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January 6, 2014

Susan Skalski
Forest Supervisor
Stanislaus National Forest
19777 Greenley Road
Sonora, CA 95370

Sent to: comments-pacificsouthwest-stanislaus@fs.fed.us

Re: Scoping comments for Rim Fire Recovery (43033) Project

Dear Ms. Skalski:

On behalf of myself and the state office of the California Native Plant Society, the following comments are submitted regarding the proposed Rim Fire Recovery Project. I am a retired biologist with over two decades of experience working to manage and conserve natural resources on forest lands in Northern California. I have reviewed the scoping documents and I find concerns relative to ecological processes and impacts to rare plant populations that may result from implementing salvage logging at the scale proposed in the Rim Fire Recovery Project.

For the sake of brevity, I also incorporate by reference the comments of Sierra Forest Legacy et al ("SFL") that you will have received. Particularly, we reiterate the concerns and references provided by SFL documenting the negative effects of salvage logging on forest ecological processes and biodiversity, and the negative effects of salvage logging on fuels reduction objectives.

Effects of fire on sensitive plants, early successional plant communities, and ecological processes

The Rim Fire presents a unique opportunity to learn more about natural succession and fire effects in a region that has been diminished biologically due to logging related activities over time. The scope of logging history in the region, coupled with unprecedented logging and reforestation activities after the 1987 fires, may well result in a significant loss of biodiversity in the region. Vast regions of homogenous commercial pine plantations were installed by the Stanislaus NF, and replaced the biologically diverse natural forest. These have now been largely burned up in the Rim Fire, and it is now possible to allow the processes of natural regeneration to proceed. As the preeminent forest ecologist Jerry Franklin said, in testimony to Congress in 2004,

> "Fifty years for natural reestablishment of forest cover is not a particularly long period; many 19th and early 20th century burns are still not fully reforested. In fact, naturally disturbed habitat that is undergoing slow natural reforestation—without salvage or planting—is the rarest of the forest habitat conditions in the Pacific Northwest. Yet, it is increasingly evident from research, such as at Mount St. Helens, that such large, slowly reforesting disturbed areas are important hotspots of regional biodiversity."

And again, in 2005:

> "Rapid re-establishment of extensive tracts of dense coniferous forests is not appropriate for many other ecological values, however. First of all, it is clearly inappropriate to establish dense plantations of conifers on sites that have been subjected to uncharacteristic stand replacement fire as a result of uncharacteristic fuel accumulations—many of our pine and dry mixed conifer forests, for example. By creating such plantations we are simply creating the conditions—the fuel--for the next uncharacteristic stand-replacement fire!
>
> "For example, the gradually reforesting but vegetationally-diverse and snag and log-rich early successional habitat that sometimes develops following wildfire is optimal for many bird species (including neotropical migrants), game species, and important ecological processes, such as nitrogen fixation. Naturally disturbed areas with their legacies of dead wood intact and not yet dominated by closed coniferous forest are, in fact, the most biodiverse stage in forest succession. Providing for early successional habitat of this type by leaving all or portions of some naturally disturbed areas unsalvaged and unplanted is certainly an appropriate component of a regional plan to maintain biological processes and ecological diversity. Such early-successional areas should include sites representative of the more productive sites (e.g., plant association groups), not just the more remote, high elevation, or unproductive sites. I assume that it is clear to all that clearcuts are not comparable in form or function to the naturally disturbed, unsalvaged, unplanted early successional habitats referred to here"(Franklin 2004 and 2005).

Many species of rare wildflowers, some entirely endemic to the Stanislaus NF or nearly so, are dependent upon wildfire and are threatened due to fire suppression. New populations of some of these rare wildflowers are likely to appear within the first year of the fire. Prior to disturbance operations of any kind, floristic surveys should be undertaken by skilled and qualified personnel, and areas where sensitive plants are found to occur should be protected prior to disturbance activities. (See Attachment 1). These renewed populations need to flower and reproduce annually to restore the seed bank that will be necessary to maintain them over time. The current forest plan, the Sierra Nevada Forest Plan Amendment "Framework" required the Forest Service to design projects to "conserve or enhance" sensitive plant species and their habitat. The Forest Service must incorporate survey information "early" in the planning process in order to "[m]inimize or eliminate direct and indirect impacts from management activities" on sensitive plants unless the activity is designed to maintain or

improve plant populations. Surveys must be conducted according to the procedures outlined in the Forest Service Handbook (FSH 2609.25.11). Since the massive fire has now done the job of improving habitat for these plants, and possibly others that are yet unknown, it is incumbent upon the Forest Service to not endanger this process during salvage logging activities. Without prior surveys, there is no way that the agency can guarantee the effectiveness of the proposed sensitive plant mitigations proposed in the scoping package.

Further, many species of shrubs and hardwoods have become increasingly rare (although not yet listed as sensitive) due to fire suppression and other types of disturbance alterations. Shrubs not seen for decades or longer may now appear in abundance in highly localized areas.[1] These should be documented during floristic surveys, and should also be protected from disturbances that would impede their successful reproduction and viability, with the goal of ensuring that they do not become threatened in the future.

Habitat is optimal for early successional plant species for approximately 30 years after wildfire (sometimes much longer, in the case of forest stands with poorer soil types) (see Loft and Smith 1999). During this time, plants must reproduce annually and shed their seed to the ground, where it becomes a part of the seed bank that will remain dormant for years, decades or longer, awaiting the next wildfire to germinate and bring them back into the sunlight, thus completing another round of forest successional processes. During this time, forest biodiversity is at its highest. Food in the form of seeds, nuts, foliage, and berries; and habitat elements for cover, resting, denning, and birthing are all highest in the forest during this period. That is why the early forest is the foundation of the forest food web.

These are the benefits that early successional plant communities provide after fire, and they are threatened by salvage activities and other cumulative effects resulting from the entrainment of reforestation activities. Other beneficial elements are structural, and include legacy structures such as snags and large down wood that also accrue after fire. The Forest Service has a tendency to equate the benefits of fire solely on the effects of fuel reduction. This is a conifer-centric viewpoint that ignores the ecological benefits for the entire forest food web. However, under a salvage logging/reforestation regime, these benefits are erased, along with the benefits of fuels reductions. Thus, both from a biological as well as a forestry and fuels perspective, in order to preserve the sought-after benefits of fire, salvage logging must be minimized as recommended by Dr. Franklin. Great care must be used to preserve legacy structures, and reforestation should be kept to a minimum and conducted with an eye to mimic natural processes (clump planting).

Of particular importance from our perspective as a science-based organization are the references cited by SFL establishing the negative ecological consequences of salvage logging. The body of scientific literature documents that salvage logging does not contribute to recovery

[1] Some examples of once common hardwoods and shrubs that are becoming increasingly rare in the Sierra Nevada due to fire suppression and plantation forestry include *Garrya fremontii, Garry congdonii, Ceanothus fresnensis and C. arcuatus , Oemleria cerasiformis, Fremontodendron californicum, Ptelea crenulata, Rhamnus rubra* ssp. *yosemitiana* and others (now *Frangula rubra*), *Philadelphus lewisii* var. *californicus, Styrax officinalis* var. *californica,* and *Cercocarpus betuloides.* Floristic surveys should document the presences and abundance of not just these, but all species encountered in survey prior to activities in the Rim Fire.

of ecological processes or biodiversity, interferes with ecological processes and recovery, and salvage logging "may increase the likelihood and/or intensity of subsequent fires" (Lindenmayer, Burton, and Franklin 2008). Recent research in the Sierra Nevada suggests that at best, salvage logging may result in fuel conditions that are neutral *if* stands survive the first two decades, in regards to long term fire resilience (a big "if" because of climate change – and at worst may result in increased fire hazard (McGinnis, Keeley, Stephens, and Roller (2010).

Thus, the only "recovery" from the proposed project appears to be economic. This may not even be relevant, however, given the current timber market status. Please also include an analysis of the economics and status of the lumber market in California that documents the needs, or lack of need, for additional timber at this time.

The EIS must include a history of salvage logging and plantation establishment in the region of the Rim Fire

In accordance with NEPA's requirements for cumulative impacts analysis, the EIS for the Rim Fire Recovery Project must disclose in detail the locations and past management activities which occurred within the boundaries of the Rim Fire since the 1987 Stanislaus Complex fires, including salvage logging and associated activities, plantation establishment, and herbicide applications. Sufficient detail must be provided so that the scope, scale, and intensity of these activities can be processed and analyzed by your staff and the public. All of these activities impede ecological recovery, erase the benefits of fire, threaten rare plants and other native species, and increase fire hazards.

The issue of fire hazard is particularly a concern, since climate change predictions warn that wildfires on the west side of the Sierra Nevada will continue to increase, and with a growing human population that risk is compounded. Wildfire risk was significantly increased in the region as a result of the post-1987 logging and silviculture practices conducted by the Forest Service and private industrial timber companies, and the agency must now responsibly disclose this fact, and ensure that it does not happen again. After the 1987 fires, unprecedented levels of salvage logging and plantation establishment were followed by massive amounts of herbicide applications, resulting in the most hazardous fuel configurations possible. This was a reckless and failed biological experiment conducted with little oversight and promoted by an industrial forestry vision that has been found to be disastrous for our public lands, for wildlife, and for rare species.

The Stanislaus NF has the dubious distinction of being responsible for applying more chemical herbicides to our public forests than any other national forest, or entire *region*, in the entire National Forest System, during the decade and a half following the 1987 fires (data from your own pesticide use reports, as required by NFMA). Thousands of pounds of atrazine were aerially sprayed from airplanes on our public forests by the Stanislaus NF and its timber industry partners. (Atrazine has since been quietly removed from forestry uses in California after it was identified as an agent of endocrine disruption in frogs, causing males to become hermaphrodites and growing ovaries).[2] Besides atrazine, the silviculture shop at the Stanislaus

[2] Hayes, T. et al. 2002. Hermaphroditic, demasculinized frogs after exposure to the herbicide atrazine at low ecologically relevant doses. *Proceedings Natl. Academy Sciences.* 99(8): 5476-5480.

NF oversaw the applications of unprecedented quantities of hexazinone, glyphosate, triclopyr, 2,4-D, and other chemical mixtures to ensure the eradication of other species of plants that might retard the rapid growth desired for conifer plantations. (See Attachment 2, "Historical Use of Herbicides on Stanislaus National Forest and Perspective on Rim Fire").

The purpose of these applications is to kill native vegetation such as oaks and other hardwoods. These species form the basis of the forest food web. In 2014, I do not feel I should have to outline the value of preserving the different plant communities that emerge during natural succession after fire. The early forest (i.e., early seral, or early successional forest) is arguably the most productive stage of forest succession, and fire is the re-set button that sets this community assemblage in motion. This has been well known and documented for at least half a century (see for example, Sampson 1944, Leopold 1950, Kozlowski and Ahlgren 1974, Abrahamson 1984, Swanson et al 2011, etc.).

NEPA requires analyzing the impacts of projects that are connected, or projects which automatically trigger another project. Salvage clearcutting in the region may again entrain the implementation of massive reforestation projects, which will result in triggering a host of additional environmental problems and issues relating to herbicide use, loss of early successional forest habitat and impacts upon species dependent upon such habitats, etc. Thus, the EIS must analyze large scale clearcut salvage logging as a cumulative impact in combination with past, present, and future logging, reforestation, and herbicide uses in the region of the Rim Fire. It must be noted that salvage logging is a type of disturbance with which native plants do not have an evolutionary history, and cumulatively with the post-1987 industrial forestry model implementation, may result in significant irreversible population losses, including the long term extirpation of the seed sources and seed bank for many formerly widespread species. This is why a floristic survey is necessary, full characterization of the existing floristic diversity, disclosure and analysis of the potential for extirpation of plant genetic diversity within the Rim Fire overlaid upon post-1987 fire landscape and plantations, and plans to mitigate these losses and further study and monitoring to determine the effects of these two fires on native species composition over time.

Thank you for your attention to these issues.

Sincerely,

Vivian Parker
Public Lands Analyst, Forestry Program
California Native Plant Society

Attachments

1. 2004 Sierra Nevada Forest Plan Amendment Appeal Decision
2. Historical Use of Herbicides on Stanislaus National Forest and Perspective on Rim Fire
3. California Department of Fish and Game Guidelines for Assessing Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities

References

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Attachment 1.

2004 SIERRA NEVADA FOREST PLAN AMENDMENT

APPEAL DECISION

_/s/ Dale N. Bosworth_____ _November 18, 2004_____

DALE N. BOSWORTH Date

Appeal Reviewing Officer

With regard to the issues raised, the Regional Forester's decision meets the requirements of applicable Federal law, regulations, and policy, upon the condition that certain actions are completed. I affirm the Regional Forester's decision to select Alternative S2 from the FSEIS and approve the 2004 SNFPA, with the following instructions:

- The standard for threatened, endangered, proposed, and sensitive (TEPS) plant surveys for early consideration for enhancement in project design was removed from the Regional Forester's decision in an effort to revise and restructure the standards and guidelines for content and readability. Due to differences in the timing and intent of the survey standard with existing direction, along with the Fish and Wildlife Service (FWS) consideration of the standard in their Biological Opinion, I instruct the Regional Forester to reinstate the standard and remedy this inadvertent technical error. [Page 3].

Plant Species

The threatened, endangered, proposed or sensitive plant species issue focuses on the need for a standard/guideline that requires early surveys so that project design may incorporate habitat enhancement activities listed in the DSEIS:

> Conduct field surveys for TEPS plant species early enough in the project planning process that the project can be designed to conserve or enhance TEPS plants and their habitat. Conduct surveys according to procedures outlined in the Forest Service Handbook (FSH 2609.25.11). If additional field surveys are to be conducted as part of project implementation, survey results must be documented in the project file (DSEIS, p. 279).

This standard/guideline was removed from the preferred alternative between the DSEIS and the FSEIS (Appendix A) to revise and restructure standards and guidelines for content and readability (AR #41003, #41019, and similar language in #41020 and #41023).

The Biological Evaluation and Biological Assessment for the FSEIS (AR #512106) are based on the DSEIS, which includes the early and enhance standard. The Biological Opinion (BO) from USFWS and NMFS (AR #31012) is based on the Biological Assessment. The standards and guidelines were key components in the opinion reached by the USFWS.

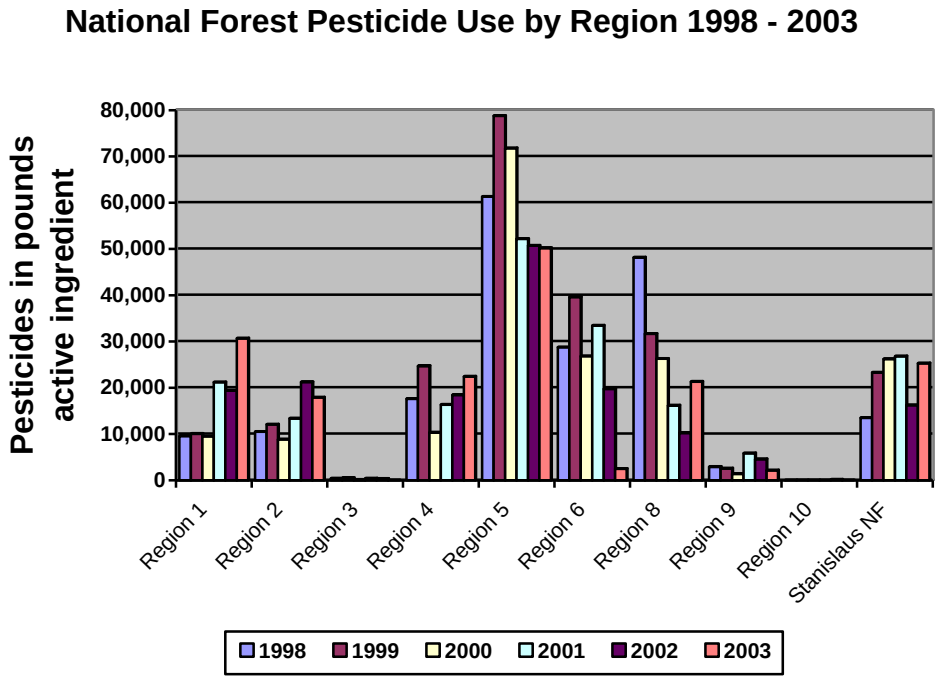
A review of the R5 existing policy of FSH 2609.25 and FSM 2672.42 (Standards for Biological Evaluations) and 2672.43 (Procedure for Conducting Biological Evaluations) indicates differences between existing policy and the "early and enhance" standard/guideline. The standard states that field surveys should be conducted early in the planning process so that the project can be "designed to conserve or enhance TEPS plants and their habitat." Neither the requirement for early surveys, nor the provision to conserve and enhance exists in either FSH 2609.25 or FSM 2672.

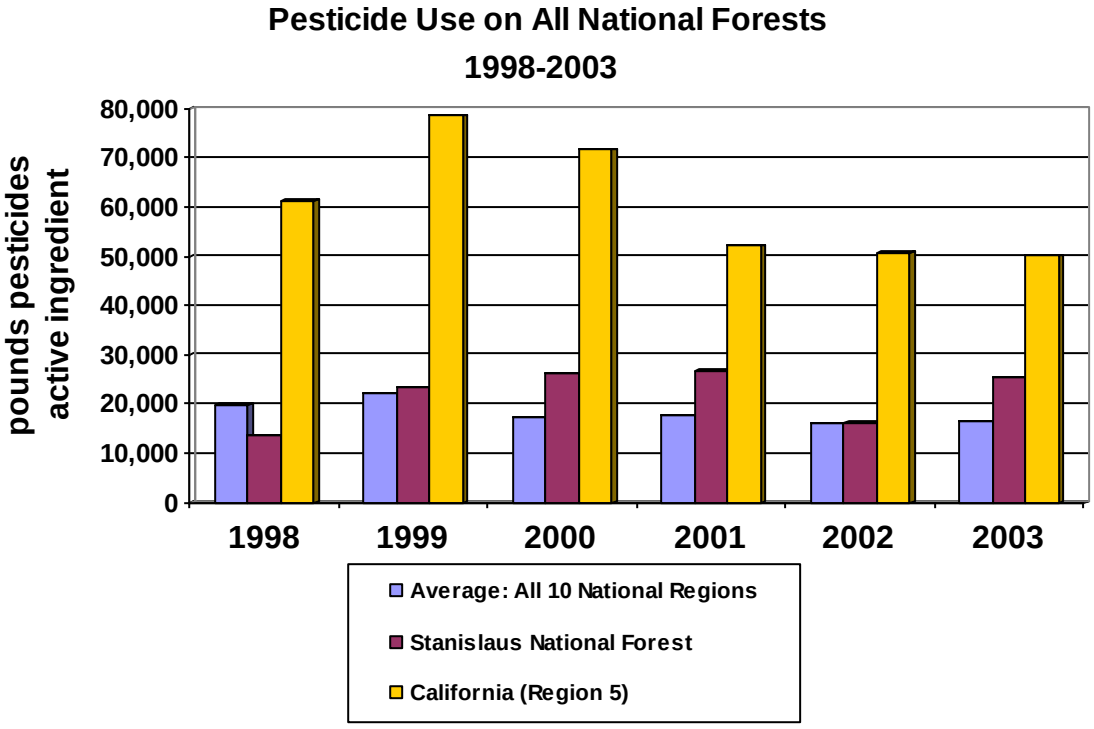
Forest Service Manual direction at FSM 2672.42 and FSM 2672.43 provides the Standards and Procedures for conducting a Biological Evaluation. Neither sections address survey timing. The FSM makes no specific statement regarding TEPS plant habitat enhancement and is silent regarding the timing of rare plant surveys relative to the planning process. [Page 56].

Attachment 2.

Historical Use of Herbicides on Stanislaus National Forest and Perspective on Rim Fire

Data source: US Forest Service, Region 5, Pesticide Use Report





(Note that chemical defoliants, or herbicides, are classified as pesticides by legal definition, and are over 90 percent of the data shown. So, when you are reading these charts, think "herbicides" when you see the word pesticide).

From 1984 to 1989 in Pacific Southwest Region 5, a moratorium was placed on the use of herbicides for forest vegetation management. This moratorium was lifted in 1989. In 1990, California became the first state with comprehensive pesticide use reporting requirements, and Region 5 pesticide/herbicide use data became available to the public as well. Over 90% of the pesticide chemicals used for forest management are chemical defoliants, or herbicides, and these are used to kill native species (not to be confused with uses to prevent the spread of non-native invasive weeds or pests).

On the Stanislaus National Forest, areas that had been burned in the 1987 Stanislaus Complex fires (146,000 acres), and the Rogge and Ackerson fires of 1997 (60,000 acres), were logged, replanted, and subjected to unprecedented levels of chemical vegetation management. The tree plantations of the Stanislaus NF were subjected to repeated aerial and ground applications of atrazine and hexazinone, and ground applications of triclopyr, glyphosate, 2,4-D, and other herbicides. The 2013 Rim Fire overlaps with these fires.

As a result of the region's decisions, herbicide use in California exceeded the average use in all other USFS regions throughout the U.S., and as shown on the graph, the Stanislaus NF itself exceeded average use for all 10 regions. The Stanislaus NF is one forest of 18 in California.

Plantation forest management has long been tied to the use of chemical herbicide to reduce competition from non-conifer forest species, in order to restore a commercial tree crop as quickly as possible after fire or clearcutting. The Forest Service is required by the National Forest Management Act of 1976 to replant forests that have been clearcut harvested, after fire or otherwise. So any proposal to conduct "salvage" logging that involves clearcutting will likely trigger the installation of plantation forestry management, and its attendant chemical usage.

Such uses are not congruent with national forest goals for ecological restoration and conservation. Besides the obvious resulting loss of habitat,[1] the forest structure that is created by these programs sets the stage for the next uncharacteristic stand-replacement fire.[2] When this happens, as in the case of the Rim Fire of 2013, an honest evaluation would have to conclude that the only result of these historical programs has been a net loss: millions of dollars spent fighting fires, reforesting, spraying, and management costs; and a loss of biological treasure which may over time be shown to be irreparable. This calls for a dramatically new approach.

Data source: USDA Forest Service, Region 5, Pesticide Use Report

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[1] Post-fire vegetation is the first plant community in natural succession and creates the foundation of the forest food web, providing the highest level--in the life of the forest--of food and habitat resources for wildlife, for approximately 30 years or more (the length of time after fire to conifer-dominance is dependent upon soil site conditions). The post-fire regenerating forest provides a rich biological legacy that includes: enhanced snag and down wood habitat; enhanced production of food sources including pollen and nectar, foliage, seeds, berries, nuts and other fruits; improved denning, nesting, and birthing habitat in the form of regenerating species; and the contributions of soil-building processes from numerous biological and physical avenues. All of these benefits are effectively "erased" from the benefit side of the fire equation when burned forests are intensively logged and replanted.

[2] Forest structure is altered first by intensive post-fire ("salvage") logging, followed by site preparation and installation of uniformly dense plantation forests. These are then subjected to repeated applications of chemical herbicides. The result is a highly flammable structure, more flammable than a naturally regenerating forest. In addition, herbicides may facilitate a dominant understory of invasive, flammable grasses that further increase the fire hazard of the plantation. This is due in part to the choices of herbicides that are used: triclopyr, atrazine, 2,4-D, and hexazinone that do not kill grasses.

Attachment 3

Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities

State of California
THE RESOURCES AGENCY
Department of Fish and Game
December 9, 1983
Revised May 8, 2000

The following recommendations are intended to help those who prepare and review environmental documents determine **when** a botanical survey is needed, **who** should be considered qualified to conduct such surveys, **how** field surveys should be conducted, and **what** information should be contained in the survey report. The Department may recommend that lead agencies not accept the results of surveys that are not conducted according to these guidelines.

1. Botanical surveys are conducted in order to determine the environmental effects of proposed projects on all rare, threatened, and endangered plants and plant communities. Rare, threatened, and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, can be shown to be rare, threatened, and/or endangered under the following definitions:

A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.

Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. The most current version of the California Natural Diversity Database's List of California Terrestrial Natural Communities may be used as a guide to the names and status of communities.

2. It is appropriate to conduct a botanical field survey to determine if, or to the extent that, rare, threatened, or endangered plants will be affected by a proposed project when:

a. Natural vegetation occurs on the site, it is unknown if rare, threatened, or endangered plants or habitats occur on the site, and the project has the potential for direct or indirect effects on vegetation; or
b. Rare plants have historically been identified on the project site, but adequate information for impact assessment is lacking.

3. Botanical consultants should possess the following qualifications:

a. Experience conducting floristic field surveys;
b. Knowledge of plant taxonomy and plant community ecology;
c. Familiarity with the plants of the area, including rare, threatened, and endangered species;
d. Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
e. Experience with analyzing impacts of development on native plant species and communities.

4. Field surveys should be conducted in a manner that will locate any rare, threatened, or endangered species that may be present. Specifically, rare, threatened, or endangered plant surveys should be:

a. Conducted in the field at the proper time of year when rare, threatened, or endangered species are both evident and identifiable. Usually, this is when the plants are flowering.

When rare, threatened, or endangered plants are known to occur in the type(s) of habitat present in the project

area, nearby accessible occurrences of the plants (reference sites) should be observed to determine that the species are identifiable at the time of the survey.

b. Floristic in nature. A floristic survey requires that every plant observed be identified to the extent necessary to determine its rarity and listing status. In addition, a sufficient number of visits spaced throughout the growing season are necessary to accurately determine what plants exist on the site. In order to properly characterize the site and document the completeness of the survey, a complete list of plants observed on the site should be included in every botanical survey report.

c. Conducted in a manner that is consistent with conservation ethics. Collections (voucher specimens) of rare, threatened, or endangered species, or suspected rare, threatened, or endangered species should be made only when such actions would not jeopardize the continued existence of the population and in accordance with applicable state and federal permit requirements. A collecting permit from the Habitat Conservation Planning Branch of DFG is required for collection of state-listed plant species. Voucher specimens should be deposited at recognized public herbaria for future reference. Photography should be used to document plant identification and habitat whenever possible, but especially when the population cannot withstand collection of voucher specimens.

d. Conducted using systematic field techniques in all habitats of the site to ensure a thorough coverage of potential impact areas.

e. Well documented. When a rare, threatened, or endangered plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form, accompanied by a copy of the appropriate portion of a 7.5 minute topographic map with the occurrence mapped, should be completed and submitted to the Natural Diversity Database. Locations may be best documented using global positioning systems (GPS) and presented in map and digital forms as these tools become more accessible.

5. Reports of botanical field surveys should be included in or with environmental assessments, negative declarations and mitigated negative declarations, Timber Harvesting Plans (THPs), EIR's, and EIS's, and should contain the following information:

a. Project description, including a detailed map of the project location and study area.
b. A written description of biological setting referencing the community nomenclature used and a vegetation map.
c. Detailed description of survey methodology.
d. Dates of field surveys and total person-hours spent on field surveys.
e. Results of field survey including detailed maps and specific location data for each plant population found. Investigators are encouraged to provide GPS data and maps documenting population boundaries.
f. An assessment of potential impacts. This should include a map showing the distribution of plants in relation to proposed activities.
g. Discussion of the significance of rare, threatened, or endangered plant populations in the project area considering nearby populations and total species distribution.
h. Recommended measures to avoid impacts.
i. A list of all plants observed on the project area. Plants should be identified to the taxonomic level necessary to determine whether or not they are rare, threatened or endangered.
j. Description of reference site(s) visited and phenological development of rare, threatened, or endangered plant(s).
k. Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms.
l. Name of field investigator(s).
m. References cited, persons contacted, herbaria visited, and the location of voucher specimens.