assessment and biological evaluation for plants and wildlife, the fire and fuels report, the vegetation report, CWE or hydrology report, any analysis of MIS/SAR, the soil quality report, any forest plan consistency checklist, and any separate cumulative effects analysis. The Legacy also requests a large format map with treatment units and prescriptions, CWHR types (especially 5D, 5M, 4D, and 4M), and relevant land allocations and designations (owl PACs, owl HRCAs, owl AOCs, goshawk PACs, and forest carnivore network). We also request a list or index to the project file and specifically all state and Federal agency

comments on the DEIS/FEIS. The Legacy requests that these documents be provided as soon as available, preferably in an electronic format on CD or via e-mail. Please provide the map in hard copy as well as GIS format.

Thank you for considering these comments.

Sincerely,

Craig Thomas, Director
The Sierra Nevada Forest Protection Legacy
915-20th Street
Sacramento, CA 95814
(530) 622-8718
craig@sierraLegacy.org



Pat Gallagher
Director of Environmental Law
Sierra Club
85 Second Street, 4th Floor
San Francisco, CA 94105
415.977.5709
415.977.5793 fax

REFERENCES

Agee, J.K., and Skinner, C.N. 2005. Basic principles of forest fuels reduction treatments. In Press: Forest Ecology and Management 2005 211: 83-96

Alexander, M. 2006. Forest Health: Fire Behavior Considerations. Northern Forestry Centre, Edmonton Alberta. Canadian Forest Service (2006).

Barrett, R.H. 2004a. A critique of the Sierra Nevada Forest Plan Amendment final supplemental environmental impact statement and record of decision. April 25, 2004.

Bart, J. 1995. Amount of suitable habitat and viability of Northern Spotted Owls. Conservation Biology 9:943-946.

Bingham, B.B., and Noon, B.R. 1997. Mitigation of habitat "take": application to habitat conservation planning. Conservation Biology 11:127-139.

Blakesley, J.A. 2003. Ecology of the California Spotted Owl: breeding dispersal and associations with forest stand characteristics in northeastern California. Ph.D. dissertation, Colorado State University, summer 2003.

Blakesley, J. A. and Noon, B.R. 2003. Response to Demography synopsis for Cal Owl 12-month finding. Department of Fishery and Wildlife Biology. Colorado State University, Fort Collins, CO 80523.

Blakesley, J.A. 2005. Comments on the Draft Environmental Impact Statement for the Creeks Forest Health Recovery Project. July 10, 2005.

Blakesley, J.A. and Noon, B.R. 2004. Comments on Sierra Nevada Forest Plan Amendment – Final Supplemental Environmental Impact Statement. April 25, 2004.

Blakesley, J.A., Seamans, M.E., Conner, M.M., Franklin, A.B., White, G.C., Gutierrez, R.J., Hines, J.E., Nichols, J.D., Munton, T.E., Shaw, D.W.H., Keane, J.J., Steger, G.N., Noon, B.R., McDonald, T.L., and Britting, S. 2006. Demography of the California Spotted Owl in the Sierra Nevada: Report to the U.S. Fish and Wildlife Service on the January 2006 meta-analysis. Draft report, February 21, 2006.

Bond, M. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 10, 2003.

Buskirk, S.W. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 7, 2003.

Campbell, L. 2004. Thesis: Distribution and Habitat Associations of Mammalian Carnivores in the Central and Southern Sierra Nevada. University of California, Davis.

Chatfield, Andrea H. 2005. Habitat selection by a California spotted owl population: A landscape scale analysis using resource selection functions. M.S. Thesis, Department of Fisheries, Wildlife, and Conservation Biology, University of Minnesota, December 2005.

Raymond, C.L. 2004. Thesis: The Effects of Fuels Treatments on Fire Severity in a Mixed- Evergreen Forest of Southwestern Oregon. University of Washington (2004).

Dwire, K.A., and Kauffman, J.B. 2003. Fire and riparian ecosystems in landscapes of the Western USA. Forest Ecology and Management 178 (2003).

Franklin, A. B., Gutiérrez, R. J., Nichols, J. D., Seamans, M. E., White, G. C., Zimmerman, G. S., Hines, J. E., Munton, T. E., LaHaye, W. S., Blakesley, J. A., Steger, G. N., Noon, B. R., Shaw, D. W. H., Keane, J. J., McDonald, T. L., and Britting, S. 2004. Population Dynamics of the California Spotted Owl (*Strix occidentalis*): A Meta-Analysis. Ornithological Monographs 54.

Gladen, J.T. 2003. Memorandum from James T. Gladen, Director, Watershed, Fish, Wildlife, Air and Rare Plants, to Kathleen Morse, Interdisciplinary Team Leader, Subject: Watershed, Fish, Wildlife, Air and Rare Plants Staff comments on the Sierra Nevada Forest Plan Amendment draft supplemental environmental impact statement. September 12, 2003.

Guldin, J.M. and Stine, P.A. 2003. Science Consistency Review Report Supplement #1. Sierra Nevada Draft Forest Plan Supplemental Environmental Impact Statement. November 7, 2003.

Heald, R.C. 2006a. Comments on the Kings River Project, USDA Forest Service, Sierra National Forest, High Sierra Ranger District. March 28, 2006.

Heald, R.C. 2006b. Comment letter on Empire Draft Supplemental Environmental Impact Statement, Plumas National Forest. April 10, 2006.

Jordon, M.J., K.D. Elowe; R.B. Boone. 2005. Fisher Population Monitoring in the Kings River Project adaptive management area, draft report. Sacramento, CA: California Department of Fish and Game: 27 p.

Jordan, M. 2006 Power Point Slide Presentation on Kings River Project, USDA Forest Service, Sierra National Forest, High Sierra Ranger District

Kucera, T.E. 2004. Comments on the Sierra Nevada Forest Plan Amendment final supplemental environmental impact statement. April 24, 2004.

Kucera, T.E., Zielinski, W.L., and Barrett, R.H. 1995. The current distribution of American martens (*Martes Americana)* in California. California Fish and Game 81:96-103.

Lamberson, R.H., Truex, R.L., Zielinski, W.J., and Macfarlane, D. 2000. Preliminary analysis of fisher population viability in the southern Sierra Nevada. Unpublished report. USDA Forest Service, Pacific Southwest Region.

Lewis, J.C. 2003a. Comments on the Sierra Nevada Forest Plan Amendment draft supplemental environmental impact statement. September 12, 2003.

Lewis, J.C. 2003b. Comments on Fish and Wildlife Service 90-day finding for fisher. August 18, 2003.

Mazzoni, Amie Kristine. 2002. Habitat use by fishers (Martes pennanti) in the Southern Sierra Nevada, California. Fresno, CA: California State University Fresno. Master Thesis.

Moen, C.A. and Gutierrez, R.J. 1997. California spotted owl habitat selection in the central Sierra Nevada. Journal of Wildlife Management 61:1281-1287.

Noon, B.R. 2004. Letter to Jack Blackwell. April 25, 2004.

North, M. 2006. In Press: Comparison of thinning and prescribed fire restoration treatments to Sierran mixed-conifer historic conditions. USFS Sierra Nevada Research Center, Davis, CA. December 2006.

Peery, Z. 2004. Declaration of Zach Peery, M.S. April 25, 2004

Seamans, Mark B. 2005. Population biology of the California spotted owl in the central Sierra Nevada. Ph.D. dissertation, University of Minnesota, October 2005.

Sierra Nevada Forest Protection Legacy *et al*. 2004. Notice of appeal of the record of decision and final supplemental environmental impact statement for the Sierra Nevada Forest Plan Amendment. April 29, 2004.

Stephens, S. L. 1998. Evaluation of the effects of silvicultural and fuels treatments on potential fire behavior in Sierra Nevada mixed-conifer forests. Forest Ecology and Management 105(1998): 21-35.

Stephens, S.L. 2003 Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 9, 2003.

Stephens, S. L. 2004. Testimony before the Resources Subcommittee on Forest and Forest Health. February 28, 2004.

Stephens, S.L. and Moghaddas, J.J. 2005a. Experimental fuel treatment impacts on forest structure, potential fire behavior and predicted tree mortality in a California mixed conifer forest. Forest Ecology and Management. 215:21-36.

Stephens, S.L. and Moghaddas, J.J. 2005b. Silvicultural and reserve impacts on potential fire behavior and forest conservation: Twenty-five years of experience from Sierra Nevada mixed conifer forests. Biological Conservation 125:369-379.

Stine, P.A. 2005 Science Consistence Review for the Empire Project Draft Environmental Impact Statement, Mt Hough Ranger District, Plumas National Forest. July 2005.

Stine, P. A. and Keane, J. 2003. Science Consistency Report. Draft supplemental environmental impact statement, Sierra Nevada Forest Plan Amendment. Content pertaining to California spotted owls as of October 20th, 2003. November 3, 2004.

USDA Forest Service 1993. Viability Assessments and Management Considerations for Species Associated with Late-Successional and Old-Growth Forests of the Pacific Northwest: A Report of the Scientific Analysis Team. March 1993.

USDA Forest Service 1999a. Biological assessment and evaluation of Herger-Feinstein Quincy Library Group Forest Recovery Act. Prepared by Gary W. Rotta, Wildlife Biologist, Plumas National Forest. August 14, 1999.

USDA Forest Service 1999c. Record of Decision. Herger-Feinstein Quincy Library Group Forest Recovery Act Final Environmental Impact Statement. Pacific Southwest Region. August 1999.

USDA Forest Service 2001. Sierra Nevada Forest Plan Amendment, Final Environmental Impact Statement. Pacific Southwest Region. January 2001.

USDA Forest Service 2001. Sierra Nevada Forest Plan Amendment, Record of Decision. Pacific Southwest Region. January 2001.

USDI Fish and Wildlife Service 1999. Comments, review and informal consultation on the draft environmental impact statement for the Herger-Feinstein Quincy Library Group Forest Recovery Act Pilot Project. August 17, 1999.

USDA Forest Service 1999c. Record of Decision. Herger-Feinstein Quincy Library Group Forest Recovery Act Final Environmental Impact Statement. Pacific Southwest Region. August 1999.

USDI Fish and Wildlife Service 2003c. Comments on the Sierra Nevada Forest Plan Amendment, Draft Supplemental Environmental Impact Statement. Sacramento Fish and Wildlife Office. September 12, 2003.

USDI Fish and Wildlife Service 2004. Endangered and threatened wildlife and plants; 12-month finding for a petition to list the west coast distinct population segment of the fisher (Martes pennanti). 69 Fed. Reg. 18769 (April 8, 2004).

van Wagtendonk, J. W. 1996. Use of a deterministic fire growth model to test fuels treatments. Pages 1155-1166 *In* Sierra Nevada Ecosystem Project: Final report to Congress, Volume II, chapter 41. University of California, Davis.

Verner, J., McKelvey, K.S., Noon, B.R., Gutierrez, R.J., Gould, G.I., and Beck, T.W. 1992. The California spotted owl: A technical assessment of its current status. USDA Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-133, July 1992.

Verner, J. 2003. Letter to Regional Forester Jack Blackwell. August 31, 2003.

Zielinski, W.L. 2002. Mesocarnivores: status and conservation issues. Presentation at the Sierra Nevada Science Symposium, Kings Beach, CA. October 10, 2002.

Zielinski, W.J., Truex, R.L., Scmidt, G.A., Schlexer, F.V., Schmidt, K.N., and Barrett, R.H.,. 2004a. Home Range Characteristics of Fishers in California, Journal of Mammalogy, 85(4): 649-657, 2004a.

Zielinski, W.J., Truex, R.L., Schmidt, G.A., Schlexer, F.V., Schmidt, K.N., and Barrett, R.H.,.2004b. Resting Habitat Selection by Fishers in California, Journal of Wildlife Management, 68(3): 475-492, 2004b.

Zielinski, W.J. 2004. The status and conservation of mesocarnivores in the Sierra Nevada. In Proceedings of the Sierra Nevada Science Symposium. USDA Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-193. December 2004.

Zielinski, W.J., Truex, R.L., Schlexer, F.V., Campbell, L.A., and Carroll, C. 2005. Historical and contemporary distributions of carnivores in forests of the Sierra Nevada, California, USA. Journal of Biogeography 32:1385-1407.