



United States
Department of
Agriculture

EXHIBIT H - SIERRA CLUB GSNM PLAN APPEAL

Forest
Service
Sequoia
National
Forest

900 W. Grand Ave.
Porterville, CA 93257
559-784-1500

File Code: 6700/7700
Route To: (2450)

Date: August 5, 2004

Subject: Hazard Tree Procedures for Forest Plan Compliance

To: District Rangers, Staff

This letter spells out the Forest policy in addressing hazard trees on Sequoia National Forest land that pose a threat to life and property. This guidance is developed only for hazard trees that threaten facilities such as public roads, areas under existing special-use permits, utility corridors, recreation sites, etc., and not general timber salvage.

The Forest has no standardized plan or procedure to address hazard tree issues and to clearly identify what levels of analysis and documentation are required to perform hazard tree abatement. Districts have performed widely varied levels of site-specific analysis in addressing hazard tree concerns once they are identified. Approval for hazard tree removal has not happened in some instances before extensive log deterioration occurred, thereby not providing opportunities for economic recovery of product value via a commercial timber sale, causing expenditure of appropriated funds.

The attached Hazard Tree Procedures for Forest Plan Compliance will streamline, promote consistency and expedite the abatement of tree safety hazards in the Forest. The number one Forest Emphasis and Priority is "providing safe operations in everything we do and providing for the safety of our customers takes precedence over everything else". As you know, there has been an accumulation of hazard trees in the last few years that present special challenges to us. District Rangers have the responsibility to take action to remedy hazard tree situations that present a threat to the public or to our own workforce. Examples of the NEPA process applications in the enclosed document are for your reference. Please be mindful that each project may present unique circumstances that require different levels of analysis and public involvement than illustrated in the examples.

Each District should take appropriate action to abate or remove identified hazard trees pursuant to the enclosed Hazard Tree Procedures for Forest Plan Compliance guidelines and direction, to the extent that funding capabilities and other Forest priorities allow. Please contact Tom Simonson in the SO if you have questions about this process.

ARTHUR L. GAFFREY
Forest Supervisor

Enclosure





Hazard Tree Procedures for Forest Plan Compliance



Sequoia National Forest

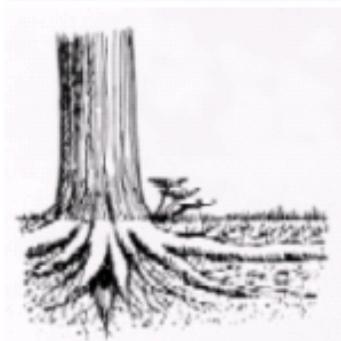
and

Giant Sequoia National Monument



Approved by: _____

ARTHUR L. GAFFREY
Forest Supervisor



Approval date: August 5, 2004

Forest Procedures for Hazard Tree Projects:

This plan is designed to clearly identify what levels of analysis and documentation are required to perform hazard tree abatement on the Sequoia National Forest. The reason for the action must be the hazard. The abatement of hazard trees is necessary to reduce the potential of injury to forest users and damage to property. The Sequoia National Forest Hazard Tree Identification Guidelines are attached in Appendix D. The desire is to promote consistency and to expedite the abatement of safety hazards in the Forest. The use of area closures, gates, barriers, signing, etc. may be necessary as temporary measures until the hazard can be permanently abated.

Per Forest Service Handbook 2409-18-10-13.12, use opportunities to increase revenues and decrease costs. The costs for hazard tree reduction will be borne by the value of the wood to the greatest extent possible. In order to utilize Salvage Sale Funds to pay for hazard abatement, trees must be addressed in a timely manner to ensure economic viability of the sale. Appropriated funding must be used if economic merchantability cannot be achieved.

Three classes are listed below to illustrate where projects fall and what is required to deal with the hazard in each area. Proposed hazard tree removal projects within administrative sites, recreation sites and facilities, and adjacent to roads are categories listed in Section 31.1b of FSH 1909.15 (Environmental Policy and Procedures) and fit the criteria determined by the Chief of the Forest Service for categorical exclusion from preparing an Environmental Impact Statement (EIS) or Environmental Assessment (EA), provided there are no extraordinary circumstances related to the proposed action. Preparation of a Decision Memo (DM) is optional. Compliance with the Sierran Programmatic Agreement (SPA) and Endangered Species Act (ESA) is also required.

Appendix A outlines the Forest's Land and Resource Management Plan (LRMP) compliance.

A. Class 1¹: CE without documentation (ie. 2400-4 contract or free-use permit). Internal scoping is required.

Where:

- 1. Hazard trees are to be felled and left in place (examples)**
 - Wilderness
 - Inaccessible locations

- 2. Hazard trees are being proposed for removal in the following areas:**
 - Administrative sites
 - Developed recreation sites
 - Organizational camps and Resorts
 - Residence facilities
 - Concentrated dispersed camping sites
 - Ski Resorts (adjacent to facilities)
 - Adjacent to permitted improvements and /or facilities
 - Utility corridor maintenance

Utilize existing survey information. No additional surveys will be required (unless initial compliance checks with the Sierran Programmatic Agreement (SPA) and/or Endangered Species Act (ESA) creates that requirement).

B. Class 2¹: CE with letter to the project file; Project Input Form (PIF) and Sale Area Map (SAM) required.

Where:

1. Adjacent to Maintenance Level 3, 4, and 5 Roads

- **Project Information Form** (see Appendix B) with a **Sale Area Map** is completed and signed by the District Ranger.
- **Scoping**: Meet requirement through internal scoping with the PIF, talking to affected publics (ie. campground hosts and cabin permittees).
- Resource specialists are responsible for identifying all control areas and mitigation recommendations. **Additional surveys are not required.** Existing information will be used to complete necessary input for the project. In suitable habitat, where possible, assume presence and incorporate mitigations.
- A project-level **Noxious Weed Risk Assessment** will be a standard component of the project planning process for ground-disturbing or site-altering activities. Surveys are optional. The risk assessment may be as simple as a one-page form documenting little or no risk posed by a project, or a more complex plan with contract provisions when risk is determined to be moderate to high. The risk assessment will demonstrate the need for and appropriateness of requiring contractors and permittees to take preventive measures, such as cleaning heavy equipment being used off-road or obtaining weed-free mulch for erosion control (A-15).
- Project planners are responsible for maintaining site-specific **project files**. An example of a letter to the project file for site-specific roadside hazard tree removal projects is attached in Appendix C.

2. Adjacent to Maintenance Level 1 and 2 Roads

Hazard trees along Maintenance Level 1 roads or Maintenance Level 2 roads that are closed to public and administrative vehicular public traffic) will typically not be felled or removed. Should a road be determined necessary for administrative access, appropriate hazard reduction will be allowed with the appropriate analysis and documentation.

The following guidelines apply to Level 1 and 2 roads that are open to public and administrative vehicular traffic.

- **PIF** (See Appendix B) **and SAM** with the approximate tree locations will be completed and signed by the District Ranger.

- Project Planners are responsible for documenting **down woody material** (tons/acre) around each hazard tree to be felled and for identifying retention requirements. The tons per acre will be determined on a stand by stand basis.
- Retain felled trees where needed to meet **down woody material standards** of at least 10 to 20 tons per acre of large diameter material (12± inches) adjacent to Maintenance Level 1 and 2 roads (FW-OF02 & FW-B30). Refer to Appendix A and A.3.
- **Scoping:** Met through internal scoping with the PIF, talking to affected publics (ie. campground hosts and cabin permittees).
- Resource specialists are responsible for identifying all control areas and mitigation recommendations. Maximize use of existing survey information. Comply with SPA. In suitable habitat, where possible, assume presence and incorporate appropriate mitigations to reduce the need for additional survey work. Additional surveys may be completed if necessary.
- A project-level **Noxious Weed Risk Assessment** will be a standard component of the project planning process for ground-disturbing or site-altering activities. Surveys are optional. The risk assessment may be as simple as a one-page form documenting little or no risk posed by a project, or a more complex plan with contract provisions when risk is determined to be moderate to high. The risk assessment will demonstrate the need for and appropriateness of requiring contractors and permittees to take preventive measures, such as cleaning heavy equipment being used off-road or obtaining weed-free mulch for erosion control (A-15).
- Project planners are responsible for maintaining site-specific **project files**. An example of a letter to the project file for a site-specific roadside hazard tree removal project is attached in Appendix C.

C. Class 3¹: CE with Decision Memo (DM), Section 31.2.

When:

1. **Hazard trees are being proposed for removal within utility corridors (distribution and transmission) and adjacent to other ownerships that meet the timeframes currently described for hazard trees in Appendix D:**
 - **Project Initiation Letter (PIL) and Sale Area Map** with specific unit locations.
 - **Scoping:** Internal scoping with a PIL, scoping letter to affected/interested publics. An example of a DM for a site-specific distribution line hazard tree removal project is attached in Appendix G.

¹ Cite Forest Service Handbook 1909.15, Environmental Policies and Procedures for projects that are categorically excluded from documentation and a Decision Memo are NOT required. A letter to the file stating that the project is excluded from documentation is required as a minimum for project tracking purposes. Include in the letter the FSH cited reference for the categorical exclusion.

Standard Management Requirements:

Wildlife Limited Operating Periods (LOP) dates: Apply to Classes 1, 2, and 3

Spotted Owl: March 1st to August 31st (A-34)

Northern Goshawk: February 15th to September 15th (A-37)

Great Gray Owl: March 1st to August 15th (A-38)

Bald Eagle: January 1st to August 31st

Down wood retention guidelines

Defense Zones: exempt

Defense & PACs: 10-20 tons/acre outside 500-foot nest site buffer

All other Forest allocations: 10-20 tons/acre

See Appendix A-3 and 4.

Heritage Resources: Apply to Classes 1, 2, and 3

Compliance with the Sierran Programmatic Agreement (SPA).

Riparian Conservation Areas:

See Appendix A-8.

APPENDIX A

Sequoia National Forest Hazard Tree Procedures for Forest Plan Compliance

APPENDIX A

Sequoia NF Hazard Tree Procedures for Forest Plan Compliance

Giant Sequoia National Monument Management Plan

The Plan says removal of trees as commercial by-products may occur, incidental to meeting objectives for public safety. The Decision Tree protocol must be followed and documented as described in the Monument Plan:

Determining the Appropriate Treatment Method

To move the Monument toward the desired conditions for fuels and vegetation, there are two basic categories of treatments I have considered, fire and mechanical. Fire treatments include prescribed fire and wildland fire use. Mechanical treatments include heavy equipment such as piling or rearranging fuels for later burning, moving trees that have been thinned to a collection area, chopping or masticating fuels to change their flammability, or moving fuels away from trees or other special features to reduce the risk of damage from fire. Both mechanical and prescribed fire treatments, one after the other, may be used to achieve the restoration or protection goals in a specific area.

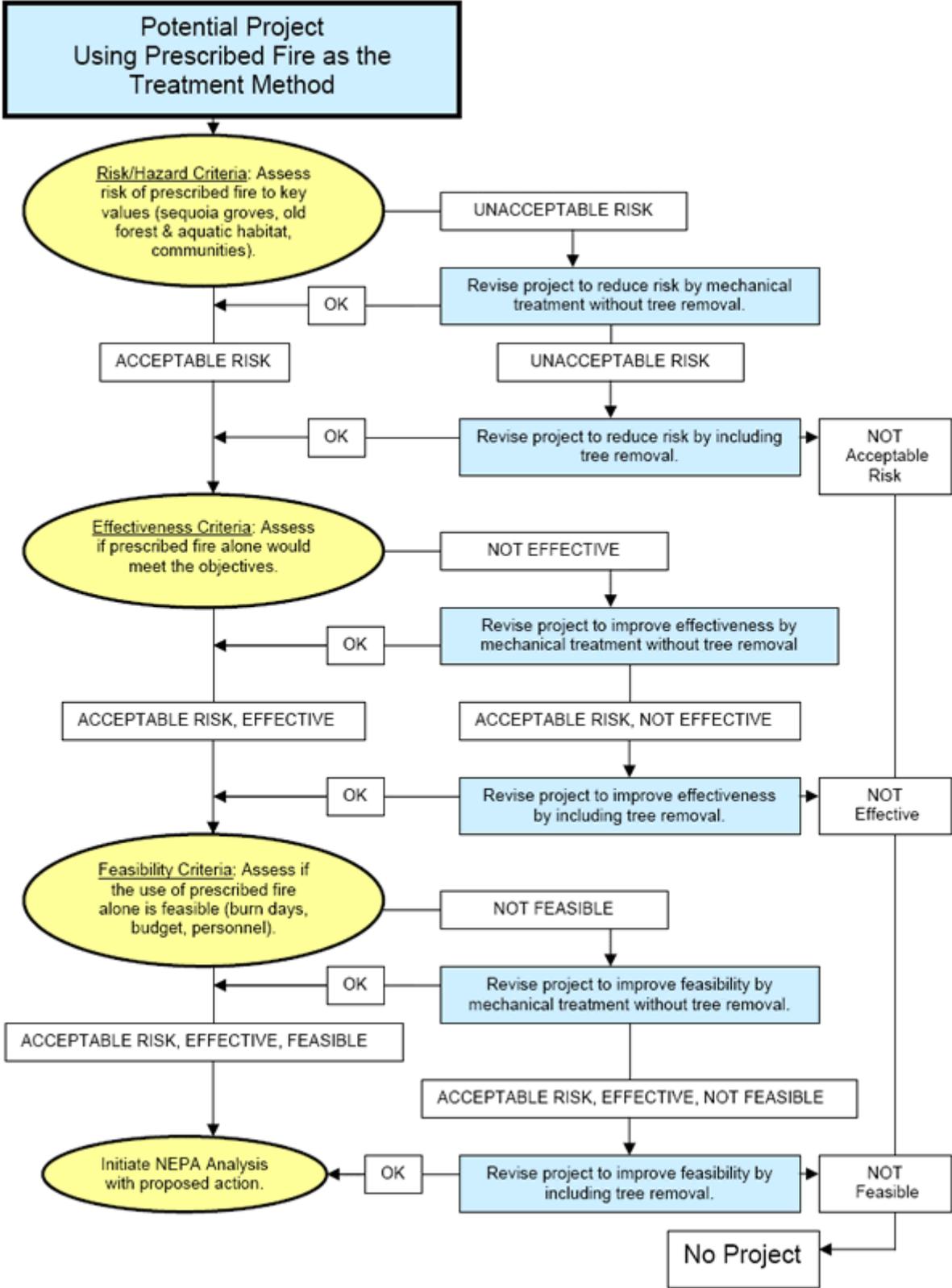
The Proclamation states that tree removal is permitted only for personal use fuelwood, or if clearly needed for ecological restoration and maintenance or public safety. Decisions as to whether tree removal is clearly needed will be made based on site-specific project analyses in the future. Removal of trees as commercial by-products may occur, incidental to meeting objectives for ecological restoration and maintenance or public safety. To determine the appropriate treatment method for a specific site, a model will be used during the analysis for each potential project (see Figure 1). This model may be refined at either the landscape analysis or project analysis level to reflect the site-specific conditions. There are three major criteria that will be considered in determining the appropriate treatment method:

1. Risk/Hazard Assessment: Would the use of prescribed fire alone create unacceptable risk and hazards to the objects of interest or to forest users? An assessment of local conditions (slope; fuel loadings; proximity to communities, giant sequoia groves, and den sites) and a site-specific analysis of fire effects must be conducted. If prescribed fire alone will create unacceptable risk, consider mechanical treatment without tree removal to reduce the risk to acceptable levels. If the risk will still be unacceptable, consider tree removal to reduce risk to acceptable levels. If the risk will still be too high, stop the project.
2. Effectiveness Assessment: Would the use of prescribed fire alone meet the restoration or protection objectives of the project? This ties in closely with the Risk/Hazard Assessment, as reducing the risk to acceptable

levels by modifying the prescribed fire “prescription” may not allow objectives to be met. If it will not be effective, consider mechanical treatment without tree removal to make the project effective in meeting objectives. If the project will still be ineffective, consider tree removal. If it will still be ineffective, stop the project.

3. Feasibility Assessment: Would the use of prescribed fire alone be feasible? Factors such as personnel, cost, and favorable burn days must be considered. If it will not be feasible, consider mechanical treatment without tree removal to make the project feasible.

If a project cannot be designed using these criteria, the project will not proceed.



Sierra Nevada Forest Plan Amendment (SNFP) – Record of Decision (ROD, Jan. 2001)

References in this section are from the “old” Framework, consistent with the Monument Plan EIS, and apply to the Monument only.

SNFPA direction (Jan. 2001) includes the following standards and guidelines for hazard tree removal:

1. Incidental removal of vegetation and down woody material for activities such as but not limited to administering special use permits; maintaining dispersed and developed recreation areas; constructing, reconstructing, and maintaining roads, trails, and rights of way; expanding resorts based on approved development plans; and removing trees that present imminent safety hazards may deviate from vegetation management standards and guidelines (A-29).
2. Fall and remove hazard trees along Maintenance Level 3, 4, and 5 roads and along Maintenance Level 1 and 2 roads and within or immediately adjacent (tree falling distance) to administrative sites (A-29).
3. Review by an appropriate resource specialist is required before falling hazard trees along Maintenance Level 1 and 2 roads. Retain felled trees where needed to meet down woody material standards (A-29). Do not retain pieces smaller than 12 inches diameter at midpoint to meet down woody material standards (A-28).
4. Snag removal needed to address imminent safety hazards, in the defense zone of the urban wildland intermix zone, and in developed recreation sites is exempt from snag retention guidelines. Special-use permit areas less than 40 acres and the defense zone of the urban wildland intermix zone are exempt from down woody material guidelines (A-28).
5. The LOPs for California Spotted Owls, Northern Goshawks or Great Gray Owls do not apply to existing road and trail use and maintenance or continuing recreation use, except where analysis of proposed projects or activities determines that either existing or proposed activities are likely to result in nest disturbance (A-34, 37&38).
6. Retain all snags 15 inches dbh or greater except following stand replacing events and except to address imminent hazards to human safety in Old Forest Emphasis Areas (A-42, Errata1/01).
7. Minimize noxious weed spread by incorporating weed prevention and control measures into ongoing management or maintenance activities that involve ground disturbance or the possibility of spreading seeds. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy (A-30).
8. Allow mechanical ground disturbing hazard tree removal within riparian conservation areas (RCAs) and critical aquatic refuges (CARs) when the activity is consistent with riparian conservation objectives (RCOs). Projects providing for public health and safety are permitted. Utilize low ground pressure equipment or other means to operate off of existing roads when needed to achieve RCOs. Prior to removing trees within RCAs and CARs, determine if existing down wood is sufficient to sustain the stream channel's physical complexity and stability required to maintain or enhance the aquatic and riparian dependent community. Minimize the construction of new skid trails or roads for access into RCAs for hazard tree removal (A-53-59).

APPENDIX A

Sequoia NF Hazard Tree Procedures for Forest Plan Compliance

Sequoia NF Outside of Giant Sequoia National Monument

The balance of the Forest will be managed according to the standards and guidelines in the Sequoia National Forest Land and Resource Management Plan as amended by Sierra Nevada Forest Plan Amendment Record of Decision (ROD), January 2004. The ROD has very little specific direction regarding management of hazard trees. Page 52 of the ROD under "Snags and Down Woody Material", the last paragraph of item 11 states: "...When some snags are expected to be lost due to hazard removal or the effects of prescribed fire, consider these potential potential losses during project planning to achieve desired snag retention levels."

Line officers are expected to take actions necessary to protect forest workers, forest visitors, and facilities.

While the SNFPA ROD (January 2004) does not specifically address hazard tree management, the guidelines specific to the Monument (previous page) could be valid anywhere, so are still good considerations for hazard tree abatement outside of the Monument.

APPENDIX B

Project Input Form

APPENDIX B

PROJECT INPUT FORM

Date Requested: _____ Type of Project: _____

From: _____
Project Leader/Title

Note: a 7.5" topographic map of the project area must accompany all requests. This includes all potentially ground-disturbing areas that may be affected, including equipment storage, roads, landings, etc. Include all pertinent information; such as a copy of the special use permit application, unit prescriptions, utilization data, etc. It is recommended that all Requests for Project Input be accompanied by a Purpose and Need statement.

Project Name: _____
(The Project Name must be consistent with name used in the SOPA.)

NEPA Project Number: _____
(Obtain Project Number from NEPA Coordinator. Include short description of project for publication in SOPA)

Project Funding Source: _____
(This is the Project Work Code or Management Code.)

NEPA Documentation

- Environmental Assessment/Decision Notice & Finding of No Significant Impact
- Categorical Exclusion/Decision Memo required
- Categorical Exclusion/Decision Memo not required ⁱ

Input Needed By: _____ Project Time Frame: _____

Legal Description: _____

Proposed Activity: _____

Cutting Green Trees? _____ Tree Size: _____ Acres Affected: _____

Anticipated Ground Disturbance (include as much detail as possible): _____

Complete and Distribute to:

- Archaeologist
- Botany
- Fire/Fuels Specialist
- Hydrologist
- Interpretation Specialist
- Special Uses
- Range
- Recreation/Wilderness
- Sale Administration
- Sale Planner/Silviculturist
- Small Sales Officer
- Wildlife Biologist
- Other

Specialists: Please fill out appropriate section, attach additional comments if necessary, sign form, and return it to the Project Leader.

- No Concerns. Proceed with Project _____
- Field Review/Surveys Required. Expect Input by: _____
- Concerns/Requirements of the Project: _____

- Biological Evaluation Required. Expected Completion Date: _____
- Archaeological Clearance in Progress. Expected Completion Date: _____
- Botanical Survey Required. Expected Completion Date: _____

Specialist Signature: _____ **Date:** _____

APPENDIX C

Example of Letter to the Project File

APPENDIX C

Example of Letter to the Project File

USDA-FOREST SERVICE

HAZARD TREE REMOVAL

Highway 190

(Highway 190 Corridor on the Tule River Ranger District)

DECISION

I have reviewed the environmental analysis and have decided to remove the identified hazard trees proposed in this project.

The decision rationale for implementation of this project is based on the fact that a risk to life and property exists from hazard trees falling on someone or facilities within the project area. The decision and action implemented need to be the most expeditious, cost efficient method available to address concerns about public safety.

PROPOSED ACTION

The Tule River Ranger District on the Sequoia National Forest is proposing to use a commercial timber sale to remove hazard trees which meet to the hazard tree characteristics set forth in the Sequoia National Forest Hazard Tree Identification Guidelines, approved November 21, 2002, from adjacent to Highway 190. The Proposed Action, will adhere to the Hazard Tree Abatement Procedures for Forest Plan Compliance to allow prompt elimination of the imminent safety hazards associated with standing hazard trees – approximately 80 merchantable-sized trees (85 hundred cubic feet). The project area lies between the Tule River/Hot Springs District Boundary and Camp Nelson. Hazard trees would be removed adjacent to State Highway 190. The proposed treatment would be initiated this year.

BACKGROUND

The Proposed Action is the removal of designated standing hazard trees from the project area utilizing the most expeditious mechanical method available for tree removal. These trees pose a serious safety threat to the public.

CATEGORY OF THE PROPOSED ACTION

The proposed hazard tree removal action falls under Forest Service Handbook (FSH) 1909.15, Section 31.1b,4 “Repair and Maintenance of Roads, Trails and Landline Boundaries.

Based On field review (4/16/03), specialist’s input and experience, the effects of implementing this action will be of limited context and intensity and will result in little or no environmental effects to either the physical or the biological components of the environment.

FINDING OF NO EXTRAORDINARY CIRCUMSTANCES

Extraordinary circumstances include, but are not limited to, the presence of steep slopes or highly erosive soils, threatened and endangered species or their critical habitat, flood plains, wetlands, or municipal watersheds, inventoried roadless areas, Congressionally designated areas (such as

wilderness, wilderness study areas, or National Recreation Areas), Research Natural Areas, or Native American religious or cultural sites, archaeological sites, or historic properties or areas.

This action does not involve extraordinary circumstances.

I have concluded that the project would have no effect on any endangered or threatened species known or suspected to occur in the project influence zone. While implementation could possibly adversely impact individuals of pertinent sensitive species, the action is not likely to result in the loss of viability in the project influence area nor cause a trend toward Federal listing or loss of species viability range wide.

The decision meets all requirements of the National Historic Preservation Act of 1996, as amended. Heritage Resource Managers are now able to apply to the District's site specific analysis regarding removal of hazard trees along roads under the terms of the "Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and the Advisory Council on Historic Preservation, Regarding Identification, Evaluation and Treatment of Historic Properties Managed by National Forests of the Sierra Nevada, California of 1996" (PA).

SCOPING AND PUBLIC INVOLVEMENT

Details pertaining to site-specific projects identifying and removing hazard trees adjacent to Forest system roads, as they arise, will be available on the internet at <http://www.r5.fs.fed.us/sequoia> (Schedule of Proposed Actions, March 2003).

I conclude from scoping that there is demonstrated public interest in performing this work. This decision is being distributed to interested and potentially affected parties and will also be posted on the Forest's Internet site.

FOREST PLAN DIRECTION / FINDINGS REQUIRED BY OTHER LAWS

This Proposed project is consistent with laws, regulations, and policy, as well as Standards and Guidelines in the Sequoia National Forest Land and Resource Management Plan, as amended by the Sierra Nevada Forest Plan Amendment, January 2004, and the Giant Sequoia National Monument Management Plan, December 2003.

Hazard trees and their management are issues addressed in the Sequoia NF Hazard Tree Abatement Procedures, dated.

IMPLEMENTATION

This decision can be implemented immediately and is not subject to appeal pursuant to 36 CFR 215.8 (a) (4).

CONTACT PERSON

Further information about the decision can be obtained from:
Steve Pintek, Ecosystem Manager
Tule River Ranger District, 32588 Highway 190, Springville, CA 93265
Phone: (559) 539-2607

APPROVED BY

Del Pengilly
District Ranger

Date

APPENDIX D

Sequoia National Forest Hazard Tree Identification Guidelines

APPENDIX D

Sequoia National Forest Hazard Tree Identification Guidelines

These guidelines provide for the annual abatement of trees that pose safety hazards on the Sequoia National Forest (SQF). A hazardous tree is defined as any dead or live tree likely to fail in the near future, entirely or in part, due to structural decomposition or other factors causing instability of the tree, and is of sufficient size to strike targets. For purposes of human health and safety, the SQF will consider any dead or dying tree a potential hazard. A dying tree is considered to be any tree that can reasonably be expected to die within three years. The number of hazard trees on the SQF is expected to vary from year to year. The abatement of hazard trees is necessary to reduce the potential of injury to forest users and damage to property.

The following characteristics will be used to identify hazard trees.* These guidelines apply to all trees, both hardwoods and softwoods.

- 1) Any dead tree (snag), including softwoods and hardwoods, or dead tree part, or dead part of a live tree large enough to cause property damage or personal injury.
- 2) Any dying tree with 50% or greater “active” (or current), crown fade or dieback from the top down.
- 3) Trees with less than 50% “active” crown fade or dieback from the top down and:
 - a) Ponderosa/Jeffrey/Sugar/Lodgepole Pine – successful western pine beetle/jeffrey pine beetle/mountain pine beetle attacks on the mid to lower bole (reddish pitch tubes) evident over at least 1/3 of the tree circumference above dbh (specifically excludes red turpentine beetle attacks at base of tree or lower bole).
 - b) True fir – whitish, fibrous, boring dust or frass found in bark crevices and/or webbing along the bole, at DBH or higher and around at least 1/3 of the bole circumference.
- 4) Any tree with at least 50% of the root system undermined, exposed or damaged.
- 5) Any tree with enough decay to significantly reduce structural soundness. Trees normally can lose up to 70% of their diameter, inside bark, to decay before they are considered high risk for failure. Defects that indicate decay may be present include: conks; wounds with missing bark; cracks; broken branches or tops; swollen or punk knots; cankers or swellings with loose or missing bark; and basal cavities. Trees with these defects require closer inspection for decay.
- 6) Large, heavy codominant stems (forked bole) with evidence of splitting or decay at the crotch.
- 7) Declining trees within or on the edge of root disease centers.
- 8) Leaning trees. Lean may be an indicator of high potential for failure if it has developed recently or if the tree has other structural defects in addition to the lean. Trees that lean more than 5 degrees from vertical should be carefully inspected.

* For situations involving fire damaged trees, currently accepted fire injury mortality/ survival guidelines will be used as appropriate to identify trees expected to die from fire injuries.

TREE HAZARD GUIDE - R-5 FOREST HEALTH PROTECTION

John Pronos, Plant Pathologist

(Revised 09/29/2003)

This guide presents information on tree hazard management in developed recreation sites. Its purpose is to provide assistance in the development of tree hazard management programs by National Forests and Ranger Districts in California. Additional assistance on tree hazard management can be obtained from Forest Health Protection personnel in the Regional or Service Area offices.

The objectives of this guide are to:

- 1) Describe how to establish and operate a tree hazard management program in National Forest System recreation sites.
- 2) Describe a suggested tree hazard rating system.
- 3) Describe the various actions available to reduce the potential for an accident from tree failure.

Tree Hazard Management Programs

A management program includes: 1) designating responsible individuals, 2) identifying sites to be examined, 3) performing the inspection, 4) documenting the inspection, 5) performing the necessary actions to reduce the hazards, 6) maintaining the records of inspection and actions taken, and 7) recording tree failures, associated defects, and losses. The program should be planned and accomplished compatible with available resources (personnel and funding).

DEFINITIONS:

In rating trees for hazard, one attempts to determine the expected loss from failure of a tree prior to the next inspection. Loss is defined as property damage or personal injury and may be expressed in dollars. Failure is the mechanical breakage of a tree or tree part. Failures usually, but not always, are a result of the interaction of defects and weather conditions. Failures result in accidents only if they strike a target. Targets can be stationary, such as buildings, or mobile, such as vehicles and people. In this discussion we will not consider other trees as targets, but will only address people, property, and structures. Failures usually are associated with defects in a tree. Defects are faults or flaws in a tree that reduce its structural strength. Trees may have single or multiple defects that may or may not be detectable. A hazard rating system is principally concerned with detectable defects where actions can be taken to reduce the hazard.

RESPONSIBILITIES:

Prior to initiating a tree hazard program, responsibilities and assignments need to be made. At present, each District Ranger is responsible for preparing operations and maintenance plans for their public use areas and operating and maintaining recreation sites and facilities in accordance with these plans (FSM 2330.43). One person should be responsible for the tree hazard management program at each Ranger District. This will insure that a program functions properly, including periodic surveys, completion of required actions, and maintenance of records, and that there is continuity from year to year. The individual should have the authority to supervise crews and the background and training to run a tree hazard program. This includes knowledge of the public use areas, the ability to identify and rate defects as to their potential to cause failure, and the ability to prescribe the proper actions to reduce the tree hazard. Knowledge of past failures in an area is an added benefit because of the information it provides on the types of defects and tree species involved in such failures. The inspection crews, if any are formed in addition to the responsible individual, also need to have adequate training in recognizing and rating tree defects. They should have familiarity with the recreation sites to determine occupancy and the likelihood of a target being present. Similarly, knowledge of the local weather conditions would be useful since many failures occur during storms and unusual weather conditions.

INSPECTIONS:

Annual safety inspections are required of every public National Forest recreation site (FMS 2332.1). This includes tree hazard inspections. Inspections should normally be done prior to the primary use season with sufficient time allowed for corrective actions to be taken. Inspections may also be needed following severe storms during the use season.

A systematic inspection is preferable. A map of an area will simplify the planning of a survey route and will aid in the recording of tree locations during the survey. All trees that have a target within striking distance should be visually examined. Trees with defects should be identified and rated for hazard potential using an accepted rating system. Examples of such systems, other than the one presented in this guide, include those developed by the state of Washington, the province of British Columbia and Region 6. These systems are described in the publications listed at the end of this guide. Following rating, action is prescribed to correct or monitor the situation.

RECORDS:

Good records are a must for a tree hazard inspection program to meet its objectives and be effective. Every public use site that is inspected must have documentation, even if no tree hazards are identified. Every tree that is defective and inspected must have documentation of the inspection.

Numerous forms have been devised to aid in record keeping. The information to be collected on the forms is similar, the differences reflecting the various hazard rating systems with which the forms are to be used. The following information is collected on all of the forms and reflects the basic knowledge required.

- * Tree Number - identification and tracking purposes
- * Species - differences in failure potential, ability to relocate tree
- * DBH - reflects tree size and potential for damage
- * Tree height - helps identify targets within striking distance
- * Tree Location - identifies location for action, monitoring, tracking
- * Target - describes type of target, and value
- * Defect - describes defect(s) present
- * Hazard Rating - Summary value from rating system
- * Action Recommended - inspector's determination of what needs to be done
- * Action Completed - verifies and documents completion of action

Figure 1 on page 10 illustrates the form that is suggested for use.

When the forms are completed, they should be filed by site in one location and retained. Retaining the forms can provide useful information on corrective actions taken and types of defects and associated failures. They also can provide useful information to new employees about the long-term condition of particular trees. They may also be utilized to develop or change local policies on tree hazard management.

RECORDING TREE FAILURES:

Regardless of the intensity of a tree hazard management program, failure of trees is a natural occurrence. When a tree does fail, the failure should be recorded. The documentation should include tree species and size; time and location of the incident, defects associated with the failure; the amount of damage and loss, if any; and environmental conditions at the time of the failure. A suggested record keeping form is illustrated in figure 2.

Maintaining these records can provide information in future years as to what types of trees and conditions are most likely to cause failure in specific areas. They can also serve as a monitoring system for the tree hazard management program to determine if adjustments in the program may be necessary.

Tree Hazard Rating System

The following rating system is recommended for use by Forest Service personnel in Region 5. It is based on systems used by the National Park Service and the Provincial Park System in British Columbia. It takes into account the four factors involved in tree hazard rating:

- * The potential for failure of the tree or tree part,
- * The potential for damage from failure,
- * The probability of target impact, and
- * The value of the target.

Two values are determined for each tree being rated. Both values range from 1 to 3 and are determined independently, then summed, to arrive at the hazard rating. An additional point is added to the rating if multiple, interacting defects, such as lean, are found.

The first value, the failure potential, requires the inspector to estimate the likelihood that, prior to the next inspection, the defective tree or tree part will fail during the season when the target is present. Determining the failure potential requires an evaluation of the defects and the tree species involved.

The following values are applied.

- 1 point = low potential for failure, defects minor
- 2 points = moderate potential for failure
- 3 points = high potential for failure, defects serious

+1 point if multiple, interacting defects are present, e.g. leaning tree

When multiple defects are present, they should be evaluated to determine if they may interact and increase the potential for failure. If interaction is probable, then an additional point is added to the failure potential value.

The second value, failure impact, is an evaluation of the likelihood of impact, the amount of damage if failure occurs, and the value of the target. The following values are applied:

- 1 point = minor damage expected, probability of impact low, defective tree or tree parts small, target of low value
- 2 points = moderate damage expected, probability of impact moderate, defective tree or tree parts of sufficient size to cause moderate damage, target of moderate value
- 3 points = extensive damage expected, probability of impact high, defective tree or tree parts of a size to cause extensive damage, target of high value

The hazard rating is determined by adding the failure potential and the failure impact values. This can then be used to determine what action may be necessary to reduce the hazard.

HAZARD RATING = FAILURE POTENTIAL + FAILURE IMPACT

The following actions should be taken based on the hazard rating.

<u>Hazard Rating</u>	<u>Hazard Potential</u>	<u>Suggested Action</u>
2 - 3	Low	Monitor Tag Tree?
4 - 5	Moderate	Tag and monitor or remove defective tree, tree part, or target
6 - 7	High	Promptly remove defec- tive tree, tree part, or target

Corrective Actions

Planned corrective actions should be performed prior to the primary use season. If needed actions cannot be taken prior to primary use, the responsible official should evaluate the hazard to the public and determine whether the site should be closed (FSM 2331.5). Warnings explaining the hazardous condition should be posted around the closed site.

Five types of action are generally available to reduce tree hazard potential:

- * Target removal
- * Tree removal
- * Topping
- * Pruning
- * Specialized actions

TARGET REMOVAL:

In certain situations removal of the target from the area of hazard is the easiest and least costly alternative. Moving picnic tables, fire grates, and portable toilets can easily be done. Redirecting the use pattern with barriers and access relocation may also be done. The number and distribution of tree hazards in some public use areas, however, may require permanent closure and relocation of the facilities.

TREE REMOVAL:

All dead trees and snags that could impact a target should be removed. Careful consideration of removing live trees should be made because of possible impacts on visual and recreational qualities and changes in wind patterns in the stand when trees are removed. Care must be taken to minimize damage and wounding to the residual vegetation. Wounds on residual trees may become defects that could be involved in failures in future years.

TOPPING:

Live trees with dead or broken tops can be treated to reduce the hazard without removing the tree. The hazard potential of dead tops varies with tree species. Old spike tops of pines and Douglas-firs tend to be sound, although they should be examined using binoculars to see if other defects such as cracks or bird nesting cavities indicating decay, are present. Dead tops of true firs will decay more quickly and may require removal.

Trees with older dead tops or broken-out tops often develop new volunteer tops. These volunteer tops are usually firmly attached to the main trunk and do not fail while alive. If failures do occur, it is normally a result of a heavy snow and ice load and high winds. Therefore, consider removal of these tops in areas utilized during the winter. Failure potential increases if these tops die. In some situations large hardwoods may require some crown reduction. It is not recommended that hardwoods be topped because of the likelihood of decay entering these types of pruning wounds and the need for future

topping to control the growth of new shoots. Instead, it is recommended that the crowns of large hardwoods be reduced through a planned branch thinning operation

PRUNING:

Dead limbs are often considered to constitute a hazard. Reports indicate that they are occasionally involved in accidents and losses. Two factors influence the hazard potential of dead limbs: Their size and the amount of use directly below the limb. When examining dead limbs for hazard reduction, consider the potential target. Is the limb overhanging a permanent structure? A picnic table? An area with occasional use around a campsite? Limb removal is expensive and the need for protection based on usage should be verified.

SPECIALIZED ACTIONS:

High value trees with defects may merit special actions to reduce the hazard potential and retain the tree. Such actions include cabling and bracing. Filling decay cavities with concrete and applying wound dressings are not considered beneficial. Careful evaluation should be given to these activities prior to their implementation because of their high cost. Actions of this type usually require outside expertise and professional arborists may need to be hired to evaluate the potential benefits of treatment and to do the work.

Additional Reading

Harvey, R. D., Jr. and P. F. Hessburg. 1992. Long-range planning for developed sites in the Pacific Northwest: The context of hazard tree management. USDA Forest Service, Forest Pest Management, Publication No. FPM-TP039-92, Portland, OR. 120p.

Mills, L. J., and K. Russell. 1980. Detection and correction of hazard trees in Washington's recreation areas. State of Washington, Department of Natural Resources, Rep. No. 42. 35p.

Paine, Lee A. 1971. Accident hazard evaluation and control decisions on forested recreation sites. USDA Forest Service Research Pap. PSW-68. 10p. Pacific Southwest Forest and Range Experiment Station, Berkeley, CA.

Paine, Lee A. 1978. Administrative goals and safety standards for hazard control on forested recreation sites. USDA Forest Service Research Pap. PSW-88. 13p. Pacific Southwest Forest and Range Experiment Station, Berkeley, CA.

Wagener, Willis W. 1963. Judging hazard from native trees in California recreational areas: a guide for professional foresters. USDA Forest Service Research Pap. PSW-P1. 29p. Pacific Southwest Forest and Range Experiment Station, Berkeley, CA.

Wallis, G. W., D. J. Morrison, and D. W. Ross. 1980. Tree hazards in recreation sites in British Columbia: management guidelines. British Columbia Ministry of Lands, Parks and Housing, and the Canadian Forestry Service. Joint Rep. No. 13. 52p.

Office Procedures

1. Obtain a listing of the recreation areas to be examined.
2. Prioritize the recreation areas for examination.
3. Obtain maps of the recreation areas.
4. Select an appropriate inspection route using the maps for each recreation area.
5. Gather necessary field gear.
6. Train field crews in procedures, defects, and hazard rating.
7. Assign recreation areas to field crews and initiate field procedures.
8. If field crews are used, monitor their procedures, hazard ratings, and suggested corrective actions to assure accuracy.
9. Make any corrections and retrain as needed.

Equipment Needed

Aluminum nails
Binoculars
Camera
Clinometer or Relaskop
Compass
Data forms (blank and from previous inspection)
Diameter tape
Field identification guides
Hand lens (10X)
Hatchet or axe
Increment borer and/or cordless drill
Site maps
Pulaski or shovel
Tree tags
100 foot tape

Field Procedures

1. Verify the suitability of the inspection route selected in the office.
2. Estimate the height of the average tree in the public use site to determine the distance from targets that must be examined.
3. Proceed to the first tree within striking distance of a target and inspect it systematically from the roots to the top of the crown.
4. If no defects are identified, proceed to the next tree. Inspect only trees with a target and rate only those with defects.
5. If defects are identified on a tree that can damage a target if it fails:
 - a) Tag the tree and locate it on a map;
 - b) Record the tree number, species, DBH, and location on the inspection form (Figure 1);
 - c) Describe the defects on the inspection form;
 - d) Determine the failure potential (high - 3, moderate - 2, low - 1) and record, add a point for interacting defects;
 - e) Describe the target on the inspection form.
 - f) Determine the failure impact (high - 3, moderate - 2, low - 1) and record;
 - g) Add the two values, failure impact and failure potential, and record the hazard rating;
 - h) Determine the actions necessary to abate the hazard and record.
6. Continue the systematic inspection of all target areas in the public use area until all trees have been examined.
7. Check all inspection forms to ensure that they are complete.
8. Submit the necessary information on needed abatements to the appropriate authority for action.
9. Record when corrective actions are completed on the inspection form.

APPENDIX E

Example of Applicable Sites/Facilities and Roads List

Tule River Ranger District

APPENDIX E

Example – Each unit may wish to identify applicable sites/facilities. To assist ID Teams, the Tule River Ranger District has created this list as of 11/21/03 to clarify roads, administrative sites, permitted facilities, and developed recreation sites.

Maintenance Level 3, 4, and 5 road list: (includes portions of Infra database Maintenance Level 2 roads where traffic volumes are equivalent and road surfaces and comfort level are similar to Maintenance Level 3, 4, and 5 portions.

Forest Service Administrative Site Examples:

Johnsondale Station
Jordan Peak Lookout
Dead Horse Snow Survey Course
Peppermint Helibase

Permitted Facilities Examples

Camp Whitsett
Golden Trout Pack Station
Parker Pass Apiary Site
Lower Durwood Resort

Recreation Site Examples:

Wishon Campground
Panorama
Frog Meadow Cabin
Snow Parks

APPENDIX F

Example of Decision Memo

Example of Decision Memo

UNITED STATES DEPARTMENT OF AGRICULTURE
Forest Service
Pacific-Southwest Region

DECISION MEMO

Power Distribution Line Clearance (G040351)

Tule River Ranger District
Sequoia National Forest
Tulare County, California

PROPOSED ACTION

The Pacific Gas and Electric Company (PG&E) is proposing to remove trees that pose a safety hazard to PG&E's electrical distribution lines in the Coffee Camp area on the Tule River Ranger District (T.20S., R30E., S. 27, 28, 29, and S.32. A survey conducted by PG&E (November and December 2002) indicated that the removal of these trees is necessary to ensure the safety and reliability of PG&E's electrical facilities.

The Sequoia National Forest Hazard Tree Identification Guidelines will be used to identify the specific trees that pose safety hazards. A hazardous tree is defined as any dead or live tree likely to fail in the near future, entirely or in part, due to structural decomposition or other factors causing instability of the tree, and is of sufficient size to strike targets. For purposes of human health and safety, the forest will consider any dead or dying tree a potential hazard. A dying tree is considered to be any tree that can reasonably be expected to die within three years.

The project area is approximately 5 miles in length and averages 50 feet wide, though trees further than 50 feet from the lines that pose a hazard to the distribution lines will be removed. Approximately 30-50 trees representing approximately 15-25 MBF are scheduled for harvest and removal. Conventional ground based logging equipment will be utilized. Access will be Highway 190.

Additional hazard tree removal is anticipated within the right-of-way corridor resulting from: felling damage; other complications with the existing power lines as needed; and as additional hazard trees are identified and approved for removal.

Management Requirements and Mitigation Measures

1) Air Quality

Attain Lowest Achievable Emission Rates (LAER's).

- a. Burning permits will be acquired from the Tulare County Air Pollution Control District (APCD). The APCD will determine days when burning is allowed. The California Air Resources Board (CARB) provides daily information on "burn/no burn" conditions.
- b. Measurements of wind speed and direction and weather forecast information will be utilized before and during all burning operations to minimize effects on Class I airsheds and populated areas. If the data indicates that emissions may be directed toward or concentrated in these areas, attempt to minimize effects. Weather patterns promoting lifting and dispersion of smoke are optimal and ignition should be done during these times.

2) Fuels and Fire

- a. Lop and scatter all purchaser generated slash.
- b. Slash shall be scattered in a clear area away from vegetation, power lines, and power poles.
- c. Burning shall only take place after 2 inches of rain has fallen within the previous 30 days.
- d. Slash piling and burning is not allowed within Heritage Resource sites.

3) Heritage Resources

Project implementation under this Decision Memo will comply with the stipulations of the Sierran Programmatic Agreement (SPA) among the U.S.D.A., Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Identification, Evaluation, and Treatment of Historic Properties Managed by the National Forests of the Sierra Nevada, California, dated October 1996. Heritage sites of interest are located within the Area of Potential Effect (APE) and are to be protected using the following methods:

- a. The Standard Protection Measures (SPMs) of the SPA will be implemented for the National Register eligible and potentially eligible archaeological sites of the APE. On-the-ground coordination between the sale administrator and heritage resource specialists may be necessary to implement the hazard tree SPMs in and around certain sites (e.g. directional falling, full suspension of logs, and removal). Slash piling and burning is not allowed within sites.
- b. In the event that any new cultural resources are discovered during implementation of this project, all work must cease and the District Heritage Specialist must be notified in accordance with provisions of Stipulation VII of the SPA. Any work outside the scope of the existing project proposal must comply with the regulations of Section 106 of the National Historic Preservation Act of 1966, as amended.

4) Noxious weeds

Purchaser shall ensure that all equipment moved on to National Forest Land is free of soil, seeds, vegetative matter or other debris that could contain or hold seeds. Purchaser shall employ whatever cleaning methods necessary to ensure compliance with the terms of this requirement, and shall notify Forest Service prior to moving each piece of equipment onto National Forest Land. This will prevent the introduction of the seeds of noxious weeds onto National Forest Land. If noxious weeds are present within the sale area, cleaning may also be required before moving between units within the sale area. Under this requirement, "equipment" includes all logging machinery except for log trucks, chip vans, pickup trucks, cars or other vehicles used for daily transport of personnel.

5) Range

All structural range improvements (fences, gates, water troughs, etc.) will be repaired or replaced if damaged during line clearance activities.

6) Sensitive Plants

Sensitive Plant protection: In order to minimize or alleviate possible adverse effects to Sensitive Plants, the following management requirements will be implemented with the activities of this project.

- a. Field surveys have been conducted within the project area where ground disturbance might occur.
- b. Any newly added portions (ie. for add-on hazard trees within the Sale Area) of the power line will be surveyed prior to implementing project activities at those sites.
- c. All occurrences of Sensitive Plants, including all found at a later time, are flagged and no ground-disturbing activities will be implemented within the flagged areas.

7) Water and Soil Quality

Best Management Practices (BMP's) have proven to be effective in limiting off-site transport of sediment to stream channels and surface waters. The following BMP's will be implemented:

- a. BMP 1.16 Log Landing Erosion Prevention and Control
Any temporary landings needed to load timber will be identified and agreed upon by the Forest Service Sale Administrator (S.A.). Temporary landings will be located away from drainage ditches, streams, wet meadows, and other sensitive sites. Erosion protection will be implemented on landings where determined necessary by the S.A. or hydrologist.
- b. BMP 1.18 Meadow Protection During Timber Harvesting and BMP 1.19 Streamcourse Protection

Due resource concerns, the two trees located on the east bank of Big Creek will not be treated through a timber sale. These trees will be felled and left in place.

- c. BMP 2.2 Erosion Control Plan
Activities with the potential to compact soils will be restricted to areas where soil is dry to 12 inches in depth. Sediment control methods will be provided where identified to be necessary by the S.A. Waterbars and other erosion control measures will be implemented where needed as determined by the S.A., or as identified by the soils or water resource specialist. Water control measures on powerline roads will be re-established to a functional configuration. Slash and small wood pieces may be scattered in areas of soil disturbance to reduce erosion and maintain productivity.
- d. BMP 2.13 Control of Construction in Streamside Management Zones
Along perennial and intermittent streams: directionally fell trees away from the stream; clear limbs and debris that may impede the flow of water from designed and natural drainages; and do not remove imbedded materials from natural drainages.
- e. BMP 2.12 Servicing and Refueling of Equipment
Servicing and refueling of equipment will be completed in designated areas.
- f. BMP 5.2 Slope Limitations for Tractor Operation
Limit conventional ground based equipment to 35% slopes (with short pitches less than 100' up to 45%)

8) Wildlife

- a. Purchaser operations shall be prohibited within ¼ mile of designated spotted owl, goshawk, and great gray owl protected activity centers (PACs) to prevent disturbance to these species during the breeding season. If nesting status is determined, the limiting operating period (LOP) will be reduced to ¼ mile around the nest stand, or as determined by the District Biologist. If any new occurrences of these species are detected during implementation of the project, the District Biologist will be notified for further evaluation before continuing operations.
- b. The LOPs (where no operations are allowed) are as follows:
 - 1. Great Gray Owl: March 1 – August 15
 - 2. Spotted Owl: March 1 – August 31
 - 3. Northern Goshawk: February 15 – September 15
- c. In areas with less than 10-20 tons of downed woody material, retain felled non-sawlog trees over 12" dbh as downed wood

DECISION

The environmental impact of the proposed action is minimal, and consists of minor amounts of timber and vegetation removal, smoke production, and soil compaction. A Biological Evaluation and Assessment has been prepared for this proposal, and a determination of effects was made. No adverse effects have been identified for sensitive, threatened or endangered animal species or their habitat as a result of this project. Impacts on sensitive plants that may occur from this project would not result in a trend toward Federal listing or loss of viability for the species, if the management requirements are followed to protect suitable habitat. Heritage resources that are known to exist within the project area are identified and would be avoided during project implementation. All practicable means to avoid or minimize environmental harm have been adopted.

Based on the above information, it is my determination that this activity will be of limited size, duration and degree of disturbance. I find the proposed action qualifies under provisions of the Forest Service Environmental Policy and Procedures Handbook (FSH) 1909.15, Chapter 30, section 31.1b, category 4: "Repair and maintenance of roads, trails, and landline boundaries" and section 31.2, category 2: "Additional construction or reconstruction of existing telephone or utility lines in a designated corridor."

Past experience and environmental analysis, including scoping with the public, California Department of Fish and Game, and an interdisciplinary team, reveal that no extraordinary circumstances (FSH 1909.15, 30.3) exist that might cause the action to have significant effects upon the human environment. This proposed action is therefore excluded from further documentation in either an environmental assessment or environmental impact statement.

SCOPING.

Scoping was accomplished internally with a Project Input Form (PIF), talking to affected publics (PG&E, adjacent private property owners). No public interest was received.

FINDINGS REQUIRED BY OTHER LAWS.

I have determined that this action is consistent with the following legal requirements:

1. This decision is consistent with the direction set forth in the Pacific Gas and Electric Rights-of-Way Operation and Maintenance Plan for the Distribution of Electricity within the Sequoia National Forest.
2. This action tiers to and is consistent with laws, regulations, and policy, as well as Standards and Guidelines in the Sequoia National Forest Land and Resource Management Plan (SNFP) as amended.
3. All vegetative manipulation complies with the seven requirements of 36 CFR 219.27(b).

IMPLEMENTATION DATE.

Implementation of this proposal may take place immediately upon my issuance of this decision.

ADMINISTRATIVE REVIEW OR APPEAL OPPORTUNITIES.

My decision is not subject to administrative appeal pursuant to 36 CFR 215.8 (a) "The following decisions are not subject to appeal under this part: (4) Decisions for actions that have been categorically excluded from documentation in an environmental assessment or environmental impact statement in FSH 1909.15, Section 31.1 and 31.2, except as noted in 215.7(b)".

CONTACT PERSON.

For further information contact: Steve Pintek, Ecosystem Manager, Tule River Ranger District, 32588 Highway 190, Springville, CA 93265, (559) 539-2607.

RESPONSIBLE OFFICIAL AND DATE.

Del Pengilly
District Ranger

DATE