

**Comments of the California Resources Agency on the
Sierra Nevada Forest Plan Amendment
Draft Supplemental Environmental Impact Statement
June, 2003**

In January 2001, after more than 10 years of planning and review, all supported by millions of dollars of taxpayer money, the Pacific Southwest Region of the U. S. Forest Service issued its final Sierra Nevada Forest Plan Amendment Record of Decision (the Framework ROD). It employed a cautious approach to fuels management in areas thought to be important to sensitive species and authorized a science-based process for changing that approach when necessary. The result represented a balance in which no single forest value trumped the others, with the possible exception of fuels management immediately adjacent to private lands. The Standards and Guidelines (S&Gs) in the Framework ROD were certainly not perfect for every site in the Sierra – an impossible standard – but the decision incorporated the best thinking of hundreds of dedicated scientists and forest planners along with enormous public input and contained within it methods for its own refinement.

The USFS commitment to the Framework ROD was shallow and short-lived. On November 16, 2001, the Chief of the Forest Service completed his review of the appeals on the SNFPA. The Chief affirmed the SNFPA but directed the Pacific Southwest Region to review three elements of the SNFPA along with concerns raised in the appeals. On December 31, 2001, in response to the Chief's appeals decision, the Pacific Southwest Regional Forester proposed an action plan for conducting the review of the ROD to implement the SNFPA. The SNFPA Review Team concluded its review in March 2003 with a final set of recommendations for "improvements" to the Regional Forester. While the correspondence associated with these events repeatedly stresses "refining the decision", it has become clear that the "certain aspects" targeted by the review constituted nearly the entirety of cautious approach established by the Framework. Under the guise of a supplement, the USFS is proposing an entirely new approach.

The Attorney-General of the State of California has submitted comments which detail our shared concerns regarding the legality of the proceedings pursued by the USFS since January, 2001. The comments of the California Resources Agency complement those of the Attorney-General and of other state agencies by focusing on the factual basis of the purpose and need, the rigor and credibility of the environmental analysis and the existence of management options that promise to solve the problems of the Sierra Nevada, yet remain unexamined by the USFS.

1. The purpose and need for the action remain unsubstantiated.

We refer you to the comments of the Attorney General of the State of California for a detailed analysis of the considerable legal shortcomings of the DSEIS. In our comments we address the factual basis for the purpose and need, particularly the empirical basis for judging the performance of the Framework ROD, the interpretation of demographic data on the spotted owl, the basis for assertions regarding fire behavior and other concerns.

a. The empirical basis for review is virtually non-existent

Early in the Review Team process the State of California asked for a detailed list of all the projects implemented under the 2001 ROD that could serve as the evidentiary basis for changing the ROD. Though we asked for this list repeatedly, the USFS never provide to us this most basic part of the record. Both the Resources Agency and the Office of the Attorney-General were forced to analyze letters sent by the District Rangers to the Regional Forester in order to quantify the nature and number of projects implemented by the USFS during the two and a half years of Framework implementation.

From the letters, we could determine only two Ranger Districts that had begun implementing projects under the S&Gs of the Framework ROD with perhaps three other Districts that had adapted previously planned projects to meet the new decision. While this lack of activity is troubling in itself, particularly in light of the Framework ROD's approval of aggressive fuels treatment in the defense zone, the paucity of projects simply provides no empirical basis for assessing the feasibility of the ROD.

The letters nonetheless provide important insights in the origins of the review and the subsequent DSEIS. As one Ranger wrote,

“Although we have not yet implemented a Framework project, my experience crafting alternatives to address fuels, forest health and wildlife habitats (pre-Framework) tell me that ... we will have difficulty meeting the intent of more old forest.”

While we respect the professional judgment of the Rangers, an assessment of “difficulty” hardly compels one to conclude that the Framework cannot be implemented and therefore requires wholesale revision, as the Review Team and the DSEIS ID Team simply assumed throughout their work.

b. The new information on spotted owls does not markedly change the decision environment for the USFS.

The DSEIS draws the wrong message from the little new information that exists with respect to the demographics of the California spotted owl. Since the cautious approach authorized by the Framework ROD is predicated principally on the precarious status of the California spotted owl, adopting a less cautious approach requires some proof that the California spotted owl is in less dire straits than previously believed.

The DSEIS proposes new demographic data as providing that proof. The table below (taken from the DSEIS) shows the rate of population change for five study areas, as estimated by two different methods:

Table 3.2.2.3a. Comparison of Lambda (λ) Utilizing two methods, Projections Matrix and Capture-Recapture.

Study Area	Years	Projection Matrix		Capture-Recapture		
		λ	95% CI	λ	SE	95% CI
Eldorado	1986-1998	0.93		1.042	0.047	0.950-1.133
Lassen	1990-1998	0.923	0.888-0.958	0.985	0.026	0.934-1.036
San Bernardino	1986-1998			0.978	0.025	0.929-1.026
Sierra	1987-1998	0.898		0.961	0.024	0.915-1.008
Sequoia/Kings	1988-1998	0.94		0.984	0.047	0.892-1.076

In contrasting the two different analysis methods, the DSEIS states (p.112)

“...both methods show a declining trend in populations. The capture-recapture method indicates that the rate of decline may not be as great as originally predicted. However the capture-recapture method is not statistically different than $\lambda = 1$.”

That the population is not declining as fast as previously thought hardly seems a firm basis for dumping a cautious approach to owl habitat.

Similarly the inclusion of 1 within the 95% confidence interval for λ is not a strong basis for eschewing caution. The 95 % confidence interval simply means that given the variation in the data, we have a 95% chance of including the real λ within that range. It is plausible that λ could be greater or equal to one (meaning a stable or increasing population), but given that most of the CI lies below 1 it is certainly as plausible the true value for λ is less than 1.

Given the management situation one ought to ask if it is more likely that the populations are declining, stable or increasing. If we accept as a null hypothesis that $\lambda = 1$, then the t statistic and associated α and β levels for the four populations that are likely to be declining (the Eldorado population appears more likely to be stable or increasing) are

Study Area	T statistic	1 - α	α	1- β
Lassen	0.577	~0.7	~0.3	0.26 ($ \lambda=$.975)
San Bernardino	0.880	~0.8	~0.2	
Sierra	1.625	~0.95	~0.05	
Sequoia/Kings Canyon	0.340	~0.6	~0.4	0.10 ($ \lambda=$.984)

If we assume that the populations were stable ($\lambda= 1$) then the likelihood that the observed λ , all of which are less than 1, occurred simply by chance is given by α . That is to say, the likelihood that the Lassen study area really has a stable population and that the estimated λ ($0.985 < 1$) just occurred by chance is around 30%. Thus it is relatively unlikely (30%, 20%, 5%) that we would have found these estimated lambdas for the Lassen, San Bernardino and Sierra study areas if in fact the populations were stable. While we cannot assert unequivocally that the populations are declining (that assertion, more typically the goal of research, requires α 's in the range of 0.025 or less), the data suggest that it is relatively improbable to have found these lambdas if the populations were stable.

In addition, although we are deeply interested in detecting declining populations, it is relatively unlikely that these data and tests would have permitted us to detect them. The ability of a statistical test to correctly reject a false hypothesis (in this case, to reject the hypothesis that $\lambda = 1$, thereby detecting a declining population) is labeled the power of the test ($1 - \beta$). The generally desired power of a test is 0.80 – one has an 80% chance of correctly rejecting a false hypothesis. If in fact the true λ for the Lassen, San Bernardino and Sierra study areas were the average of the three (0.975), the typical test for significance (i.e. what the USFS was doing with the CI) has a very low power of 25%, that is, has only a one in four chance of correctly labeling as declining a population that is in fact declining.

Thus the data seem to us ambiguous and therefore do not markedly change the decision environment of the USFS from what it was prior to the Framework ROD: while we cannot assert that the populations are unequivocally declining, the estimates that indicate decline are relatively unlikely to have occurred by chance alone in 3 of the 5 study areas. Furthermore, should the populations truly be declining, the data and tests used would have been unlikely to detect them. A cautious approach still is warranted.

As so much depends on these data, with considerable social costs associated with errors in either direction, we wonder why the reduction of scientific uncertainty itself was not raised within the purpose and need, with alternatives created expressly to reduce that uncertainty over time, thereby allowing more finely-tuned management to emerge over time. We will return to this theme later in our comments.

A final note on the owl: citing the decision of the USFWS not to list the California spotted owl as a basis for relaxing forest management constraints, when in fact that decision is in large measure based on the existence of those very constraints, is the height of sophistry, bordering on deception.

- c. The analysis cited by the DSEIS as indicating the ineffectiveness of Framework ROD's fuel treatments in fact shows quite the opposite.

The DSEIS predicates changes in forest management by citing p. 45-51 of the Review Team's analysis of the ROD which purportedly showed incompatibility with National Fire Plan, manifested by supposedly high costs and low effectiveness of fuels treatments.

With respect to the first NFP goal (which involves reducing acres burned by wildfire), the Review Team report states (pp. 46 - 47)

“One of the measures of success...in attaining this goal is the number of high severity acres burned by unplanned and unwanted wildland fires. The analysis of the Middle Fork Cosumnes landscape provides evidence that the current direction will perform poorly under this measure since successful performance is predicated on reducing the number of acres burned.”

“...the Review Team's spatially explicit analysis of the Middle Fork Cosumnes landscape...provides clear evidence that implementing the fire and fuels strategy under the existing suite of ROD standards and guidelines will not significantly reduce wildfire size and intensity across the bioregion.

However, when one examines the Middle Fork results given earlier in the Review Team document (pp.28-29) no such clear evidence appears. The results, such as they are, support quite the opposite conclusion, that the current direction WILL reduce the numbers of acres burned. The analysis cited consists of one ignition modeled with and without fuels management as dictated by the ROD within one 50, 000 acre watershed, chosen explicitly because it, unlike many other watersheds in the Sierra, had not seen a major fire in recent years.

Without the ROD fuels treatments the modeled fire burned 11,781 acres in three periods while with the ROD treatments it burned 8,593 acres. The extent of area burned with lethal and mixed lethal results also declined with the ROD treatments.

Thus the evidence cited contradicts the assertion regarding the ineffectiveness of the ROD's fuels strategy made by the Review Team which did not however prevent that assertion from being carried on in the DSEIS. Furthermore, even if the results had supported the assertion, modeling one ignition within a single watershed covering less than one-half percent of the land area of the National

Forests in the Sierra and chosen exactly because it was NOT representative is meaningless as a basis for assessing the ROD's impact on the bioregion over any span of time.

Yet this entirely unsubstantiated claim of ineffectiveness has become an article of faith within the USFS and has been carried on through subsequent analyses that seek to estimate the extent of burning at the regional level. Estimates of the acres burned by wildfire under the Framework ROD have inexplicably shifted upward between the analysis of the FEIS in support of the Framework and the current DSEIS.

In the FEIS analysis, the preferred alternative (PREF) trends up from ~62,000 acres per year for the first decade, then drops below 60,000 acres per year for the next 6 decades, in contrast to the ever increasing number of acres burned under the no-action alternative (MLV) (see figure 1).

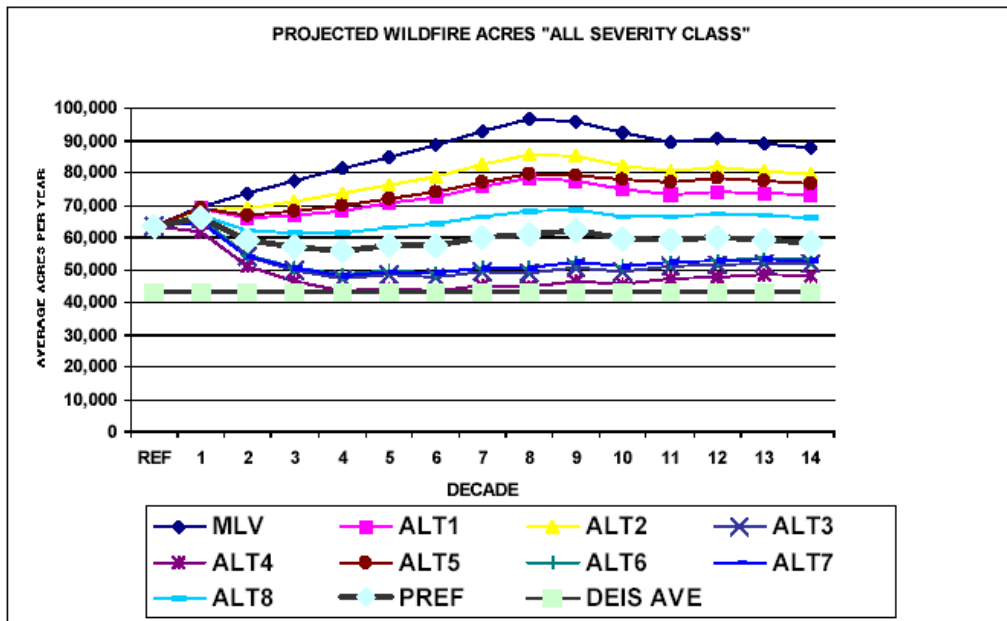


Figure 1 taken from FEIS Vol. 2, Chapter 3, p. 293.

Yet the comparable analysis in the DSEIS shows quite a different result. In this analysis the number of acres burned under the ROD's preferred alternative, now labeled S1, increases and then stays above 60,000 acres over the entire planning horizon.

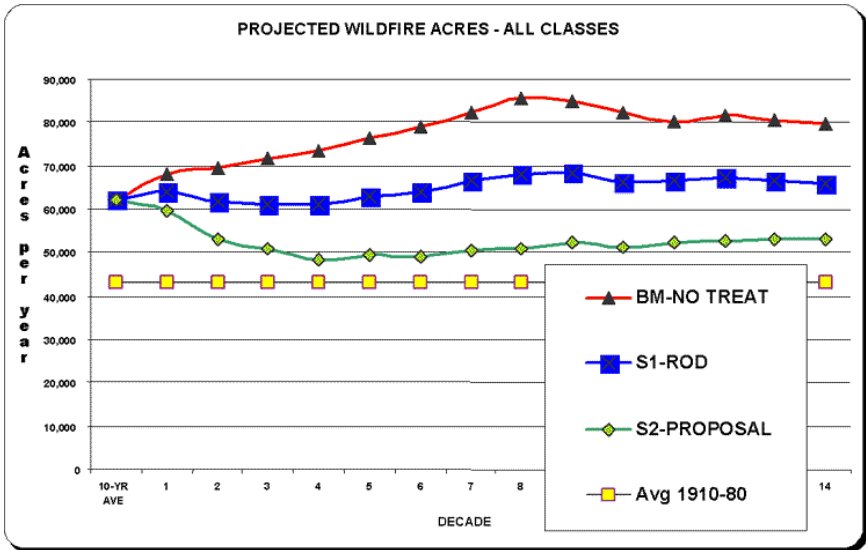


Figure 2 taken from

SEIS p.162

This change in assessment of the ROD is clearly reflected in the assertion by the Review Team (p. 47) that

"on the Eldorado National Forest the number of acres burned by wildfire is projected to increase to over 30,000 acres within 30 year under the current direction."

Setting aside for the moment the issue of how a single NF could possibly have nearly half of all the acres projected to burn within the Sierra, it remains unclear why the DSEIS changed the overall estimate of acreages burned under the ROD. It appears again that the ROD was simply declared ineffective and linear programming did the rest.

It should be noted that regardless of which analysis one uses – that of the FEIS or that of the DSEIS - the ROD is clearly effective in reducing the extent of area burned when compared to no action whatsoever. The FEIS found that it would be effective in reducing burned acres below current levels as well. The DSEIS clearly asserts that it will not reduce burned acres below current levels but it does so without presenting any evidence, the Review Team report notwithstanding. Consequently we see no basis for asserting that the ROD does not meet the first goal of the NFP.

We accept as self-evident that other prescriptions may be more effective than the ROD is dealing with wildland fuels. The treatments called for in the ROD for the Defense zone are certainly more effective than the S&Gs for areas outside the defense zone. But the burden of proof is on the USFS to show that those more effective fuels treatments do not at the same time jeopardize sensitive species.

- d. The assertion that the Framework ROD is inconsistent with Goal 2 of the NFP is unfounded.

Goal 2 on the National Fire Plan is to reduce hazardous fuels. Its implementation outcome is

Hazardous fuels are treated, using appropriate tools, to reduce the risk of unplanned and unwanted wildland fire to communities and to the environment.

From <http://www.fireplan.gov/reports/11-23-en.pdf>

Performance measures include:

- a) *Number of acres treated that are 1) in the Wildland Urban Interface or 2) in condition classes 2 or 3 in fire regimes 1, 2, or 3 outside the wildland urban interface, and are identified as high priority through collaboration consistent with the Implementation Plan, in total, and as a percent of all acres treated.*
- b) *Number of acres treated per million dollars gross investment in Measures a. 1) and a. 2) respectively.*

The Review Team says nothing regarding the Framework's program in the wildland urban intermix but does however take aim at treatment costs (p.47, Review Team report):

"outside [the defense zone] the current standards and guidelines result in higher cost treatments..... treatment costs approximately doubled under current SNFPA direction."

We see no evidence of any such doubling of costs.

- The FEIS (vol. 2/cptr 3 p. 300-301) lists per acre costs as \$700 for manual and \$400 for mechanical
- The Review Team report (p. 43) list regional average per acre costs as
 - \$344 for mechanical service contract with wood removal
 - \$445 for mechanical service contract without wood removal
 - \$600 for manual
 - sets out a range of costs for ROD prescriptions in the Middle Fork analysis as ranging from \$361 to \$787 per acre.
- The SEIS (p. 165) list costs as
 - S1 (current direction) - mechanical , >35% slope - \$600
 - S1 - mechanical, <35% slope - \$350 acre
 - S2 - mechanical, >35% slope - \$550 ("greater operability")
 - S2 - mechanical, >35% slope - \$350

Despite the rather unnerving tendency of the USFS to use different numbers each time it considers the problem even though very little has happened in the field to justify any changes in estimated costs, the per acre costs for mechanical treatment do not appear to differ greatly from the FEIS to the Review Team report to the DSEIS.

When the entire fuels management program costs are considered, the data again contradict the assertion that costs doubled. In the FEIS the preferred alternative, modified 8, treats 68,928 acres mechanically each year in the first decade (p. 297) for a total cost of \$30,982,470 per year (vol. 2/cptr 3 p. 301), for an average cost of \$450 per acre. The DSEIS S1 (which is purportedly the same formerly preferred alternative) mechanically treats 1,566,382 acres and uses prescribed fire on 675,830 acres (DSEIS p. 164) over some unspecified time frame (presumably a decade) at total cost of \$54 million/year.

Note that the annual acres treated mechanically almost doubles from the FEIS to the DSEIS, even though they are both presumably analyzing the same alternative. The DSEIS gives no indication of why these numbers changed so dramatically. This total cost works out to \$240/ac if one assumes a 10 year horizon. If one uses the Review Team estimate for prescribed fire of \$175/acre, the costs for the mechanical treatments alone are around \$42 million per year. Indeed, \$42 million per year for mechanical treatments is more than \$31 million per year, but it 1) poses an increase of 35 % not 100% as claimed by the Review Team, 2) is the result of a near doubling of the estimated annual acres treated (from 68,928 to 156,638), resulting in 3) an even lower per acre cost (\$269/acre).

Yet the Review Team, using the single Middle Fork Cosumnes analysis, states (p. 43-44)

"average costs were projected at \$361 to \$787 per acre. While this is only one analysis, we believe it supports the information provided by the rangers. That is, that the SNFPA standards result in higher average treatment costs."

These statements are simply unsupported on the basis of the evidence: the average costs used by the USFS have not changed dramatically from the ROD through the Review and into the DSEIS. It is quite true that the revenue that would be generated with more aggressive timber harvest would offset more completely the costs, but that offset was known at the time of the ROD. Nothing indicates that the USFS found out upon implementation (which has not occurred) that the costs for the ROD were higher per acre than estimated at the time of the ROD.

The Review Team goes on to explain (p. 47) that if the costs per acre go up, the number of acres that can be treated goes down. This statement is of course

obvious, but in no way proves that the Framework ROD is inconsistent with the National Fire Plan. The NFP performance measures set no standard regarding the cost per acre of fuels treatment but simply requires that they occur, with lower costs per acre, all other things (such as species habitat protection) being equal, presumably better.

While we find the performance and cost analyses of Framework ROD fuels treatments muddled and contradictory, we nonetheless concur that the extent, performance and cost of fuel treatments constitute a central implementation issue. We wonder, instead of responding to the issue of cost, however ineffectively raised, with a silvicultural solution, the fiscal performance of which is mentioned only once in the DSEIS (p. 165), why did the USFS not raise cost directly within the purpose and need and develop a range of alternatives to cover the costs? All parties to the conflict over the management of the Sierra Nevada would have benefited enormously from an honest and wide-ranging exploration of the costs of fuels management and the various funding options. The DSEIS missed a key opportunity by focusing on a narrow, single silvicultural answer to a complex institutional issue.

- e. Experience with the Defense Zone over the past two and a half years indicates that something other than S&Gs or costs is limiting USFS action.

The Review Team did not contest that the Framework ROD was in compliance with the National Fire Plan with its aggressive fuels treatments within the wildland urban intermix (WUI). It found as well that the ROD allowed for technically and economically effective treatment in the defense zone.

We agree, and wonder why so little has happened within that zone over the past two and a half years, even as the NFP has funneled \$40 and 44 million into the USFS in California during FY 2001 and 2002? Beyond the availability of appropriated funds, the ROD S&Gs for the Defense can be implemented with commercial timber sales. CDF analyses of the public and private defense zone within the wildland urban intermix of the Sierra show nearly 50% to be in mature conifer stands. The USFS defense zone which covers 364,000 acres certainly has a higher than average incidence of mature timber, meaning that more than 182,000 acres of timberland could have been treated with commercial timber sales of trees up to 30" dbh since the ROD, generating considerable revenues for fuels treatment elsewhere in the forest.

To our knowledge, few if any such sales have occurred. The inability of the USFS to execute timber sales not unlike those it now proposes for much larger areas far beyond the Defense zone leads us to believe that the factors limiting the USFS response are not treatment effectiveness and cost. We wonder if the true constraints on USFS action, that is, the true purpose and need in the Sierra, are not something other than those factors listed in the DSEIS.

2. The preferred alternative is a major change in direction with significant unexamined assumptions and unanalyzed impacts.

Once again we refer you to the comments of the Office of the Attorney General of the State of California which find that such a large change in direction requires something other than an SEIS. Our concerns involve the open-ended nature of the proposal and the absent or uninformative analysis of its impacts.

a. It is not a refinement but a replacement of the Framework ROD.

The new preferred alternative, S2, maintains the land allocations established by the Framework ROD but erases nearly all distinctions in the S&Gs that the Framework ROD created to reflect the different emphases of the land allocations. Under S2, the same S&Gs apply to all lands except PACs and Defense zone. Arguing that this approach maintains the important distinctions in the Framework ROD is akin to arguing that you can get any color car you want, so long as it is black.

Beyond that, the new desired future conditions (DFCs) recently promulgated by the ID Team for those lands still labeled as Old Forest Emphasis Area (OFEA) and General Forest, which together total millions of acres, are taken from those listed for Alternative 6, not modified 8, in the FEIS. Thus for a large portion of the NF in the Sierra, the DSEIS would establish different DFCs that those established by the ROD. This is akin to stating that we are going on the same trip but to a different destination.

Other recent communications from the ID Team regarding silvicultural S&Gs in Old Forest Emphasis Areas and General Forest indicates a willingness to change S&Gs even beyond that which was done between the FEIS and DSEIS. For instance, the ID Team appears to be considering the use of group selection in SPLATs associated with OFEA, which by the definition of group selection logically entails the harvest of trees greater than 30 in dbh, a limit heretofore considered sacrosanct. At this point we cannot confirm that the ID Team is in fact going to propose the harvest of trees greater than 30 in dbh in group selection harvests, but should the ID Team do so in the FSEIS it is inconceivable that such management could be considered a refinement of the ROD.

b. The DSEIS analysis mischaracterizes S1.

Beyond the issues noted above regarding fuels management, we find that the DSEIS analysis mischaracterizes the Framework ROD in at least three ways.

First we have serious concerns regarding the data used to categorize management options in the Middle Fork Cosumnes model. This concern is

relevant in that the results of the Middle Fork Cosumnes model form (inappropriately, in our view) the basis for many of the conclusions reached by the Review Team and memorialized by the DSEIS. The canopy closure and average dbh within stands determine the allowable prescriptions. The allowable prescriptions then determine the overall physical, biological and fiscal performance of the activities. Different vegetation datasets would necessarily lead to different estimated outcomes for the same alternative. We are concerned that potential inaccuracies of the vegetation dataset used for Middle Fork Cosumnes model may have introduced a systematic bias into the results which has subsequently skewed all regional scale analysis.

Second, we have serious concerns regarding assumptions by the Review Team that within stands with 40-60 % canopy closure in which the Framework ROD prescription that allows removal of 12 dbh trees, with incidental harvest of trees up to 20 in, this allowable prescription collapses back to a biomass treatment with removal limited to trees less than 6 in. This single assumption eliminates the commercial component of treatments over large areas of the forest, yet is based on an assumption that line officers cannot distinguish differences in canopy closure within the 40-60% class. This assumption elevates a transient technical difficulty involving quantification of canopy closure to the level of a fundamental determinant of USFS management over millions of acres.

Third, we strenuously object to the assumption by the Review Team and carried on by the DSEIS that any change from the S&Gs under the Framework requires inordinately expensive research. The Framework ROD (p. 15) states

“Projects that seek variances from the standards and guidelines will be permitted if they are part of a formal adaptive management research project or administrative study done in conjunction with the Pacific Southwest Research Station or another recognized scientific research institution.”

While the FEIS devoted some considerable text to adaptive management, the governing legal decision document, the ROD, provides no further guidance regarding the nature of a formal adaptive management research project. It appears to us that the Region has had considerable latitude since January 2001 to define the nature of formal adaptive management but has chosen instead to pursue widespread relaxation of S&Gs as a quicker route to flexibility. Through the narrow pursuit of agency prerogative, we believe that the USFS continues to miss important opportunities to define and implement adaptive management, an innovation that is seen as central by nearly all the stakeholders in the Sierra.

- c. The DSEIS proposes wholly new categories of activity but fails to analyze their impacts.

In addition to strategically-placed area treatments, which were part of the Framework ROD, the preferred alternative (DSEIS, p. 47) includes a new category of activity not included in the ROD or the FEIS: "forest health treatments". The DSEIS offers no guidance regarding the criteria to be used for engaging in forest health treatments which can be implemented using the same, presumably revenue-generating, prescriptions for fuels treatments. The DSEIS notes that up to 3.2 million acres of timberland, much of it with stand conditions conducive for owls, could be the target of such treatments (DSEIS, p. 187). Although the text suggests that only a small extent will be treated due to budget limitations, if the treatments are revenue-generating (which is presumably the reason for their use in lieu of S1), why would budget limit forest health treatments? And if budget ceases to be a constraint, no guidance contained within the DSEIS sets any bounds on the scale of a forest health treatment program.

We do not disagree with the assertion that forest health is a critical issue. However, the purpose of an EIS is to provide guidance for the implementation of the program based in part on an assessment of its potential impacts. Neither guidance nor impact assessment related to forest health treatments are presented in the DSEIS.

- d. The DSEIS increases the risk experienced by a state-list endangered species, the willow flycatcher.

While our comments focus on forest fuels and wildlife species, the preferred alternative impacts other values as well. We specifically refer you to the comments of both the California Department of Fish and Game and Partners in Flight, regarding the heightened risk posed by S2 to the willow flycatcher.

- e. The DSEIS systematically eliminates all the S&Gs that the USFWS found protected owl habitat to such an extent that listing was not warranted.

Lastly, though we will leave to others the detailed assessment of the preferred alternative's impact on the California spotted owl, we remind you that the decision by the USFWS in February, 2003 not to list the owl was based as much on an assessment of the likely impacts of USFS management on habitat features important to the owl as on a review of demographic information.

The demographic picture remains murky – not being able to prove a decline is not equivalent to proving that populations are stable – yet the preferred alternative removes nearly all the S&Gs established in the 2001 ROD that the USFWS singled out as safeguards in its decision of February, 2003 not to list the species. The preferred alternative seems to guarantee another petition to list,

one which will be difficult to deny on the basis of logic already employed by the USFWS.

The key elements of the USFWS assessment (taken from the Federal Register Vol. 68, No. 31):

The prescriptions for the Defense zone under the Framework ROD are likely inimical to owls (p. 7600):

“The primary area where fuel treatments would remove large trees and reduce canopy cover to the point of unsuitability for owls would be the Defense zone of the wildland/urban interface.”

In the proposed preferred alternative, S2, the forest-wide prescriptions (i.e. for all lands other than PACs, including old forest emphasis areas and home range core areas; pp. 307-309 of the DSEIS) are more aggressive than the prescription for the Defense zone under the ROD. It is difficult to imagine how an analysis using the precepts of the USFWS would not find the DSEIS prescriptions extremely threatening to the owl as these more aggressive treatments, once confined to 0.25 miles around settled areas in the ROD, now apply to fuels treatments across most of the land base.

The USFWS found merit in the Framework ROD’s S&Gs outside the defense zone (p. 7600):

“The primary aspects of fuels treatments that would potentially affect spotted owl habitat are (1) removal of trees larger than 51 cm (20 in.) diameter which may reduce the number of existing and potential nesting trees and large diameter snags and logs with an accompanying reduction of canopy closure; and (2) removal of trees 30 – 51 cm (12 to 20 in.) in diameter, with resultant reduction in canopy closure and perhaps to a lesser degree, reduction in numbers of existing nest trees and recruitment of potential nesting trees and large diameter snags and logs.”

“Throughout the area of the SNFPA, a general S&G precludes the removal of any tree over 76 cm (30 in.) dbh. The prescriptions that would allow any extensive harvest of trees over 51 cm (20 in.) dbh... are confined to the Defense zone....most of the effects of the SNFPA on large trees are confined to the Defense zone...”

The forest-wide prescription of S2 conserves the 30 in dbh limit, but allows the harvest of trees up to 30 in dbh throughout the forest, provided that one leaves those larger trees that contribute 40 % of the pre-treatment basal area. The DSEIS presumes that the basal area constraint would frequently lower the effective harvest limit to a dbh smaller than 30 in. but the margin of safety

provided by the Framework ROD certainly disappears under S2. Impacts on large trees under S2 will occur throughout the forest.

“Therefore, since the effects on large trees are limited, most of the effects of the SNFPA would be anticipated to result from the harvest of trees in the 30 to 51 cm (12 to 20 in.) size class...As a result of the [nesting site and PAC] protections, the primary effect of removal of trees 30 to 51 cm (12 to 20 in.) dbh will be in foraging areas, rather than at nest sites. [Because of the prescriptions associated with home range core areas] effects on the spotted owl of removal of trees 30 to 51 cm (12 to 20 in.) are expected to be limited.”

This conclusion cannot apply to S2 are the removal of trees 30 to 51 cm (12 to 20 in.) is clearly allowed in foraging areas.

The USFWS further states (p. 7601):

“Another important effect of fuel treatments may be reduction in canopy closure...”

“As a result of the [range of forest wide canopy reduction constraints] opportunities for reduction of canopy closure by more than 10 percent outside the Defense zone would be limited to areas outside home range core areas...”

“The analyses of the data by both Hunsaker et al. (2002) and Lee (2001) found that canopy cover of at least 50 percent was desirable [for foraging]; that level would be maintained by the S&Gs in all areas but the Defense zone.”

The forest-wide prescriptions of S2 allow reductions of up to 30 percent in canopy closure with a lower limit of 40 percent. Thus virtually all of the S&Gs of the Framework ROD that the USFWS deemed as protection for key habitat elements for the spotted owl are eliminated in S2.

Even the DSEIS anticipates the potential negative impacts on owl habitat: the DSEIS (pp. 186) shows declines in owl habitat over the next twenty years. It anticipates an increase in habitat in year 130 – a result we find both suspect - we have serious doubts regarding the assumed ineffective of Framework ROD fuels treatments – and irrelevant – climate change and random chance render projections 130 years in the future absurd as a basis for a decision today. What remains clear is that S2 will likely destroy owl habitat over the next twenty years.

3. The USFS should include in its analysis alternatives that meet the real resource and institutional challenges of the Sierra Nevada.

After years of involvement in the Sierra, it appears to us that real solutions to the management of the Sierra Nevada must include a) flexibility coupled with accountability, b) continuous monitoring and development of new understanding, and c) financial linkages to the multiple beneficiaries of the Sierra. S2 creates license at the local level (i.e. flexibility without accountability), make no programmatic commitment to monitoring and adaptive management and relies entirely on the forest to pay for a century of fuels buildup. If the USFS insists on pursuing the current NEPA analysis (which would not be our choice) we believe that a variety of other options would provide a better return on investment than S2.

- a. The USFS should fully develop Alternative 2.2.6 – Make Minor Changes to Individual S&Gs – as it is a logical response to the problems highlighted by Review Team analysis.

The Middle Fork Cosumnes modeling framework provided a credible and transparent means of investigating the performance of the Framework ROD on a specific landscape. While we have serious concerns regarding the extrapolation of Middle Fork Cosumnes results to the larger Sierra region, we found the analysis of that particular waterscape extremely illuminating. It had the potential to highlight the impacts of spatially-explicit management proposals on subsequent fire behavior, stand development, wildlife habitat and revenue.

The results of the Middle Fork Cosumnes analysis, at least as far as the Review Team staff was able to pursue it, indicated several S&Gs that could have been problematic in that watershed (pp. 33-35, Review Team report). Among these were S&Gs - specifically those that the Review Team contended caused threat zone prescriptions to collapse from commercial timber harvest to biomass treatments with severe financial consequences - which if changed would have led to entirely different conclusions regarding revenue shortfalls. At the same time the modeling procedure provided a mechanism to test alternative prescriptions (such as altering problematic S&Gs) which could either have been considered non-significant amendments to the forest's plan or, should they have been more controversial, the focus of a formal adaptive management project. Had the ID Team used the Middle Fork methodology on a range of representative watersheds across the Sierra, it is at least possible that it could've developed a substantive case for the alteration of several specific S&Gs across the whole region.

The reason given by the DSEIS for not considering Alternative 2.2.6 – that it does not respond to the purpose and need – is without basis as the purpose and need are largely unsubstantiated. The DSEIS cites the “prescriptive nature of existing management direction” as a problem yet we find no evidence indicating that “prescriptive-ness” is a generically bad thing when speaking of guidance. It cites “economic inefficiencies” when in fact no standards for efficiency can be

located, and in face of the possibility that small changes in S&Gs could have a large positive impact on revenue. It cites “complications with implementation” which are nowhere explained in the Purpose and Need of the DSEIS. Finally it cites “questionable effective of fuels treatments”, a conclusion for which we can find little support within the DSEIS.

- b. The USFS should formalize the Middle Fork analysis process as an alternative focused on developing locally appropriate management prescriptions

Formalizing the Middle Fork analysis procedure and applying it wherever local managers suspected that Framework ROD S&Gs were inappropriate appeared to us to be an extremely promising route for the USFS in that it linked flexibility to rational analysis process. Despite numerous suggestions to the USFS regarding the wider use of this analysis as a solution to its problem (e-mails of 11/18/02, 11/22/02, 12/10/02), the USFS persisted in considering the Middle Fork Cosumnes analysis as a means to demonstrate the existence of systemic problem (which we contend it failed to do) to be solved by reliance on local professional judgment, instead of as a powerful tool by which local interests could examine and adopt changes to the Framework ROD S&Gs.

- c. The USFS should investigate a renewed commitment to adaptive management in order to attack the fundamental scientific problem in Sierra forest management: continuing ignorance regarding the status of old forest species and particularly their response to fuels treatments.

The emphasis of the DSEIS is on relaxing S&Gs and returning prerogative to local management and therefore it decreases the emphasis places on adaptive management by the Framework ROD (p. 56, DSEIS):

“Under Alternative S2 standards and guidelines consider local conditions, which reduces the need to change management direction through adaptive management projects. However, an adaptive management project is still possible in Alternative 2.”

As the science regarding species response to treatments is ambiguous at best, we are at lost to imagine how local managers will able to craft management appropriate to local conditions with a high degree of certainty that they are not jeopardizing species at the regional scale.

As noted above, we find that the underlying uncertainty regarding the response of sensitive species to fuels management remains as prominent as ever. We also

agree that one should not wait until experiment station-type research reduces that uncertainty to the vanishing point as inaction now carries with it potentially large social costs. The solution therefore requires a systematic attempt to learn-while-doing. Such a wide-spread and systematic linkage of management and monitoring is indeed novel and not a likely choice of an institution that relies on a set of hierarchically tiered decision documents and guides. Yet it is what is required to lower uncertainty and to discover management that is both locally appropriate yet likely to achieve region-wide goals related to habitat.

Collaborative adaptive management provides a framework within which to resolve the “prescriptiveness” that so vexes line managers:

“I’ve stressed the need ...to place more emphasis of the desired condition over a landscape and be very limited on prescribing how to achieve that desired condition....When you try to apply standard prescriptions across a vast area as such as the Sierra Nevada, you’re bound to run into problems”

While conceptually appealing, this approach is of course based on the shaky assumption that we can unequivocally describe for all sites the forest structures that will achieve all our multiple goals. In fact our uncertainty regarding owl habitat requirements, post-treatment stand response and fire behavior is why the Framework ROD used a combination of generalized DFCs and specific prescriptions. We know with great certainty that we wish owls to persist and damage from wildfires to decline. We believe that certain forest structures are conducive for owls and others for lower wildfire intensity but we rely on best management practices as tactics that promise to move us toward our objectives and goals.

Collaborative adaptive management however offers the opportunity to make explicit alternate management proposals regarding the linkage from tactics to objectives to goals, and to treat those management proposals as hypotheses to be tested on the ground. As we noted repeatedly to the Review Team, we did not expect the Framework ROD’s preferred alternative to be perfect everywhere. The solution to that problem however was not to relax standards everywhere, but rather to create a process that offered a rational method for assessing and then approving changes to the ROD’s S&Gs.

The Resources Agency has invested considerable time and energy in proposing a workable adaptive management program (attached) for the wildland-urban intermix, a relatively large zone within the Sierra where the costs of failure are quite high in terms of both habitat and public safety and where there appears to be the greatest willingness on the part of all parties to experiment. USFS staff has appeared reluctant to adopt this or any other clearly delineated program, though the goals and objectives of the program appear in the DSEIS. While the

USFS would like to achieve the goals and objectives outlined by the State, it appears reluctant to invest the resources needed to obtain the benefits.

- d. The USFS should develop a range of alternatives specifically directed at the funding issues associated with fuels management.

The Review Team bases much of its critique of fuel treatments on cost (p. 47, Review Team report) and the DSEIS references “appropriated funds” as a key constraint for both fuels management (p. 165) and forest health treatments (p. 187). Since cost is a major factor, the USFS would have done well to quantify the amount of fuel treatment required to achieve different degrees of control over fire behavior, specify the amount of funding already programmed for the Region under the National Fire Plan and other programs, then outline a range of alternatives designed to cover the shortfall. In its most stark form such an analysis would have made clear, in the absence of any additional funding, the scale of commercial forest harvest needed outside of the Defense zone to achieve different levels of fuels treatment with their concomitant potential threat to wildlife. At least in that form, we would have found that the three issues of fire protection, habitat protection and cost were honestly and thoughtfully investigated.

We are however convinced that other options exist to cover some, if not all, of the shortfall. First of all, we would quite be interested in seeing if the NFP funds allocated to the USFS for California are not in fact sufficient to cover the shortfall. The DSEIS lists the additional revenue generated by S2 over that of S1 to be \$26 million per year. The NFP allocated \$40 million to California in FY01 and \$44 million in FY02. It is not unreasonable to expect an alternative that investigates the degree to which the NFP funding can achieve the goals established for the program in the Sierra.

In addition, the federal Secretaries of Agriculture, Interior and Energy recently signed an MOU

“to demonstrate a commitment to develop and apply consistent and complementary policies and procedures across three Federal departments to encourage utilization of woody biomass by-products that result from forest, woodland, and rangeland restoration and fuel treatments when ecologically, economically, and legally appropriate, and consistent with locally developed land management plans”

While the MOU does not obligate new money, it does commit the three Secretaries to

- *Encourage the production and marketing of electric energy generated from woody biomass resulting from restoration or hazardous fuels treatment...*

- *Explore biomass transportation cost subsidies from the forest to point of use, where doing so saves or avoids higher costs of treatments or fire-fighting in the future.*

Thus it appears to us that due diligence would require the USFS to investigate the opportunities created by the MOU, particularly in light of California's recent adoption of a Renewable Portfolio Standard (SB 1078) which mandates 20% of investor-owned utility electricity to be generated from renewables sources by 2017.

In addition, California voters recently passed Proposition 50 which provides funding for, among other things, watershed management planning and implementation. Section 30945 of the California Public Resources Code establishes a program for integrated watershed management to

*“improve water quality, protect and restore habitat and fisheries, reduce flooding, control erosion and sedimentation, and improve local water supply reliability through better ground water monitoring, river corridor recreation, **forest land and fuel management** [our emphasis added], and hydropower management.”*

These state-level initiative present yet another way to cover the shortfall. While the USFS could not unilaterally implement an alternative based on these options, it could certainly investigate the development of such an alternative in collaboration with state agencies.

In conclusion, our experience to date with the Review and now the development of the SEIS indicates to us a preconceived management direction to be imposed on the Sierra Nevada and Californians by fiat. This entire exercise has been extremely frustrating as we have seen considerable time, staff energy and resources consumed in an effort to return to a status quo ante, even as the situation the effort purports to address deteriorates though the lack of resources and management attention.