



Sierra Forest Legacy

Protecting Sierra Nevada Forests and Communities



February 20, 2009

Department of Fish and Game
Wildlife Branch
1812 Ninth Street
Sacramento, CA 95811
FAX: 916-445-4048

Re: Comments on the Negative Declaration and Translocation Plan for the Reintroduction of Fishers to Sierra Pacific Industries Stirling Management Area

Dear Mr. Koch:

The following comments on the negative declaration (ND) for the reintroduction of fisher to the Stirling Management area are submitted on behalf of Sierra Forest Legacy, Defenders of Wildlife, and Center for Biological Diversity. We appreciate the opportunity to comment on the translocation plan and ND. We note that the Department's staff has been especially helpful in discussing the project with us and filling information requests. We recognize and appreciate the additional time and effort such requests require of your staff.

In our preparation of these comments, we have reviewed the negative declaration and the translocation plan prepared by the California Department of Fish and Game ("the Department"). We also reviewed a draft study plan received from Roger Powell on February 13, 2009, and the decision documents issued by the US Fish and Wildlife Service in their approval of the Candidate Conservation Agreement with Assurances (CCAA). As a general matter, we agree that wildlife reintroduction projects can be an effective tool for reducing the risks to isolated populations of wildlife. We, however, do not support the reintroduction project as currently designed for a number of reasons including the unacceptable risks to the donor population, the poor quality of the habitat into which the fisher will be introduced on Sierra Pacific Industries property, and the uncertainty in the Department's ability to implement the project. We also question the appropriateness of conducting a reintroduction at all since a comprehensive review of the range of conservation actions available to enhance fisher populations, including an assessment of economic and biologic costs, has not been completed. These concerns indicate to us that the likely negative effects to the donor populations far outweigh the speculative benefits from the reintroduction to fisher.

We would consider supporting a reintroduction project that included:

- A comprehensive assessment of the appropriateness of conducting a reintroduction project compared to other conservation actions demonstrating that found reintroduction to be the best approach to enhancing the fisher populations in California;
- A critical review of the demographic parameters used in Powell and Zielinski (2005), as recommended in that paper;

- Translocation into an area that provides the highest quality habitat in the northern Sierra Nevada region regardless of ownership;
- Adequate commitments for funding the research and monitoring that is the basis for this project; and
- A commitment from the land owner on to which the animals were being reintroduced to provide open access to forest inventory data.

ISSUES DESCRIBED IN DETAIL

I. Need for a Comprehensive Assessment of Appropriate Conservation Actions

The ND and translocation plan presume that the reintroduction of fisher onto industrial timber lands within its historic range is “a significant opportunity to reduce the risk to extant populations in the state.” The claim of the reintroduction as a “significant opportunity” is not supported by evidence in the translocation plan or ND. Even though a stated objective in the translocation plan is to “consider the efficacy of reintroduction vs. augmentation,” we find no analysis or discussion of “augmentation” in the plan. Rather the plan simply concludes at the end that “reintroducing fishers to SPI lands near the fringes of their contemporary range was considered, but was rejected in favor of releasing animals on other SPI lands that are effectively isolated from existing fisher populations.” (Plan, p. 59). We have no basis to evaluate why augmentation was rejected.

Comments on a draft translocation plan submitted by William Zielinski, fisher scientist active in California, in August, 2007 clearly identified that specific questions needed to be answered as part of the feasibility assessment for any reintroduction. He stated that:

“...unexplored in this document is whether reintroduction is justified to fill the gap. Why does the gap exist? Is reintroduction a valid option when the reason for the distribution gap may not be understood? To paraphrase my colleague, Steve Buskirk: If we allow fishers to colonize distributional gaps from adjacent areas via dispersal, we can reasonably conclude that they find the areas suitable. If, however, fishers are placed in the middle of gaps and provide some monitoring for a few years, what does that tell us?”

These questions and perspectives raised by a fisher expert were not addressed in the final translocation plan. In fact, it appears that the final translocation plan removed references to the importance of connectivity and spatial arrangement of suitable habitat in evaluating areas considered for reintroduction that had been included in the draft plan.¹ The translocation plan provides no evidence that the proposed action is a “significant opportunity to reduce the risk to

¹ See comments from Bill Zielinski (p. 1): “As the document states, on page 20: “An understanding of the connectivity and spatial arrangement of suitable habitat in California is critical to their conservation and necessary to evaluate the suitability of areas considered for reintroduction (Green et al. 2006).” I agree...” This reference to Green et al (2006) does not appear in the final translocation plan.

extant populations in the state” and comments from a fisher expert raise significant concerns about its efficacy.

The ND and translocation plan also fail to evaluate conservation alternatives to translocation onto industrial timber lands, including such actions as translocating fishers onto Forest Service lands that have significantly higher habitat quality (as demonstrated in the translocation plan) or focusing conservation actions on improving habitat quality and accessibility to areas adjacent to those already occupied by fishers in an effort to facilitate their migration naturally. Each of these conservation approaches have biological costs and benefits that should be weighed before investing resources, including fishers, in a specific action. Such an assessment has not been completed for fisher.

The translocation plan refers to recommendations made by the Interagency Fisher Biology Team to expand and re-establish fisher populations and states (p. 10):

The framework recommended reintroductions be considered for unoccupied portions of the fisher’s historic range that are capable of supporting self-sustaining populations and are unlikely to be recolonized. It further recommended the completion of feasibility assessments prior to the reintroduction of fishers to Oregon and California.

Despite acknowledging these recommendations, the current translocation plan fails to address them in important ways. First, the recommendation directs that reintroductions be considered in unoccupied area “capable of supporting self-sustaining populations.” This criterion for the selection of an area was not discussed or applied in the translocation plan. Instead, the areas to be selected were limited to the industrial timberlands owned by Sierra Pacific Industry (SPI) which, as demonstrated by the habitat analysis in the translocation plan, contain habitat of much lower quality than the adjacent public lands. Second, the translocation plan did not address the likelihood of the SPI lands supporting self-sustaining populations. Rather, the plan selects the best of the five areas proposed by SPI. Third, the recommended feasibility assessment has not been completed. The recommended assessment referred to by the Interagency Fisher Biology Team was based on the Washington assessment that evaluated habitat across ownership and did not limit consideration to a narrow selection of private land as was done in the translocation plan.

We support the Department’s desire to invest in fisher conservation, and we agree that improving the stability of extant populations is critical to the persistence of fisher. The limited funding and resources, e.g., the lives of fisher, must be invested in the most effective manner. For these reasons, we believe that it is critical to complete a comprehensive assessment that addresses first the question of reintroduction as an appropriate conservation action, and second, an evaluation of the best location for such a reintroduction.

II. Risks to the Fisher Donor Population

The ND primarily relies on the results in Powell and Zielinski (2005) to conclude that the removal of fisher from the northwest California region “will not substantially reduce the number, and it will not negatively affect the range, of fishers in northwestern California.” Powell and Zielinski (2005), however, identified several steps that should be taken prior to a reintroduction

project. Among these recommendations was “a more critical examination of the characteristics of the northwestern population to validate our modeling assumptions, especially in regard to the effect of timber harvest on life history parameters and to incorporate the effects of a local population decline.” (Powell and Zielinski 2005, p. 7). This critical examination that was recommended in this study was not addressed in the translocation plan or the ND. The translocation plan (p. 57) acknowledges a reported decline in fishers on the Hoopa Indian Reservation compared to the late 1990s, but provides no data to evaluate this phenomenon and relies on “incidental sightings” from Green Diamond holdings to suggest that the population as a whole has not declined. The translocation plan and ND also do not address the concern raised in Powell and Zielinski (2005) regarding “the effect of timber harvest on life history parameters.” Additional modeling and further testing of the elasticity of key variables could demonstrate that removal of individuals has a greater affect on the donor population than estimated in the paper and relied upon in the translocation plan and ND.

The translocation plan and ND also rely on information from trapping levels for fisher populations in the northeastern United States and in British Columbia to justify the removal rates discussed in the translocation plan. The population referenced in northern Wisconsin exceeds 14,000 individuals with density of greater than 1 animal per 1,200 acres. (Rolley et al. 2008, p. 1). Significant growth has been documented for this population since the early 1990’s (Ibid.) and managed harvest has been used to control population levels. This population is in no respect comparable to the population in northwestern California for which declines within subpopulations have been noted and where there is no documentation that the population has grown. The translocation plan and ND also reference a study from British Columbia (Weir 2003) to support harvest levels of 15%. This harvest rate was discussed by Weir in reference to pre-trapping population levels. The statement also was speculative, based on the similarity between fecundity rates for a population in Minnesota to the limited estimates for the British Columbia population. This example from British Columbia does not adequately justify the levels of removal proposed in the translocation plan and ND since the context for its application and the status of the two populations are not comparable.

Neither the translocation plan nor the ND adequately evaluates the risks to the donor population of fishers in northwestern California. The comparisons made to harvest/trapping rates in other regions are not valid since the health and status of those populations are not comparable to the population in northwestern California. Further, the “critical analysis of the northwestern population to validate [the] modeling assumptions” recommended by the authors of Powell and Zielinski (2005) prior to the initiation of a reintroduction project has not been completed. To remedy these deficiencies, the ND and translocation plan should undertake a critical review of the life history parameters used in the modeling by Powell and Zielinski (2005), evaluate the effect of timber harvest on these demographic parameters, and address the health concerns raised for the various subpopulations of fisher in this region.

III. Poor Habitat Quality of the Stirling Management Area

The translocation plan clearly demonstrates that based on recent peer-reviewed and published habitat models, the Stirling Management area has generally low amounts of highly suitable habitat. When compared to adjacent public lands, it is also clear that highly suitable

habitat exists on public lands to the east in greater abundance. Despite the recognized low abundance of highly suitable habitat, the plan selects the Stirling Management area for the site of reintroduction. Concern about such an approach was raised in comments submitted by Zielinski (2007, p. 2) on the draft plan:

“If the case can be made that reintroduction is justified, logic and the precedent set by most other reintroductions, dictates that it should occur at sites with the best probability of success. The proposed reintroduction plan is in direct conflict with the best available science in this regard. The models of Carroll and Davis et al. identify areas with highest landscape habitat suitability, yet these were not considered.”

For reasons about which we can only speculate, the Department’s consideration of a reintroduction on these significantly higher quality public lands appears to have been an afterthought and not a part of the intended selection process. The Forest Service was approached by the Department after the development of the reintroduction project on SPI’s lands was formulated and indicated an interest in reintroduction on federal lands. (Plan, p. 24). There is nothing to suggest that a reintroduction onto the significantly more suitable federal lands was not feasible.

The translocation plan indirectly relies on the anticipated development of habitat classified by SPI as Lifeform 4² to provide suitable habitat for fisher. The indirect connection to the development of Lifeform 4 is established by the Department’s reliance on the Candidate Conservation Agreement with Assurances (CCAA) issued by the U. S. Fish and Wildlife Service to provide conservation benefit to fishers. (Plan, p. 7). The CCAA has been issued predicated on the expectation that SPI will increase the availability of Lifeform 4 from 23% to 33% of the Stirling Management area within the 20 year period of the agreement. Based on proprietary analysis provided by SPI (i.e., there has been no independent review of this information), the CCAA claims that this increase in Lifeform 4 is expected to increase the amount of resting and denning habitat and create a conservation benefit for fisher.³ (U. S. Fish and Wildlife Service 2008, p. 5).

A close examination of the amount of Lifeform 4 in areas of SPI’s ownership now occupied by fisher compared with the Stirling management area suggest that high amounts of this lifeform are not highly correlated with fisher occupancy. The Weaverville telemetry study results presented in the CCAA indicate that very low amounts of Lifeform 4 (2%) exist in the home ranges of six female fisher. (U. S. Fish and Wildlife Service 2008, p. 13). These home ranges are dominated by Lifeform 2 (83%). (Ibid.) SPI’s Lifeform 2 includes small diameter, moderate to closed canopy stands, and large diameter, moderate canopy stands. (U.S. Fish and Wildlife Service 2008, p. 12). Since the large diameter stands have been lumped with the small diameter stands, it is not possible to evaluate the contribution of large diameter stands to the

² The lifeform descriptions are a construct of SPI’s management practices and have not been published in peer-review literature.

³ For the record, we dispute the claim made by the US Fish and Wildlife Service that Lifeform 4 as characterized by SPI reflects suitable resting and denning. SPI’s assessment is based on an evaluation of den, rest, roost, and nest sites of six different species (including fisher), but is not specific to fisher. Also, as evidenced by the rest site analysis completed in the translocation plan, an extremely low percentage of the inventory plots managed by SPI meet the characteristics of resting and denning sites noted in Zielinski et al. (2006).

habitat used in the six female home ranges. This component of the Lifeform 2 may be important in ways that are not recognized by the CCAA due to fishers' dependence on large structures for nesting and denning. Furthermore, the female home ranges as modeled by Davis et al. (2007) are largely dominated by habitat of medium to high suitability. (Plan, p. 40). This is in direct contrast to the Stirling Management area which has very little medium to high quality habitat as modeled by Davis et al. (2007). (Ibid., p. 35). These discrepancies in habitat characterization and assessment suggest that the Lifeform 4 may not be a good predictor of habitat quality or occupancy for fisher. As a result, relying on increases in this lifeform as a conservation benefit to fisher is questionable. We find it surprising that the Department did not present information on the distribution of SPI's lifeforms in the various assessment areas since other SPI data was used to reflect the abundance of specific habitat elements. Presenting the SPI lifeform data in comparison to other data in translocation plan would illustrate the variance between the type of habitat actually used by female fishers, as modeled by Davis et al. (2007), Lifeform 4 that SPI associates with denning and resting, and the habitat condition of the Stirling Management Area.

We are particularly disturbed by the Department's insistence on reintroducing fisher into some of the least suitable habitat in the northern Sierra Nevada. As pointed out by Zielinski (2007), reintroductions come at a great cost to the public who supports them financially and the population of fishers which supplies animals. To invest these limited and valuable resources in locations that indicate less than the highest degree of success is incomprehensible.

IV. The Feasibility of the Study Has Not Been Demonstrated

The translocation plan claims that based on an evaluation of several factors, a reintroduction at the Stirling Management Area is feasible. However, several important factors critical to the successful implementation of such a project were not considered in the feasibility assessment.

The fisher reintroduction assessment completed for Washington serves as a model for such a plan. Significant modeling and analysis was devoted in the Washington assessment to evaluating the spatial arrangement of habitat and its connectivity within a proposed reintroduction area. At best, the analysis on connectivity in the translocation plan reviewed here appears to focus on the potential for fishers to find suitable habitat outside of the reintroduction area (Plan, p. 42) and emphasizes the benefit of high quality habitat occurring outside the Stirling Management Area. These conclusions appear to be in anticipation of fishers leaving the selected site and dispersing to better quality habitat. As a secondary benefit, such adjacency of high quality habitat is relevant. However, the primary consideration should be an evaluation of the distribution and arrangement of habitat within the Stirling Management Area to assess the ability of the area to actually support fishers rather than relying on them migrating to better habitat conditions.

The study plan for this project has only recently been drafted (Roger Powell, pers. comm.). We have not had time to fully review the study plan, but based on the monitoring objectives described in the translocation plan (Plan, pp. 65-66), we anticipate that the costs of the study to be significant. The feasibility of funding this study for the seven year duration is not discussed in the plan. The recent budget crisis for the State of California strongly suggests that

state funding is not assured and that even if granted could be withdrawn. The implications of such shifts in the funding environment should be considered in the feasibility assessment.

Cooperation and data sharing among interested parties also is not assured under the permit conditions. Neither the permit to translocate animals or the CCAA issued by the U. S. Fish and Wildlife Service require Sierra Pacific Industries to provide habitat data in support of the study. SPI's and the timber industry's claims about the proprietary nature of their data are well known.⁴ Evidence of the lack of data sharing has already been demonstrated in the development of the translocation plan itself. For example, the Department does not have access to the data from which Figures 11, 12, and 13 were developed. SPI controls this data. In a request for information made to the Department, we were directed to ask SPI directly since the Department did not have the data itself. (Richard Callas, pers. comm.). The ability to freely share data within the project and with the public at large is critical to the success of such a project and is required since it will be financed with public funds. The recent pattern of data sharing among DFG and SPI indicates that this aspect of the project is not assured and will be a challenge to implement. Lack of cooperation from SPI could well result in additional costs to the State of California to meet the project's purpose. Such additional costs should be factored into a feasibility assessment.

SUMMARY

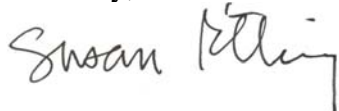
We ask the Department to take a step back and re-evaluate the purpose and need for the proposed translocation project. Completion of a comprehensive assessment to determine if a reintroduction project is the best conservation action to pursue should be the first step taken in the evaluation process. If a reintroduction project is indicated, then a review of the most suitable locations independent of ownership that closely follows the Washington State assessment would be the following step.

⁴ Such claims are noted in the CCAA (U.S. Fish and Wildlife Service 2008, p. 12).

We are committed to increasing the conservation benefits for fisher in California. We seek to promote such benefits in ways that provide the least cost to fishers with the maximum benefit. A revised assessment strategy, as described above, will better meet our objectives and the needs of fishers in California.

If you have additional questions about these comments, please contact Susan Britting, (530) 295-8210, britting@earthlink.net.

Sincerely,




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- Zielinski, W. J. 2007. Review: “Feasibility Assessment.... Sierra Nevada”. Sent to Richard Callas, California Department of Fish and Game and Laura Finley, U. S. Fish and Wildlife Service. August 16, 2007. **Attachment 1 to this letter.**

Richard Callas, California Fish and Game
Laura Finley, US Fish and Wildlife Service

Review: "Feasibility Assessment.... Sierra Nevada"
William J. Zielinski
16 August, 2007

It was difficult to review this document, largely because it falls so short of the goals of (1) justifying whether a reintroduction is a necessary conservation action and -- if the answer is yes, (2) deciding where the best location should be. There is no attention to whether reintroduction is an advisable alternative, compared to other alternatives. Then, as if reintroduction is a *fait accompli*, the document assumes another *fait accompli*: that the reintroduction should occur on one particular ownership, without evaluating the suitability of other ownerships. Forcing the reintroduction to occur at a location that is of substantially poorer predicted suitability than others seems short-sighted and irresponsible. The lives of the animals that will be released – and the future of subsequent, scientifically credible reintroduction efforts – are jeopardized by allowing a private landowner dictate to the government the terms of the reintroduction. In short, I strongly recommend expanding the process to: (1) evaluate the value of reintroduction compared to other tools for fisher conservation in the Sierra, and (2) if reintroduction is the consensus, then to consider *all* lands in the unoccupied zone for their suitability as an experimental release location. Furthermore, I think this expanded process must be coordinated with the comprehensive guidance being developed by the Fisher Biology Team, a group of state and federal agency representatives from CA, OR, WA and British Columbia, of which USFWS (Finley) and CF&G (Burkett) are also members. I suspect that the proposal outlined in the current document may be in variance with forthcoming guidance on reintroduction provided by the Fisher Biology Team, and the two may need to be reconciled.

1. Is reintroduction the preferred conservation option?

Where is the justification that suggests that fishers will not colonize this gap naturally over time? Where is the analysis that examines the habitat connectivity in the region of the 'edges' of the currently occupied areas? Where is the discussion of the nature of geographic ranges, and the fact that no geographic range is ever 100% occupied? The nature of geographic ranges is that they include gaps – unexplored in this document is whether reintroduction is justified to fill the gap. Why does the gap exist? Is reintroduction a valid option when the reason for the distribution gap may not be understood? To paraphrase my colleague, Steve Buskirk: If we allow fishers to colonize distributional gaps from adjacent areas via dispersal, we can reasonably conclude that they find the areas suitable. If, however, fishers are placed in the middle of gaps and provide some monitoring for a few years, what does that tell us? As the document states, on page 20: "An understanding of the connectivity and spatial arrangement of suitable habitat in California is critical to their conservation and necessary to evaluate the suitability of areas considered for reintroduction (Green et al. 2006)." I agree, and have been participating in such an exercise in the southern Sierra as part of the CBI-led fisher

effort. This same sort of exercise should occur in the northern Sierra as a precursor to considering reintroduction.

Transplantation has myriad incumbent risks: putting animals at risk of suffering and premature death, risking introducing diseases, and artificially creating new genetic mixtures in a state where there has, heretofore, been no artificial transplant or removals. The work of Wisely et al. (2004)¹ revealed significant genetic substructure over distances as small as 100 km. Thus, even moving animals from northwestern California to northern Sierra Nevada is a precedent-setting decision that forecloses options for natural dispersal of individuals with locally-adapted genomes. That a transplant of fishers in California is unprecedented makes the absence of justification for transplantation more conspicuous. It is undeniable that reintroduction is a powerful potential tool for the conservation of at-risk species, and it is an option that I think should be considered. The problem is that the document does not justify its use, when compared to alternatives.

2. Less-than-optimal selection of reintroduction location: Landscape suitability.

If the case can be made that reintroduction is justified, logic and the precedent set by most other reintroductions, dictates that it should occur at sites with the best probability of success. The proposed reintroduction plan is in direct conflict with the best available science in this regard. The models of Carroll and Davis et al. identify areas with highest landscape habitat suitability, yet these were not considered. Thus, the proposed project entails unnecessary risks to the individual fishers that will be moved, without justifying how this reintroduction will enhance sustainable fisher populations in California. And, perhaps more detrimental, is the impact that a short-sighted reintroduction effort will have on public opinion when a *bona fide* comprehensive reintroduction plan (should it be justified) is proposed in the future. The document refers to SPI as having ‘offered’ their lands for the reintroduction, but the reader is not told whether other landowners were contacted so that they too could offer their lands for this purpose. Were the owners/managers of land with higher landscape suitability value contacted and did they reject the offer to host a reintroduction?

The reason that SPI ownership is ranked so low in habitat suitability is that the SPI lands, when compared with many other areas, resemble places where fishers are absent more than they resemble places where fishers are present in California. Given that some of this is probably explained by habitat conditions, the model results would suggest that the candidate areas do not have the characteristics necessary to support fishers. These conclusions are based on the development and interpretation of models that are peer-reviewed and published (Davis et al. in press), and that represent the best available science. I, and others, can speculate one way or the other about the accuracy and veracity of these models but there is no available substitute for the systematic collection of field data and scientific analysis and interpretation represented by this work.

¹ Wisely, S. M., S. W. Buskirk, G. A. Russell, K. B. Aubry and W. J. Zielinski. 2004. Phylogeography and genetic diversity of the fisher (*Martes pennanti*) in a peninsular and peripheral metapopulation. *Journal of Mammalogy*. 85:640-648.

Furthermore, the argument (pg. 64) that the Carroll and the Davis et al. models are inappropriate for SPI ownership because they include an abiotic (topographic) predictor is specious. Undoubtedly, the topographic relief predictor was selected because it is correlated with some resource of value to fishers. Our suspicion is that this resource is associated with intact late-successional forests. Because of their inaccessibility, areas with topographic ruggedness have been protected from the most intense and consistent forms of timber harvest. Thus, companies interested in commercial timber harvest probably first acquired lands with the most gentle topography, and they altered forest conditions in these lands much more than forests in the less accessible areas. It is my opinion that this is one of the primary reasons for the relatively lower landscape suitability values on SPI ownership; the gentle topography made making a living cutting timber more profitable, but this could not happen without also reducing predicted habitat value for fishers.

3. No comparison of plot-scale habitat suitability within the unoccupied region.

A comprehensive assessment of candidate reintroduction locations should include evaluation of habitat at multiple scales. The document does a fair job of evaluating relative *landscape* habitat suitability, because it includes in the assessment lands outside SPI ownership. It does not, however, compare plot-level habitat suitability across ownerships. We are provided only plot data from SPI ownership. This is another case where the best available science has not been used. We produced a model that estimates relative habitat suitability at Forest Inventory and Analysis (FIA) plots in the southern Sierra (Zielinski et al. 2006)². Although, unavoidably, this model has not been tested with local data – given that there are no fishers in the region – it is the best available tool to evaluate and compare plot-scale resting habitat value across ownerships. The national FIA program is the best plot-scale metric for comparing plot-level habitat components among potential reintroduction locations. I'd be interested in finding out how many FIA plots are located on SPI ownership.

4. Misleading title and misleading effort.

If the agencies guiding this effort will not make this a comprehensive and credible reintroduction effort then, at the least, the motivations should not be obfuscated. This is not a feasibility assessment for reintroduction of fishers into portions of their historic range. This is an assessment of the best location *among SPI ownership*, which I'm guessing is probably < 25% of the fisher's historical range in the northern Sierra. This document does not explicitly consider the opportunities on the remaining 75%. Truth in advertising calls for including SPI in the title of the document, and including in the introduction a description of what is being considered in the document and what the document is not considering. Thus, it should plainly state that the goal of the enterprise was *not* to find the most suitable areas in the unoccupied area for the experimental release. Stating also, later in the document, that analyses revealed that there are better places than the candidate areas considered, would help the reader understand the shortcomings of the SPI-centric exercise and to contrast it with a comprehensive, fisher-

² Zielinski, W. J., R. L. Truex, J. R. Dunk, and T. Gaman. 2006. Using forest inventory data to assess fisher resting habitat suitability in California. *Ecological Applications* 16:1010-1025.

centric exercise (similar to the feasibility and implementation work conducted by Jeff Lewis and associates in Washington).

5. What about habitat management? What about links to the CCAA?

I did not find in the document a discussion of future plans for the management of timber, or other vegetation treatments, in each of the candidate areas. What assurances does the public have that SPI will protect the reintroduction location from deleterious forms of timber harvest in the near future? Furthermore, if the reintroduction site was on public lands there would be legislative support to protect habitat for fishers; what measures are guaranteed on SPI ownership to assure that the areas into which fishers are transplanted will be managed for their conservation? It makes no sense transplanting a species with published late-seral forest associations into landscapes unless there is also a long-term plan for the management of late-seral habitat components. Where, in this document, are the habitat conservation measures that will support the reintroduction effort?

Furthermore, I think the proposal should include a section that reveals to the reader the regulatory implications of an experimental release on SPI ownership as implied, directly or indirectly, in the CCAA document. It is assumed that the CCAA will provide to SPI legal assurance that their future activities will somehow be protected from new regulation, should the fisher be officially listed. It is my understanding that the CCAA may not apply if fishers do not occur on SPI ownership in the Sierra. Thus, SPI has a strong financial interest in an experimental release, regardless of its outcome. This is another reason why government should be dictating the conditions and location of the experimental release, based on the best interests of the fisher, not a private entity which must consider their best financial interests.

In summary, the document represents a good start down the road of exploring conservation options for fishers in California. It is well written and includes a number of useful analyses. These analyses, however, should be broadened to consider the outcomes when the landscape and plot-level habitat suitabilities of *all* areas in the unoccupied zone, not just SPI ownership, are considered. I would enjoy the opportunity to work with CF&G and USFWS if they choose to use this document as a starting point for a more comprehensive approach that uses all available scientific tools and expertise. Along these lines, I'll share an example of some of the work that could contribute to a more comprehensive approach. I am particularly anxious to continue working with colleagues at the USFWS and HSU to develop a regional habitat model for the eastern Klamath region. Cooperative systematic surveys conducted in this region in 2004 and 2005 have resulted in detection data that can be used to build a regional landscape suitability model. Given the close proximity of this region to the unoccupied zone in the Cascades and northern Sierra, it is likely to identify a set of predictors that may be more applicable to the northern Sierra than the models that have been developed using data from the western Klamath region or southern Sierra. This may result in different, and perhaps better, understanding of potential suitability in the unoccupied zone. This effort dedicated to this project has languished, but expanding the scope of the reintroduction discussion might stimulate the completion of this important new planning tool.