

# Ingalls Units

186  
Acres

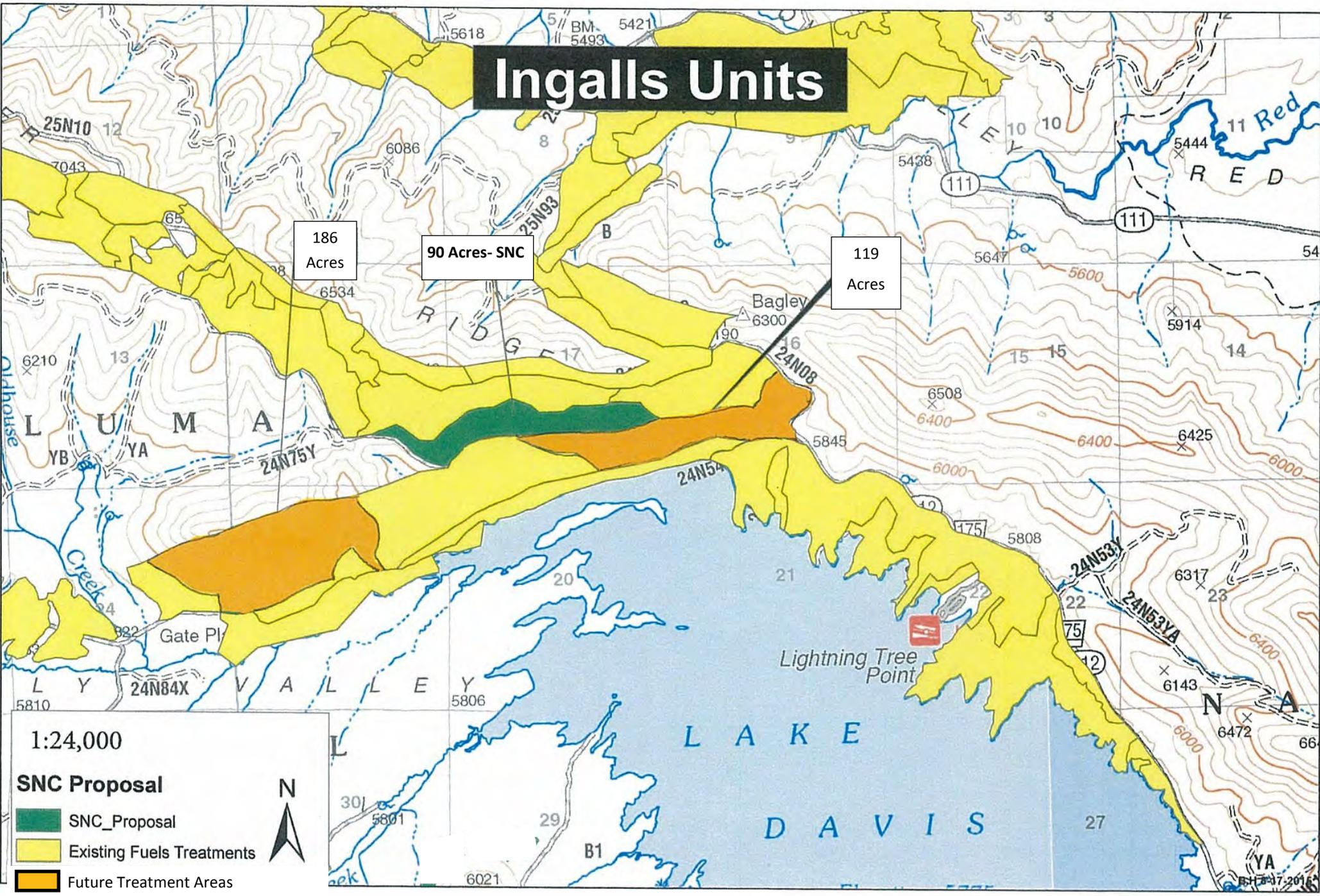
90 Acres- SNC

119  
Acres

1:24,000

**SNC Proposal**

-  SNC\_Proposal
-  Existing Fuels Treatments
-  Future Treatment Areas



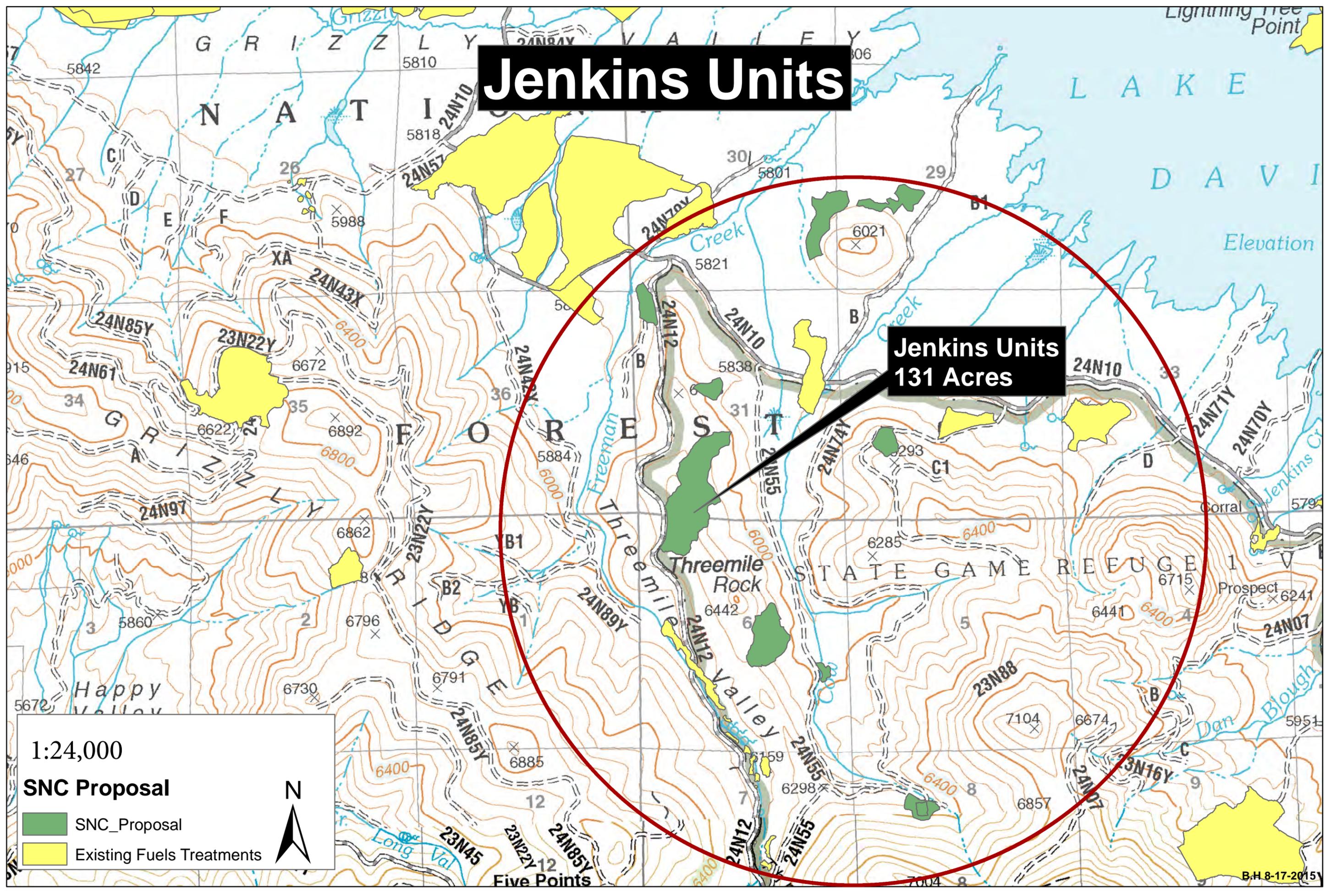
# Jenkins Units

Jenkins Units  
131 Acres

1:24,000

**SNC Proposal**

- SNC\_Proposal
- Existing Fuels Treatments



**STATE OF CALIFORNIA  
SIERRA NEVADA CONSERVANCY**

**Sierra Nevada Conservancy Grant Program  
Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1)**

**Applicant:** Plumas County Fire Safe Council

**Project Title:** Wolf and Grizzly Creek Municipal Watershed Protection

**Subregion:** North Central

**County:** Plumas

**SNC Funding:** \$465,500

**Total Project Cost:** \$599,000

**Application Number:** 837

**Final Score:** 88.5

**PROJECT SCOPE**

This municipal water source protection and enhancement project is located adjacent to two important water reservoirs on the Plumas National Forest, in Plumas County, a rural forested area of the Northern Sierra Nevada. Lake Davis, within the Grizzly Creek watershed, is the primary water source for the city of Portola. Water from Lake Davis contributes to the State Water Project, providing drinking water throughout California. The Wolf Creek watershed treatment areas contribute to water quality of the Round Valley Reservoir, which provides drinking water to the community of Greenville and surrounding areas. This project will treat up to 500 acres of overgrown forest fuels within two major Upper Feather River watersheds as a joint project of the Plumas County Fire Safe Council (PC FSC) and the Plumas National Forest (PNF). This project spatially contributes to a large scale effort by the PNF to create long-term landscape level defensible fuel profile zones – areas of treated forest lands that demonstrate increased resistance to high intensity wildfires, increased forest habitat resiliency, and improved carbon storage capacity and water quality that will in turn safeguard downstream public resources and drinking water supplies.

The Wolf and Grizzly Creek Watershed Protection Project is consistent with Feather River Integrated Regional Watershed Management (IRWM) forest management strategies; is consistent with the Plumas County Community Wildfire Protection Plan (CWPP), 1988 Plumas National Forest Land and Resource Management Plan, USFS Watershed Condition Framework, and the CAL FIRE Lassen-Modoc-Plumas unit fire plan.

Long term management and sustainability of these treatment areas will be accomplished through the PNF's 1988 PNF Land and Resource Management Plan as amended by the 2004 SNAP Amendment Record of Decision as well as the NEPA analyses for each treatment unit.

Fuel reduction and forest restoration treatments include: 131 acres of mechanical thinning of sawlogs and biomass, and chipping and hauling to a biomass co-gen facility (if available); 369 acres of hand thinning, hand or grapple piling and burning.

### PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Agreement (Challenge Cost Share) between USFS and PCFSC Prepared and executed	August 31, 2016
Contracts prepared/completed for solicitation and award (contracts)	Contract Prep Summer/Fall 2016 Advertise May 1, 2017 Award by June 15, 2017
Implementation complete: mechanical thinning, hand thinning and piling (mapping, photo points)	October 2018
Hand piles burned as conditions permit (mapping, photo points)	Fall-Winter 2018 Fall-Winter 2019
Six Month Progress Reports (4)	February 1, 2017 August 1, 2017 February 1, 2018 August 1, 2018
Final Report and Deliverables Due	December 1, 2019
<b>FINAL PAYMENT/FINAL PAYMENT REQUEST</b>	December 1, 2019

### PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
<b>Direct*</b>	
Service Contract Costs	\$400,000.00
Project Management, Reporting	\$5,000.00
<b>Administrative**</b>	
Administrative Costs	\$60,500.00
<b>GRAND TOTAL</b>	<b>\$465,500.00</b>

\* Direct: Direct costs are expenses necessary to acquire, construct, or to adapt property to a new or different use, or to improve property including land, buildings, and equipment. The property/expense must have a useful life longer than one year. Direct expenses should also include costs directly attributable to the project such as performance measure reporting, project management, billing, signs, etc.

\*\* Administrative: Shared expenses associated with the administration of a project and may not exceed 15 percent of the total SNC grant request for direct costs. Examples of administrative costs include the costs of operating/maintaining facilities, general expenses, general administration, etc.

## **PROJECT LETTERS SUPPORT/OPPOSITION**

- Support
  - Indian Valley Community Services District

## **PROJECT PERFORMANCE MEASURES**

There are four Performance Measures common to all grants. In addition, grantees are required to include one to three project-specific measures. Performance Measures listed here represent those proposed by applicants and may be modified through further discussion with SNC staff.

- Acres of Land Improved or Restored

# Notice of Determination

# Appendix D

**To:**

Office of Planning and Research  
U.S. Mail: \_\_\_\_\_ Street Address: \_\_\_\_\_  
P.O. Box 3044 1400 Tenth St., Rm 113  
Sacramento, CA 95812-3044 Sacramento, CA 95814

County Clerk  
County of: \_\_\_\_\_  
Address: \_\_\_\_\_

**From:**

Public Agency: \_\_\_\_\_  
Address: Sierra Nevada Conservancy  
11521 Blocker Drive, Suite 205  
Auburn, CA 95603  
Contact: Patrick Eidman  
Phone: (530) 823-4689

Lead Agency (if different from above): \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_

**SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.**

State Clearinghouse Number (if submitted to State Clearinghouse): 2016042015

Project Title: Wolf and Grizzly Creek Municipal Watershed Protection Project

Project Applicant: Plumas County Fire Safe Council

Project Location (include county): Plumas County; centered at approximately 40°01'41" N and 120°45'01" W.

**Project Description:**

The project involves forestry treatments to reduce wildfire risk and protect municipal water sources on approximately 500 acres of Plumas National Forest Lands. The project would treat approximately 221 acres near Lake Davis, including mechanical and hand thinning. The project would also include approximately 277 acres of hand thinning near Round Valley Reservoir. Excess fuels would be piled and burned on-site, and/or hauled off-site for use in a biomass energy generation facility. The project includes design features, standard operating procedures, and other best management practices that are intended to minimize the potential negative environmental effects of the project, and are required as a result of U.S. Forest Service reviews in compliance with the National Environmental Policy Act.

This is to advise that the Sierra Nevada Conservancy has approved the above  
( Lead Agency or  Responsible Agency)

described project on \_\_\_\_\_ and has made the following determinations regarding the above  
(date)  
described project.

1. The project **will not** have a significant effect on the environment
2. A Negative Declaration **was** prepared for this project pursuant to the provisions of CEQA
3. Mitigation measures **were not** a condition of the approval of the project.
4. A mitigation reporting or monitoring plan **was not** adopted for this project
5. A statement of Overriding Considerations **was not** adopted for this project.
6. Findings **were not** made pursuant to the provisions of CEQA.

This is to certify that the Negative Declaration, supporting documents and record of project approval are available to the General Public at:

Sierra Nevada Conservancy, 11521 Blocker Dr #205, Auburn, CA 95603

Signature (Public Agency): \_\_\_\_\_ Title: \_\_\_\_\_

Date: \_\_\_\_\_ Date Received for filing at OPR: \_\_\_\_\_

Authority cited: Sections 21083, Public Resources Code.  
Reference Section 21000-21174, Public Resources Code.

Revised 2011

**Initial Study and Proposed Negative Declaration**

for the

**Wolf and Grizzly Creek Municipal Watershed Protection Project**

**Sierra Nevada Conservancy Grant Application # 837**

PREPARED FOR

**Sierra Nevada Conservancy**



11521 Blocker Drive #205  
Auburn, CA 95603

PREPARED BY

**Ascent Environmental, Inc.**



455 Capitol Mall, Suite 300  
Sacramento, CA 95814

**April 2016**



# TABLE OF CONTENTS

Section	Page
<b>ACRONYMS AND ABBREVIATIONS .....</b>	<b>II</b>
<b>1 INTRODUCTION .....</b>	<b>1-1</b>
1.1 Introduction and Regulatory Guidance .....	1-1
1.2 Summary of Findings .....	1-2
1.3 Environmental Permits.....	1-2
1.4 Document Organization .....	1-3
<b>2 PROJECT DESCRIPTION AND BACKGROUND .....</b>	<b>2-5</b>
2.1 Background.....	2-5
2.2 Prior CEQA Documents.....	2-5
2.3 Project Location.....	2-6
2.4 Need for the Proposed Project .....	2-6
2.5 Project Objectives.....	2-6
2.6 Description of Proposed Project.....	2-11
<b>3 ENVIRONMENTAL CHECKLIST.....</b>	<b>3-1</b>
3.1 Aesthetics.....	3-3
3.2 Agriculture and Forest Resources .....	3-4
3.3 Air Quality.....	3-6
3.4 Biological Resources .....	3-7
3.5 Cultural Resources .....	3-10
3.6 Geology and Soils .....	3-11
3.7 Greenhouse Gas Emissions.....	3-13
3.8 Hazards and Hazardous Materials .....	3-16
3.9 Hydrology and Water Quality.....	3-18
3.10 Land Use and Planning .....	3-20
3.11 Mineral Resources .....	3-21
3.12 Noise .....	3-22
3.13 Population and Housing.....	3-23
3.14 Public Services.....	3-24
3.15 Recreation.....	3-25
3.16 Transportation/Traffic.....	3-26
3.17 Utilities and Service Systems.....	3-28
3.18 Mandatory Findings of Significance - Including Cumulative Impacts.....	3-29
<b>4 REFERENCES .....</b>	<b>4-1</b>
 <b>Exhibits</b>	
Exhibit 2-1 Vicinity of Round Valley, Ingalls, and Jenkins Projects Areas .....	2-7
Exhibit 2-2 Ingalls Units .....	2-8
Exhibit 2-3 Jenkins Units.....	2-9
Exhibit 2-4 Round Valley Units.....	2-10
 <b>Appendices</b>	
A Freeman Project Design Criteria, Standard Operating Procedures, and Other Requirements	
B Ingalls Project Design Criteria, Standard Operating Procedures, and Other Requirements	
C Keddie Ridge Project Design Criteria, Standard Operating Procedures, and Other Requirements	
D Renewal of Conditional Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvesting Activities	

## ACRONYMS AND ABBREVIATIONS

ARB	California Air Resources Board
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Database
CNRA	California Natural Resources Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWPP	County Community Wildfire Protection Plan
dbh	diameter at breast height
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
EIS	Environmental Impact Statement
FVS	Forest Vegetation Simulator
GHGs	greenhouse gases
HFQLG	Herger-Feinstein Quincy Library Group
IRWM	Feather River Integrated Regional Watershed Management
IS/Proposed ND	Initial Study/Proposed Negative Declaration
MT CO <sub>2e</sub>	metric tons of a carbon dioxide equivalent
NEPA	National Environmental Policy Act
NSAQMD	Northern Sierra Air Quality Management District
PC FSC	Plumas County Fire Safe Council
Plumas NF	U.S. Forest Service, Plumas National Forest
ROD	Record of Decision
SNC	Sierra Nevada Conservancy
SOPs	Standard Operating Procedures

# 1 INTRODUCTION

## 1.1 INTRODUCTION AND REGULATORY GUIDANCE

This Initial Study/Proposed Negative Declaration (IS/Proposed ND) has been prepared by the Sierra Nevada Conservancy (SNC) to evaluate the potential environmental effects resulting from implementation of the proposed Wolf and Grizzly Creek Municipal Watershed Protection Project. The project site is in Plumas County, and would consist of fuel reduction and forest restoration treatments on 500 acres of National Forest lands, which would be implemented by the Plumas County Fire Safe Council.

This document has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). An IS is prepared by a lead agency to determine if a project may have a significant effect on the environment (State CEQA Guidelines Section 15063[a]), and thus to determine the appropriate environmental document. In accordance with State CEQA Guidelines Section 15070, a “public agency shall prepare...a proposed negative declaration or mitigated negative declaration...when: (a) The Initial Study shows that there is no substantial evidence...that the project may have a significant impact on the environment, or (b) The Initial Study identifies potentially significant effects but revisions to the project plans or proposal are agreed to by the applicant and such revisions would reduce potentially significant effects to a less-than-significant level.” In this circumstance, the lead agency prepares a written statement describing its reasons for concluding that the proposed project would not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Report (EIR). By contrast, an EIR is required when the project may have one or more significant environmental effects that cannot clearly be reduced to less-than-significant levels by adoption of mitigation or by revisions in the project design.

As described in the environmental checklist (Chapter 3), the proposed project would not result in significant environmental impacts. Therefore, an IS/ND is the appropriate document for compliance with the requirements of CEQA. This IS/ND conforms to these requirements and to the content requirements of State CEQA Guidelines Section 15071.

Under CEQA, the lead agency is the public agency with primary responsibility over approval of the proposed project. The SNC is considering a discretionary action to award \$500,000 to fund implementation of the project. As such, SNC is the lead agency and has directed the preparation of an analysis that complies with CEQA so as to inform decision-makers and the public of the environmental consequences of implementing the proposed project. This disclosure document is being made available to the public for review and comment. The IS/Proposed ND is available for a 30-day public review period from April 6, 2016 to May 5, 2016.

Supporting documentation referenced in this document is available for review at the SNC office:

Sierra Nevada Conservancy  
11521 Blocker Drive #205  
Auburn, CA 95603  
Phone: (530) 823-4670

Comments or questions should be addressed to:

Patrick Eidman  
Sierra Nevada Conservancy  
11521 Blocker Drive #205  
Auburn, CA 95603  
Phone: (530) 823-4689  
Email: Patrick.Eidman@sierranevada.ca.gov

If you wish to send written comments (including via e-mail), they must be postmarked by May 5, 2016.

After comments are received from the public and reviewing agencies, SNC may (1) adopt the ND and approve the project; (2) undertake additional environmental studies; or (3) abandon the project. If the SNC adopts the ND and authorizes a grant award, then the Plumas County Fire Safe Council may proceed with the project only after executing the required grant agreement and obtaining all necessary permits and other approvals.

## 1.2 SUMMARY OF FINDINGS

Chapter 3 of this document contains the analysis and discussion of potential environmental impacts of the proposed project.

Based on the issues evaluated in that chapter, it was determined that the proposed project would have either no impact or a less-than-significant impact related to all of the issue areas identified in the Environmental Checklist, included as Appendix G of the State CEQA Guidelines. These include the following issue areas:

- ▲ aesthetics,
- ▲ agricultural resources,
- ▲ cultural resources,
- ▲ geology and soils,
- ▲ greenhouse gas emissions
- ▲ hazards and hazardous materials,
- ▲ hydrology and water quality,
- ▲ land use and planning,
- ▲ mineral resources,
- ▲ noise,
- ▲ population and housing,
- ▲ public services,
- ▲ recreation,
- ▲ transportation/traffic,
- ▲ utilities and service systems, and
- ▲ mandatory findings of significance, including cumulative impacts.

## 1.3 ENVIRONMENTAL PERMITS

The project will require the preparation of a Smoke Management Plan and the acquisition of an Air Pollution Permit from the Northern Sierra Air Quality Management District. The project would qualify for Category 5 of the Central Valley Regional Water Quality Control Board's (CVRWQCB) Conditional Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvesting Activities (Board Order No. R5-2014-0144). This waiver includes required standards for water quality protection during forestry activities, post project restoration, and monitoring (see Appendix D).

The U.S. Forest Service, Plumas National Forest (Plumas NF) will be responsible for preparing the Smoke Management Plan, acquiring the Air Pollution Permit, and submitting required materials to the CVRWQCB prior to initiation of applicable project activities. The Plumas NF is also responsible for ensuring compliance with the terms of the Air Pollution Permit and Conditional Waiver of Waste Discharge Requirements.

## 1.4 DOCUMENT ORGANIZATION

This IS/ND is organized as follows:

**Chapter 1: Introduction.** This chapter provides an introduction to the environmental review process. It describes the purpose and organization of this document. It also presents a summary of findings.

**Chapter 2: Project Description and Background.** This chapter describes the purpose of and need for the proposed project, identifies project objectives, and provides a detailed description of the proposed project.

**Chapter 3: Environmental Checklist.** This chapter presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if each of a range of impacts would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact. If any impacts were determined to be potentially significant, an EIR would be required. For this project, however, none of the impacts were determined to be significant after implementation of mitigation measures.

**Chapter 4: References.** This chapter lists the references used in preparation of this IS/Proposed ND.

This page intentionally left blank.

## 2 PROJECT DESCRIPTION AND BACKGROUND

### 2.1 BACKGROUND

The Round Valley, Ingalls, and Jenkins Projects (now known as the Wolf and Grizzly Creek Municipal Watershed Protection Project) were initially developed and planned under the Quincy Library Group (QLG) Pilot Project as part of the Herger-Feinstein Quincy Library Group (HFQLG) Act of Congress. Funding for HFQLG projects ended in 2012, leaving the Plumas NF looking for other solutions to continue their efforts to increase the pace and scale of landscape level forest treatments. The project has gone through the National Environmental Policy Act (NEPA) process with public scoping, input, and collaboration, but the implementation of the project was left unfunded. This project is the product of a forest collaborative effort that has been developed during the past year, this effort is a joint project of the Plumas County Fire Safe Council (PC FSC) and the Plumas NF. The PC FSC submitted a grant application to the SNC requesting \$500,000 to fund implementation of the project.

The Wolf and Grizzly Creek Watershed Protection Project is consistent with Feather River Integrated Regional Watershed Management (IRWM) forest management strategies; is consistent with the Plumas County Community Wildfire Protection Plan (CWPP), 1988 Plumas National Forest Land and Resource Management Plan, USFS Watershed Condition Framework, and the California Department of Forestry and Fire Protection Lassen–Modoc–Plumas unit fire plan. The proposed projects address elements identified in the action plans for both lower Wolf and Big Grizzly Creek priority watersheds.

### 2.2 PRIOR CEQA DOCUMENTS

Environmental documents in compliance with NEPA have been completed for all proposed work activities, but CEQA compliance has not been completed. The purpose of this IS/ND is to provide CEQA compliance for the Wolf and Grizzly Creek Watershed Project.

The proposed project is located entirely on Plumas National Forest System Land. The proposed treatments would fully comply with the 1988 Plumas National Forest Land and Resource Management Plan as amended by the 2004 Sierra Nevada Framework Plan Amendment Record of Decision. These plans set forth acceptable activities, standards and guidelines, and necessary monitoring requirements to meet long-term sustainability goals. In addition, project-level design criteria and project-level monitoring requirements for proposed treatments and compliance with the National Forest Management Act are set forth in the following NEPA analyses (available at: <http://www.sierranevada.ca.gov/other-assistance/applying-for-a-grant/september-1-2015-applications/837ed.pdf>):

- ▲ 2011 Keddie Ridge Project Final Environmental Impact Statement and Record of Decision (Keddie Ridge Project EIS) – evaluated activities at the Round Valley project site
- ▲ 2006 Freeman Project Environmental Impact Statement and Record of Decision (Freeman Project EIS) – evaluated activities at the Jenkins project site
- ▲ 2011 Ingalls Project Environmental Assessment and Decision Notice and Finding of No Significant Impact (Ingalls Project EA) – evaluated activities at the Ingalls project site

Design criteria, implementation, and monitoring requirements would be implemented under the proposed project to be compliant with the Plumas National Forest guiding direction. Additionally, an agreement would be developed between the Plumas NF and the SNC to ensure that the SNC would be able to perform monitoring within the project area for the next 25 years.

## 2.3 PROJECT LOCATION

The Wolf and Grizzly Creek Watershed is located in the Plumas National Forest, in Plumas County, a rural forested area of the Northern Sierra Nevada. The project would take place in two municipal watersheds in the upper Feather River Watershed. Three areas are included as part of this project: the Round Valley area, Jenkins, and Ingalls. See Exhibit 2-1 through 2-4 for the project site locations.

## 2.4 NEED FOR THE PROPOSED PROJECT

This project contributes to a large scale effort by the Plumas NF to create landscape level defensible fuel profile zones, which are areas of treated forest lands that have increased resiliency to high intensity wildfires. Several completed projects are in the nearby vicinity, and the implementation of this project would create increased resilience of the treated areas to catastrophic wildfire. The project area also provides wildlife habitat and extensive recreation opportunities for residents and visitors to the region, which would be enhanced and protected from the effects of catastrophic wildfire.

The project was designed to reduce fire hazard and restore forest health within watersheds that provide municipal water sources. These municipal water sources serve the disadvantaged communities of Greenville and Portola. Lake Davis, within the Grizzly Creek watershed, is the primary water source for the city of Portola. Water from Lake Davis also contributes to the State Water Project, providing water throughout California. Reducing the risk of destructive wildfires surrounding these water reservoirs is essential to providing clean and abundant water to California and maintaining healthy watershed ecosystems. In addition, project activities would contribute to the local economy through the sale of forest products from the Jenkins site, which could include chipped biomass that could be used for electricity generation in nearby power generation facilities, and merchantable sawlogs that could be sold to a nearby sawmill. Project activities on all of the treatment sites will create forest management jobs and provide opportunities for local forestry businesses.

## 2.5 PROJECT OBJECTIVES

The proposed project would contribute to the purpose and need associated with the Freeman Project, Ingalls Project, and Keddie Ridge Project. These include the following:

### Keddie Ridge Project Purpose and Need

- ▲ Reduce Hazardous Fuel Accumulation
- ▲ Improve Forest Health
- ▲ Protect and Enhance Habitat for Region 5 Forest Service Sensitive Plant and Wildlife Species
- ▲ Improve Watershed Health
- ▲ Reduce Noxious Weed Infestations

### Freeman Project Purpose and Need

- ▲ Reduce Fuels
- ▲ Improve Forest Health
- ▲ Improve Bald Eagle Habitat
- ▲ Contribute to the Economic Stability of the Local Community
- ▲ Improve Aspen Stands
- ▲ Provide Access Needed to Meet Other Project Objectives and Reduce Transportation System Impacts

# Wolf and Grizzly Creek Municipal Watershed Protection

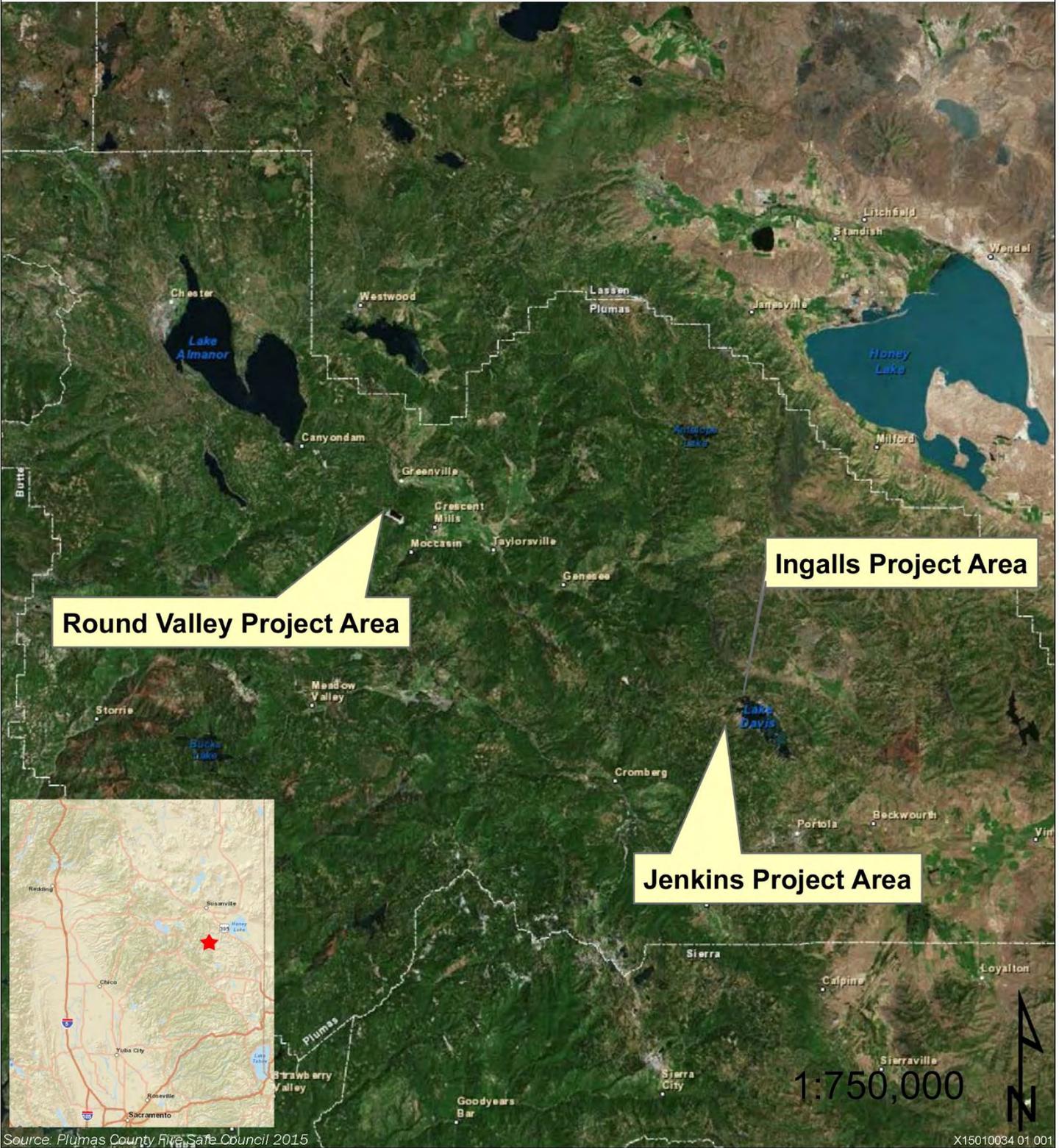
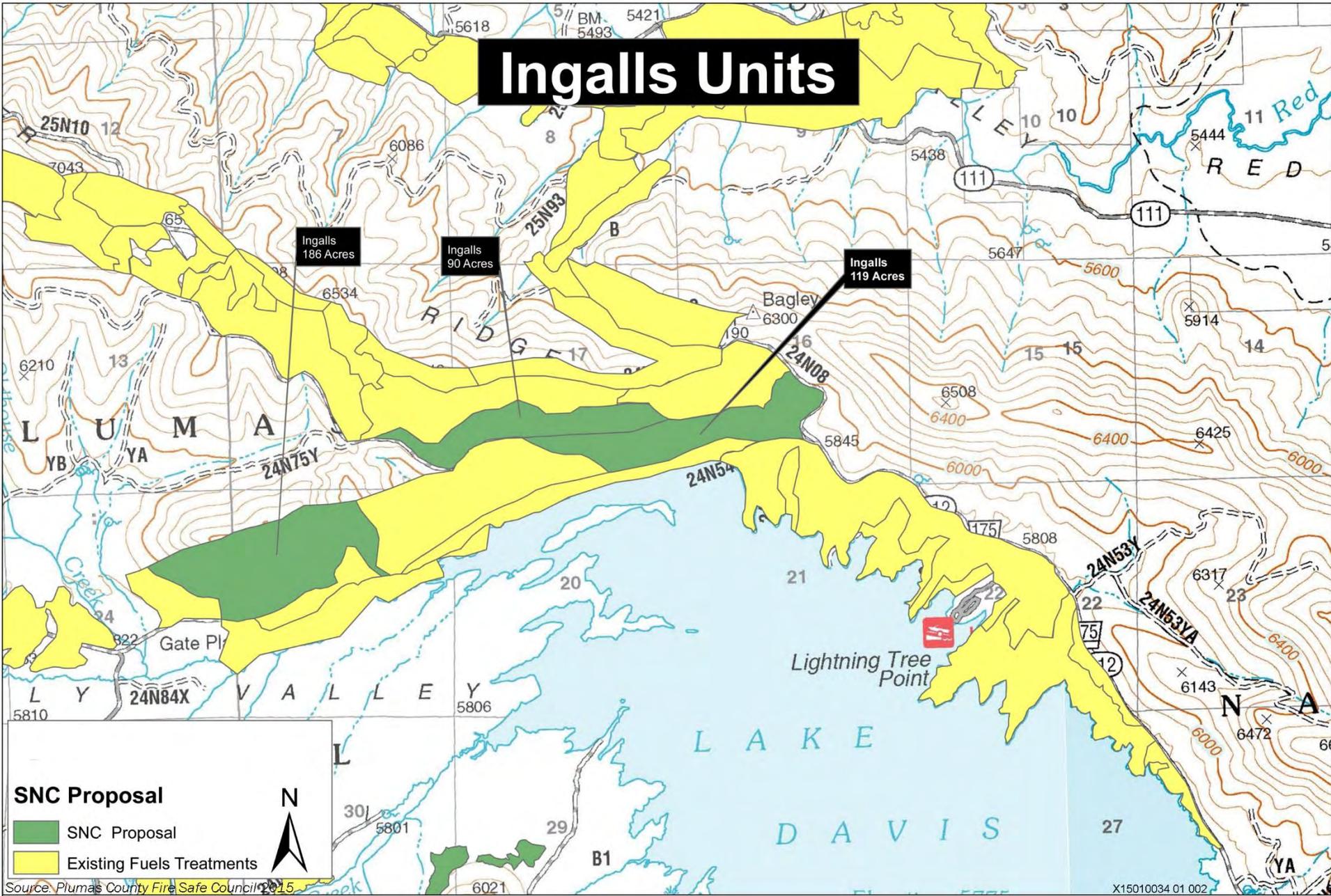


Exhibit 2-1

Vicinity of Round Valley, Ingalls, and Jenkins Projects Areas



# Ingalls Units

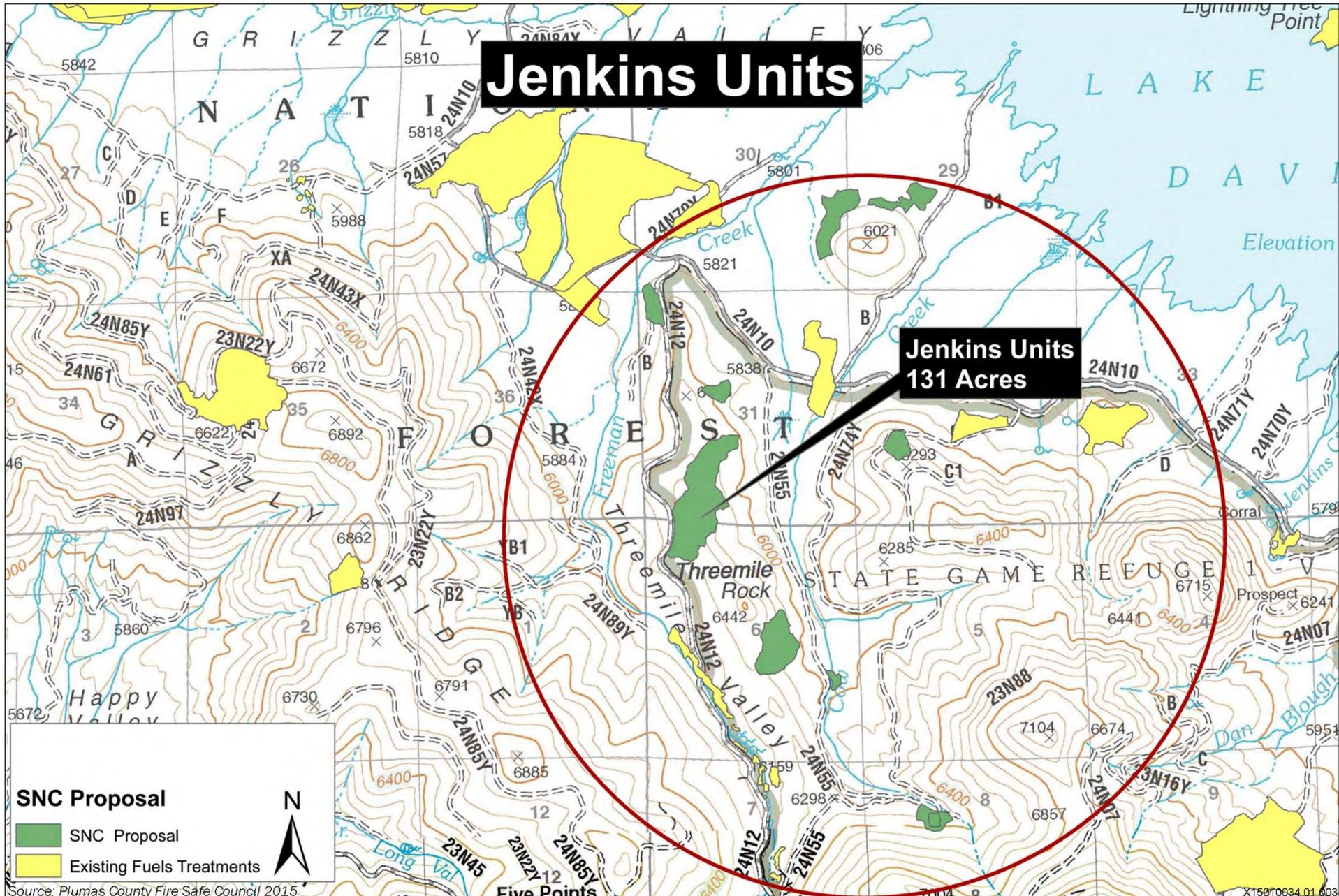


Source: Plumas County Fire Safe Council 2015

X15010034 01 002



# Jenkins Units



Jenkins Units  
131 Acres

**SNC Proposal**

- SNC Proposal
- Existing Fuels Treatments

Source: Plumas County Fire Safe Council 2015

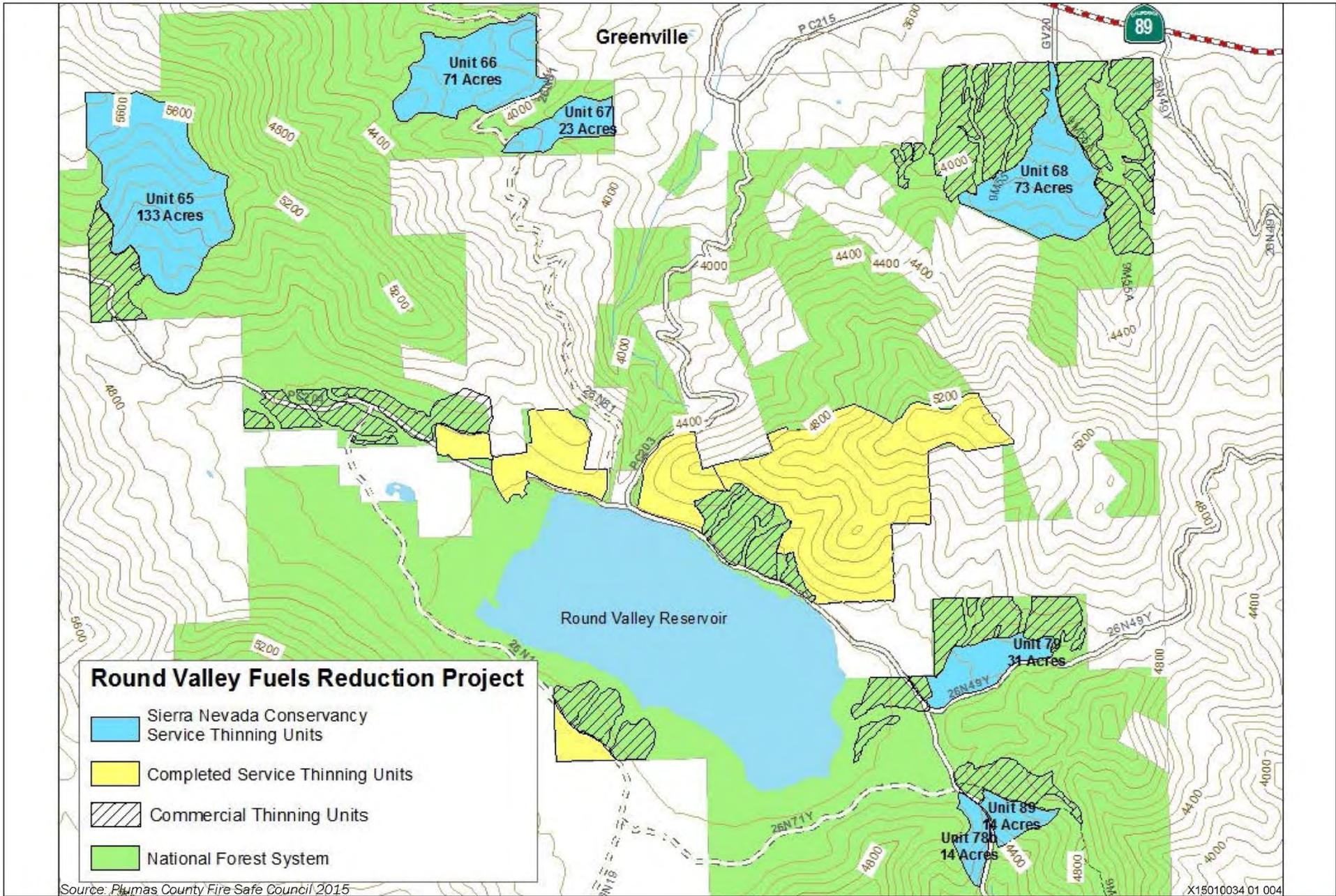


Exhibit 2-4

Round Valley Units



### Ingalls Project Purpose and Need

- ▲ Strategically reduce fuel loads
- ▲ Improve forest health and fire resiliency
- ▲ Provide for old forest ecosystems and associated wildlife species
- ▲ Improve aspen and cottonwood growing conditions
- ▲ Contribute to the economic health and stability of local rural communities
- ▲ Provide the road access needed to meet project objectives while reducing transportation system effects.

## 2.6 DESCRIPTION OF PROPOSED PROJECT

The project would consist of the treatment of approximately 500 acres of fuels within the Wolf and Grizzly Creek Watersheds. Fuels reduction and forest restoration treatments would include:

- ▲ 131 acres of mechanical thinning of sawlogs and biomass, chipping and hauling of forest products on the Jenkins treatment site. Fuels would be reduced by generally thinning from below (removing trees starting with the smallest diameter), except for trees that are at high risk of mortality due to insects or diseases. Where mechanical, ground-based harvest equipment is used, trees would be removed using whole tree yarding, effectively removing most limbs and tree tops from the stand, thereby reducing the need for post-project slash pile fuels treatments. No trees over 29.9 inches diameter at breast height (dbh) would be removed, except for operability (e.g., new skid trails, landings, temporary roads). Mechanical felling would be restricted to slopes having a gradient of less than 35 percent. Exceptions may be made for short (less than 100-foot) pitches within the interior of units where slope exceeds this limit. Mastication, grapple pile and/or underburning may follow thinning, if needed to meet ladder and ground fuel-reduction objectives.

Chipped biomass may be hauled to nearby biomass facilities for energy production. Three direct combustion biomass facilities are located in the general vicinity of the treatment site. The Collins Pine facility located in Chester generates roughly 13 megawatts (MW) of power, the Sierra Pacific Industries Quincy Power Plant, located in Quincy, generates roughly 20 MW of power, and the Honey Lake facility located approximately 20 miles east of Susanville generates roughly 30 MW of power. All three plants operate with a combination of mill residue and in-forest biomass feedstock. Some portion of biomass removed from Plumas County forests also feeds the Sierra Pacific Industries Loyaltan Biomass facility, located in Sierra County, generating roughly 10 MW (Plumas County 2012). Marketable sawlogs may be removed from the site and hauled to a nearby sawmill.

Additional detail on the mechanical treatments proposed at the Jenkins site is included in the Freeman Project EIS, beginning on page 46.

- ▲ 369 acres of hand thinning, hand or grapple piling, and burning at the Round Valley and Ingalls treatment sites. Live and dead conifer trees <11.9" dbh would be felled by a sawyer and piled. Grapple piling may be used in some locations, which generally involves use a tracked excavator that can physically move dead and downed fuels and live brush. Piled materials would be left to dry, then burned on site.

Additional detail on the hand treatments proposed for the Round Valley treatment sites are included in the Keddie Ridge Project EIS, beginning on page 11. The Ingalls Project EA provides additional details on the hand treatments proposed at the Ingalls treatment sites, beginning on page 22.

The NEPA documents associated with the Freeman Project (Jenkins site), Ingalls Project (Ingalls site), and Keddie Ridge (Round Valley site) contained specific design features, standard operating procedures, and other best management practices intended to minimize the negative environmental effects of the project. Resources areas addressed, include:

- ▲ Air Quality
- ▲ Botany
- ▲ Range
- ▲ Cultural Resources
- ▲ Visual Resources
- ▲ Transportation
- ▲ Noxious Weeds
- ▲ Soils
- ▲ Hydrology
- ▲ Visual Quality
- ▲ Wildlife

These measures consist of environmentally protective actions, such as limits on the timing of fuel reductions activities, limitations on the locations from which trees can be removed, and avoidance of environmental resources. Project design features, standard operating procedures, and other methods to reduce potential environmental effects would be implemented as part of the project. The specific measures for each treatment site are provided in Appendices A, B, and C.

### 3 ENVIRONMENTAL CHECKLIST

#### ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aesthetics               | <input type="checkbox"/> Agriculture and Forest Resources | <input type="checkbox"/> Air Quality                        |
| <input type="checkbox"/> Biological Resources     | <input type="checkbox"/> Cultural Resources               | <input type="checkbox"/> Geology / Soils                    |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials    | <input type="checkbox"/> Hydrology / Water Quality          |
| <input type="checkbox"/> Land Use / Planning      | <input type="checkbox"/> Mineral Resources                | <input type="checkbox"/> Noise                              |
| <input type="checkbox"/> Population / Housing     | <input type="checkbox"/> Public Services                  | <input type="checkbox"/> Recreation                         |
| <input type="checkbox"/> Transportation / Traffic | <input type="checkbox"/> Utilities / Service Systems      | <input type="checkbox"/> Mandatory Findings of Significance |
|   |   | <input type="checkbox"/> None with Mitigation               |
- 
- None

### DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project could not have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- I find that although the proposed project **COULD** have a significant effect on the environment, there **WILL NOT** be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature



Date

4/5/2016

Printed Name

ROBERT K KINGMAN

Title

ASSISTANT EXECUTIVE OFFICER

Sierra Nevada Conservancy

Agency

### 3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. Aesthetics. Would the project:</b>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.1.1 Discussion

**a) Have a substantial adverse effect on a scenic vista?**

**Less than significant impact.** A scenic vista is generally considered to be a location from which the public can experience unique and exemplary high-quality views—typically from elevated vantage points that offer panoramic views of great breadth and depth. The visual character of the site is that of undeveloped forested lands. The project proposes a series fuels reduction activities that would improve the health of the forest and reduce the potential for catastrophic fires. The project would thin smaller trees, but would not substantially change size class or density class of trees (Keddie Ridge EIS, pages 75-82; Freeman Project EIS, pages 112-121; Ingalls Project EIR, pages 74-84). The treated sites would maintain the existing undeveloped and forested visual character of the site and scenic vistas would not be adversely affected by these activities. Because the existing forested visual character of the site would remain, and the potential for visual impacts from catastrophic fire would decrease, this impact would be less than significant.

**b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**Less than significant impact.** Portions of the project site would be located near to state scenic highways (i.e., State Route [SR] 70 and SR 89), however project activities would not be visible from travelers along these routes. The project would involve fuels reduction, which would involve tree removal with the purpose of improving the health of the forest. These activities would not result in substantial damage because the character of the land would remain intact and the potential for catastrophic fires, which would substantially damage scenic resources, would be reduced. Thus, this impact would be less than significant.

**c) Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less than significant impact.** Short-term effects may result where burned areas, skid trails, and tree stumps would be visible from forest roads. Fuels treatments would likely have long-term beneficial effects on scenic resources by reducing the risk of a wildfire destroying the existing landscape; thus, ensuring that existing scenic landscapes are maintained or improved (Keddie Ridge Project EIS, pages 301-302). Visual quality management Standard Operating Procedures (SOPs) are included in the Freeman Project, Ingalls Project, and Keddie Ridge Project EISs to address potential impacts associated with the project. These SOPs would be implemented as part of the project, including measures that address stump heights, landing and skid trail

locations, and tree marking (see Appendices A, B, and C for detailed information). Because the treatments would have long-term beneficial effects on visual character, and negative impacts would be short-term in nature and minimized by the use of SOPs, this impact would be less than significant.

**d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**Less than significant impact.** The project does not propose installation of new lighting fixtures or structures that could cause glare. Burn piles would be used in some cases to dispose of collected fuels, resulting in some new sources of light. However, because this would be short-term and largely screened from public views by the surrounding forest, this impact would be less than significant.

### 3.2 AGRICULTURE AND FOREST RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>II. Agriculture and Forest Resources.</b>				
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.</p>				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.2.1 Discussion

- a) **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

**No impact.** There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project area (FMMP 2012). There would be no impact.

- b) **Conflict with existing zoning for agricultural use or a Williamson Act contract?**

**No impact.** There are no lands subject to Williamson Act contracts (Plumas County 2008) or zoned for agricultural use (Plumas County 2011) within the project area. There would be no impact.

- c) **Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**

**Less than significant impact.** The use of forest land and timberland after implementation of the project would remain the same as under the existing conditions. Treatments would reduce understory vegetation and would result in incidental mortality in the midstory, but would not be expected to substantially change size class or density class of trees (Keddie Ridge EIS, pages 75-82; Freeman Project EIS, pages 112-121; Ingalls Project EIR, pages 74-84). There would be no conflict with areas zoned as forest land or timberland. This impact would be less than significant.

- d) **Result in the loss of forest land or conversion of forest land to non-forest use?**

**Less than significant impact.** See discussion c), above.

- e) **Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?**

**No impact.** See discussion a) and b), above.

### 3.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>III. Air Quality.</b>				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.3.1 Discussion

**a) Conflict with or obstruct implementation of the applicable air quality plan?**

**Less than significant impact.** Plumas County has been designated as nonattainment with respect to California Ambient Air Quality Standards for particulate matter with an aerodynamic diameter of 10 microns or less (PM<sub>10</sub>) (ARB 2014). Burn piles, which could be implemented as part of the project, would emit PM<sub>10</sub>. However, all burning would be completed under approved burn and smoke management plans, which are required by the Norther Sierra Air Quality Management District (NSAQMD). These plans would describe NSAQMD regulations for burning activities and associated smoke management, and would detail an implementation schedule, the responsible parties, and monitoring and reporting requirements. Piles would be constructed to minimize emissions, through considerations such as weather conditions, wind direction, and burn pile size. (Ingalls Project EA, page 59; Keddie Ridge Project EIS, pages 116-117; Freeman Project EIS, page 97-100; Appendix A; Appendix B). Because the project would be required to meet all NSAQMD air quality requirements, which include measures to reduce PM<sub>10</sub> emissions to the degree feasible, this impact would be less than significant.

**b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

**Less than significant impact.** See discussion a), above.

**c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

Less than significant impact. Less than significant. See discussion a), above.

**d) Expose sensitive receptors to substantial pollutant concentrations?**

Less than significant impact. Sensitive receptors near the project area include: recreational users, residents, and private land owners. However, as described above under a), b), and c), emissions would not be substantial. This impact would be less than significant.

**e) Create objectionable odors affecting a substantial number of people?**

No impact. The project does not include new odor sources (e.g., wastewater treatment plant, landfills). There would be not impact.

### 3.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. Biological Resources. Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.4.1 Discussion

**a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

**Less than significant impact.** Several special-status animal and plant species are known or have potential to occur in the project area. The NEPA documents approved for the Freeman Project, Ingalls Program, and Keddie Ridge Project include specific design features and SOPs to minimize, avoid, or mitigate potential effects of project implementation on special-status species (see Appendices A, B, and C). For example, limited operating periods would be implemented within buffer zones around territories/breeding sites of bald eagle, California spotted owl, great gray owl, northern goshawk, and willow flycatcher to avoid project-related disturbances to these species during sensitive breeding periods. Additionally, occurrences of sensitive plant species would be flagged and avoided through establishing a treatment control area in areas containing sensitive plants.

A search of the California Natural Diversity Database (CNDDDB 2015) and the California Native Plants Society inventory of rare, threatened, and endangered plants (CNPS 2015) were performed to determine if special status species, in addition to those addressed in the NEPA documents, could be affected by the project. These database queries evaluated all documented occurrences of state or federally identified special status species within 1 mile of the project area. The database searches found that one animal (western bumble bee [*Bombus occidentalis*]; designated as Forest Service sensitive in USFS Region 5) and one special-status plant species (watershield [*Brasenia schreberi*]; California Rare Plant Rank 2B.3) that were not specifically addressed in the NEPA documents are reported to be historically or recently present in the vicinity of the project area. Watershield is an aquatic plant; the nearest known occurrence is within Round Valley Reservoir, which would not be affected by the proposed vegetation/fuels treatments. Additionally, as described in the NEPA documents, riparian habitat conservation areas would be subject to specific prescriptions that would maintain suitable habitat values for aquatic species and meet riparian management objectives. Therefore, the proposed project would not substantially affect watershield if the species is present in aquatic habitats within or adjacent to treatment units.

The reported CNDDDB occurrence of western bumble bee within 1 mile of the Round Valley treatment sites within the project area is from 1953 and was not precisely mapped. Bumble bees require plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle; queens overwinter in the ground in abandoned rodent nests at depths from 6 to 18 inches, and typically emerge around mid-March. Western bumble bees have a short proboscis or tongue length relative to other co-occurring bumble bee species, which restricts nectar gathering to flowers with short corolla lengths and limits the variety of flower species that bees are able to exploit. Although the potential for western bumble bee to occur in the project area and be affected by project implementation is considered low, based on the lack of recent records of the species in the project vicinity, potential habitat is present and surveys have not been conducted to determine presence or absence of western bumble bee. Therefore, this analysis assumes that western bumble bee could use habitats in the project area, and potential effects of project implementation on this species are discussed below.

Areas with the highest likelihood of supporting western bumble bee include meadows, forest gaps, and other open areas that support flowering plants for foraging, and areas with underground cavities for nesting. Vegetation removal associated with the fuels treatments could temporarily disturb western bumble bees, or result in injury or mortality, if they are present in the treatment units. For example, ground disturbances could collapse or otherwise damage underground colony/nest sites if they are present. However, because no recent records of western bumble bee are known from the project area, project-related effects on individuals or colonies/nests are not expected.

Implementing the proposed fuels treatments could result in removal of vegetation and disturbance of microhabitat types that could support western bumble bee. Specific areas and microhabitats with the highest likelihood of supporting western bumble bee (meadows, forest gaps, and other open areas that support flowering plants for foraging) are not expected to substantially lose their forage value. Following vegetation treatments, native vegetation would be allowed to regenerate within the treatment units. Therefore, the availability of forage plants and potential nest sites is not expected to decrease over the long term, despite changes to overstory vegetation cover in forest habitats. Additionally, the creation of gaps and openings within existing forest habitat as a result of project implementation could enhance bumble bee foraging habitat in some areas, by potentially increasing the abundance of flowering herbaceous and shrub species and reducing dense tree cover. Overall, project implementation is not expected to substantially reduce the quantity or quality of bumble bee forage plants and nest sites in the project area. Any disturbances to western bumble bee and suitable habitat would be temporary and relatively minor if they occur, and would not substantially affect this species.

Because project implementation would not substantially affect watershed or western bumble bee, and implementation of the specific design features and SOPs for biological resource protection included in the approved NEPA documents would prevent substantial effects on other special-status species known or with potential to occur in the project area, potential effects on special-status species would be less than significant.

**b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

**Less than significant impact.** The project area contains special habitats, including aspen communities, seeps, springs, and willow/alder communities. The NEPA documents approved for the Freeman Project, Ingalls Program, and Keddie Ridge Project contain specific design features and SOPs to address sensitive communities (see Appendices A, B, and C). For example, at the Jenkins treatment sites buffer zones would be established and maintained around seeps, springs, and associated meadows, according to standard operating procedures (Freeman Project EIS, page 135-136; 156-170). At the Round Valley treatment sites, riparian habitat conservation areas would be subject to specific prescriptions that would maintain suitable habitat values for aquatic species and meet riparian management objectives, while creating riparian conditions that would be less susceptible to high-severity fires (Keddie Ridge EIS, page 142). In some areas of the Round Valley treatment sites, short-term decreases in channel shading and ground cover could occur, which would be minimized through implementation of design criteria and best management practices [BMPs] (Keddie Ridge EIS, pages 163-174). No substantial impacts on riparian habitat or other sensitive natural communities are anticipated at the Ingalls treatment sites (Ingalls Project EA, pages 141 – 148). This impact would be less than significant.

**c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

**Less than significant impact.** As described above, under b), seeps and springs occur within the project area. However, specific design features and SOPs are included in the Freeman Project, Ingalls Project, and Keddie Ridge Project NEPA documents, which would be implemented as part of the project (see Appendices A, B, and C). Implementation of these SOPs would avoid effects to areas that may be federally protected wetlands. This impact would be less than significant.

**d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**Less than significant impact.** The project would reduce understory vegetation and would result in incidental mortality in the midstory, but would not be expected to substantially change size class or density class of

trees (Keddie Ridge EIS, pages 75-82; Freeman Project EIS, pages 112-121; Ingalls Project EIR, pages 74-84). Thinning of the forest stands could be beneficial for some migratory species (e.g., warbling, vireo, chipping, sparrow, lazuli bunting, white-crowned sparrow, western bluebird, common nighthawk, and common poorwill), and less advantageous for other (Swainson’s thrush, olive-side flycatcher and evening grosbeak (Freeman Project EIS, page 156-170). However, because the project would not result in a conversion of forested land to non-forester, or substantially change size class or density class of trees, it would not substantially interfere with the movement of migratory birds or other wildlife species. Waterways that contain migratory fish would not be affected. This impact would be less than significant.

**e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**Less than significant impact.** The 1984 Plumas County General Plan contains directives to identify important wildlife habitats, important wildlife migration routes, and significant wetlands. No actions associated with the project would conflict with policies associated with Plumas County. This impact would be less than significant.

**f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

**No impact.** There are no Habitat Conservation Plans or Natural Community Conservation Plans associated with the project area; there would be no impact.

### 3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. Cultural Resources. Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.5.1 Discussion

**a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?**

**Less than significant impact.** The project area may contain historical resources. However, protection measures to avoid cultural resources would be implemented through actions including clearly delineating and avoiding areas that have the potential to contain such resources (see Ingalls EA, page 193; Keddie Ridge EIS, page 280; Freeman Project EIS, page 470). These measures are detailed within project design

criteria and SOPs associated with the Freeman Project EIS, Ingalls Project EA, and Keddie Ridge EIS, and provided in Appendices A, B, and C of this Initial Study. This impact would be less than significant.

**b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

**Less than significant impact.** Protection measures to avoid cultural resources would be implemented as part of the project, including clearly delineating and avoiding areas that have the potential to contain such resources (see Ingalls EA, page 193; Keddie Ridge EIS, page 280; Freeman Project EIS, page 470). In addition, tribal outreach and consultation has occurred by both the U.S. Forest Service and SNC. During the NEPA evaluation, the U.S. Forest Service, Plumas National Forest engaged with local tribal groups including the Maidu Summit Consortium & Conservancy, and Greenville, Washoe, Mooretown, and Susanville Rancherias. In addition, SNC consulted with tribal groups to identify the presence of tribal resources consistent with AB 52. SNC identified tribal groups that could have information on resources in the project area by 1) consulting tribal contact lists provided by the California Native American Heritage Commission, and 2) reviewing a map of tribal ancestral territories prepared for the California Water Plan. The SNC identified the Maidu Summit Consortium & Conservancy and the Greenville Rancheria as tribal groups with potential interest in the site. On October 7, 2015, the SNC provided these groups with information regarding the project and provided an opportunity for consultation. Because the project includes protection measures to avoid impacts to cultural resources, and tribal consultations did not identify additional tribal resources, the impact would be less than significant.

**c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**Less than significant impact.** The project would not include substantial ground-disturbing activities that could encounter paleontological resources or unique geologic features. This impact would be less than significant.

**d) Disturb any human remains, including those interred outside of formal cemeteries?**

**Less than significant impact.** The project would not include substantial ground-disturbing activities that could encounter human remains, including those interred outside of formal cemeteries. This impact would be less than significant.

**3.6 GEOLOGY AND SOILS**

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VI. Geology and Soils. Would the project:</b>				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.6.1 Discussion

a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)**

**No impact.** There are no delineated Alquist-Priolo Earthquake Fault Zones in the project area (Plumas County 2012). There would be no impact.

ii) **Strong seismic ground shaking?**

**No impact.** While the project area is not located within an Alquist-Priolo Earthquake Fault Zone, several potentially active faults pass through Plumas County, including the Almanor Fault, Butt Creek Fault Zone, Indian Valley Fault, and the Mohawk Valley Fault. Additionally, the Honey Lake and Fort Sage Faults are active faults located east of the County. While these faults are near the project area and could result in seismic-related effects (i.e., groundshaking, etc.) to residents and property, seismic hazard mapping indicates that overall Plumas County has low seismic hazard potential (Plumas County 2012). The project would not result in the construction of buildings near faults or otherwise increase the risk of exposure of people to strong seismic shaking. Thus, there would be no impact.

iii) **Seismic-related ground failure, including liquefaction?**

**Less than significant impact.** See discussion ii), above.

iv) **Landslides?**

**No impact.** The project would consist of fuels management activities, which would not include construction of new structures or substantial ground disturbance that could substantially increase exposure of people or structures to landslides. Thus, there would be no impact.

b) **Result in substantial soil erosion or the loss of topsoil?**

**Less than significant impact.** The project would not include substantial ground disturbance that could result in soil erosion or the loss of topsoil (see Ingalls Project EA, pages 170 – 177; Keddie Ridge Project EIS, pages 202-205; Freeman Project, pages 369-379). The project would include temporary erosion control

Best Management Practices to minimize erosion potential during treatment operations, as described in appendixes A, B, and C. The project would maintain existing drainage patterns and would include spreading slash and/or chipped materials to meet minimum ground cover requirements for each site, which would reduce long-term erosion potential. Treatments on the Jenkins site could include the construction of temporary roads and the use of skid trails. However, skid trails and temporary roads would not be constructed on steep slopes (greater than 35% slope) or with stream or drainage buffers, except at designated crossings as described in appendix A. Skidder trails and temporary roads would be de-compacted, as needed, to meet U.S. Forest Service, Region 5 soil compaction standards. After forest treatments are complete, temporary roads would be re-contoured to restore natural topography, blocked from vehicular access, and waterbars would be installed to minimize erosion potential. All skid trails and temporary roads would achieve 40 – 70% ground cover after treatment, as described in Appendix A. Most project activities would not result in ground disturbance; and activities that could result in ground disturbance, such as the creation of temporary roads, would employ temporary erosion control measures during treatments, and would be restored after treatments. Thus, this impact would be less than significant.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?**

**Less than significant impact.** See discussion b), above.

**d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?**

**Less than significant impact.** The project would not result in the construction of new buildings or otherwise increase the exposure of people or structures to expansive soils. See also discussion b), above.

**e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

**No impact.** The project would not involve the use or installation of septic tanks or alternative waste water disposal systems where sewer is not available for the disposal of wastewater. Thus, there would be no impact.

### 3.7 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VII. Greenhouse Gas Emissions. Would the project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 3.7.1 Discussion

#### a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

**Less than significant impact.** The project would consist of mechanical and hand treatment activities, and pile burning of excess forest fuels, which would result in the release of greenhouse gases (GHGs). However, the project would result in fewer, less frequent, smaller, and shorter duration wildfires than would otherwise occur, which would reduce GHG emissions over time. The Northern Sierra Air Quality Management District (NSAQMD) currently has no guidance concerning CEQA evaluation of GHG emissions. To evaluate whether the project would result in significant GHG emissions, this analysis uses an approach that is very similar to the approach recently used by the California Board of Forestry and Fire Protection to evaluate a statewide vegetation treatment program (Board of Forestry 2015 pages 4-417 to 4-426). To evaluate the significance of the project's GHG emissions, the expected avoided GHG emissions from a catastrophic wildfire were compared to the GHG emissions expected from implementation of the project.

The GHG emissions from forest treatment activities vary depending on site conditions, timing and duration of treatments, treatment approach and equipment, and other factors. The Draft Environmental Impact Report recently prepared by the California Board of Forestry and Fire Protection for a statewide vegetation treatment program provides typical GHG emission estimates for fuels reductions treatments (Board of Forestry 2015). While these do not reflect exact emissions from the proposed project, these GHG estimates can be scaled-down to provide a reasonable estimate of GHG emissions from treatment activities associated with the project.

Manual treatment activities are proposed on 369 acres at the Round Valley and Ingalls treatment sites. These treatments require large crew sizes and the use of handheld tools. The Board of Forestry estimated equipment emissions from power tools like chainsaws and power brush saws, as well as emissions from typical worker trips to and from a treatment site. This analysis found that a 6,000-acre manual treatment project would result in 4 metric tons of a carbon dioxide equivalent (MT CO<sub>2</sub>e) emissions (Board of Forestry 2015, page 4-409). Based on the estimated emissions per acre in the Board of Forestry analysis, the 369 acres of manual treatments in the proposed project would result in less than 0.01 MT CO<sub>2</sub>e emissions.

Mechanical treatment activities are proposed on 131 acres of the Jenkins treatment site. The Board of Forestry estimated equipment emissions, as well as emissions from typical worker trips to and from a site. This analysis found that a 12,000-acre mechanical treatment project would result in 109 MT CO<sub>2</sub>e emissions (Board of Forestry 2015, page 4-409). Based on the emissions per acre in this analysis, the proposed project would result in 0.01 MT of GHG emissions for the 131 acres of mechanical treatments at the Jenkins site.

Forest fuels from all 500 acres of the project would be burned; either as on-site pile burns or hauled to a biomass energy facility where they would be burned to produce energy. To be conservative, the GHG emission estimates here reflect on-site burning of all materials, which tends to produce more GHG emissions than biomass energy generation, even when typical hauling emissions are included (Springsteen et al. 2011). The Board of Forestry modeled emissions from typical burning scenarios in a Sierra Nevada Mixed Conifer forest, which considered emissions from combustion of vegetation, associated equipment, and worker trips. This analysis provided estimated emissions of approximately 20.22 MT CO<sub>2</sub>e per acre (Board of Forestry 2015, Appendix H). For the 500-acre project site, this would result in emissions of 10,108.92 MT CO<sub>2</sub>e.

The proposed project is intended to reduce the risk for wildfire, but it is still possible that wildfires would occur on the site after treatment. Wildfires that occur after treatment would likely be smaller and less intense than under existing conditions. The Board of Forestry EIR does not provide treated and untreated CO<sub>2</sub>e emission estimates from wildfires in Sierra Nevada forests, but these emission estimates are available from a U.S. Forest Service Region 5 modeling effort that evaluated a similar forest treatment project in the

northern Sierra, just north of Lake Tahoe (USFS 2015). This modeling effort used the Forest Vegetation Simulator (FVS) model to produce emission estimates from wildfires occurring on a northern Sierra forest before and after a similar fuel reduction treatment. While emissions would vary based on stand characteristics and treatment type, this modeling effort provides a reasonable approximation of wildfire emissions at the project site both before and after treatment. The FVS modeling found that an untreated northern Sierra mixed conifer stand would emit 79 MT CO<sub>2</sub>e per acre from a wildfire, and a treated stand would emit 17.6 MT CO<sub>2</sub>e per acre (USFS 2015). For the 500-acre project site, this would result in 39,500 MT CO<sub>2</sub>e from a wildfire under existing conditions. After project implementation, the site could be expected to produce approximately 8,800 MT CO<sub>2</sub>e from a smaller and reduced-intensity wildfire.

In total, project activities could be expected to produce approximately 10,109 MT CO<sub>2</sub>e. In addition, a wildfire occurring after treatment could produce about 8,800 MT CO<sub>2</sub>e, resulting in total emissions of 18,908.94 under the project scenario. In contrast, a wildfire occurring without implementation of the project could result in substantially greater emissions at approximately 39,500 MT CO<sub>2</sub>e. Because the project is expected to result in less GHG emissions than would likely occur without the project, the impact is less than significant.

**b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**Less than significant impact.** In December 2008, the California Air Resources Board (ARB) adopted its Climate Change Scoping Plan, which contains the main strategies California will use to reduce GHGs. The First Update to the Climate Change Scoping Plan was approved by the ARB Board on May 22, 2014. This update builds upon the initial Scoping Plan with new strategies and recommendations. It defines ARB's climate change priorities for the next 5 years, and also sets the groundwork to reach long-term goals. The Scoping Plan and First Update both recognize the role of California's Natural and Working Lands (previously the Forest Sector) in meeting California's GHG reduction goals. These lands include both forests and rangelands and can act as both source and sink. The First Update recognizes that some actions taken to address ecosystem health may result in temporary, short-term reductions in sequestration, but are necessary to maintain forest health and reduce losses due to wildfire. The goals set forward for these landscapes include reducing vegetative fuels.

California's overall plan for climate adaptation is expressed in Safeguarding California (California Natural Resources Agency [CNRA] 2014). The plan provides policy guidance for state decision-makers, and is part of continuing efforts to reduce impacts and prepare for climate risks. This plan, which updates the 2009 California Climate Adaptation Strategy (CNRA 2009), highlights climate risks in nine sectors in California, discusses progress to date, and makes realistic sector-specific recommendations. One of the key sectors is forestry, where the emphasis is on preparing for increased wildfire hazards, including treatment of hazardous fuels, and improving forest management approaches in a changing climate (CNRA 2014).

Plumas County and the NSAQMD currently do not have local plans, policies or regulations adopted to reduce GHG emissions. Since the project would reduce vegetative fuels, and implement forest management treatments consistent with the First Update of the Climate Change Scoping Plan and Safeguarding California, the impact would be less than significant.

### 3.8 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VIII. Hazards and Hazardous Materials. Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.8.1 Discussion

**a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**Less than significant impact.** Project implementation activities would involve the use of hazardous materials, such as lubricants, gasoline, and oil. The use and storage of these materials could potentially expose and adversely affect workers, the public, or the environment as a result of improper handling or use; accident; environmentally unsound disposal methods; or fire, explosion, or other emergencies, resulting in adverse health effects. All activities would be subject to compliance with Federal, State, and local hazardous

materials regulations, and would be monitored by the Plumas NF and State (e.g., California Department of Occupational Safety and Health Administration and California Department of Toxic Substances Control). Therefore, it is anticipated that the routine use of these materials handled in accordance with these laws and regulations would not create any impacts to the public or the environment. This impact would be less than significant.

**b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?**

**Less than significant impact.** As described above under a), project activities would involve the use of hazardous materials. However, it is anticipated that the routine use of these materials handled in accordance with laws and regulations would not create any reasonably foreseeable upset and/or accident conditions on the public or the environment. This impact would be less than significant.

**c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**No impact.** No schools are located within one quarter mile of the project area. There would be no impact.

**d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

**No impact.** There are no hazardous materials sites compiled pursuant to Government Code Section 65962.5 within the project area. There would be no impact.

**e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

**No impact.** There are no airports within 2 miles of the project area. Thus, there would be no impact.

**f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

**No impact.** There are no private airstrips within 2 miles of the project area. Thus, there would be no impact.

**g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**Less than significant impact.** Transport of mechanical equipment along roadways to the project area could occur along evacuation routes. However, the Plumas County Office of Emergency Services (OES) coordinates information, plans for resources, and supports priorities among County agencies, local governments, and special districts. OES serves as a link between the Federal Emergency Management Agency (FEMA), California Emergency Management Agency (CalEMA) and the County's cities, towns, villages and special districts. In the event of an emergency, OES would notify the public of a possible hazardous condition and provide broadcasts of ongoing information and actions the public should take to protect its health and safety. Transport of equipment along possible evacuation routes would be minimal and would comply with direction provided by OES. This impact would be less than significant.

**h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

**No impact.** Potential impacts related to exposure of people or structures to a substantial risk of loss, injury, or death involving wildland fire would be beneficial due to reductions of existing fuel accumulations in the

treatment areas (see Ingalls Project EA, page 46 – 52; Keddie Ridge EIS, pages 99-100; Freeman Project EIS, page 97-98). Thus, there would be no impact.

### 3.9 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IX. Hydrology and Water Quality. Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or offsite erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or offsite flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Result in inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.9.1 Discussion

#### a) Violate any water quality standards or waste discharge requirements?

**No impact.** The project consists of fuel management strategies and would not involve discharge into waterways. The project would qualify for Category 5 of the Central Valley Regional Water Quality Control Board's (CVRWQCB) Conditional Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvesting Activities (Timber Waiver). The project would comply with all conditions of the Timber Waiver. Thus, there would be no impact.

#### b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

**No impact.** The project consists of fuel management strategies and would not involve the use of groundwater or otherwise affect recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level discharging into waterways. Thus, there would be no impact.

#### c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or offsite erosion or siltation?

**Less than significant impact.** The project consists of fuel management strategies and may require some level of ground-disturbing activities and loss of ground cover, which could alter drainage patterns. However, the project would not include any grading or paving that would alter the course of a stream or river. The potential for erosions from project activities would be minimized through implementation of best management practices, SOPs, and design features. These include provisions such as an erosion control plan, road maintenance, restoration of temporary roads, and skid trail spacing (see Ingalls Project EA, pages 165 – 170; Keddie Ridge EIS, pages 202-204; Freeman Project EIS, pages 369-379; Appendix A; Appendix B; Appendix C, and impact 3.6.1.b, above). Thus, any alteration to drainage patterns would not be substantial. This impact would be less than significant.

#### d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or offsite flooding?

**Less than significant impact.** See discussion c), above.

#### e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

**Less than significant impact.** Implementation of the project would not substantially alter runoff volumes, but it could create soil disturbance that has the potential to result in polluted runoff water. However, water quality impacts, such as dissolved oxygen, water temperature, and turbidity would be minimized through implementation of best management practices, SOPs, and design features. These include provisions such as an erosion control plan, road maintenance, and skid trail spacing (see Ingalls Project EA, pages 165 – 170; Keddie Ridge EIS, pages 202-204; Freeman Project EIS, pages 369-379; Appendix A; Appendix B; Appendix C). Through implementation of the project requirements, this impact would be less than significant.

#### f) Otherwise substantially degrade water quality?

**Less than significant impact.** The project consists of fuel management strategies and may require some level of ground-disturbing activities and loss of ground cover, which could alter drainage patterns and contribute sediment into waterways. As described under impacts c and e, above, implementation of project

requirements would prevent the substantial degradation of water quality. This impact would be less than significant.

**g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

**No impact.** No housing is proposed as part of the project. Thus, there would be no impact.

**h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?**

**No impact.** The project consists of fuel management strategies and would not include placement of structure within 100-year flood hazard areas. Thus, there would be no impact.

**i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?**

**No impact.** The project consists of fuel management strategies and would not include structures or alterations to levees or dams. Thus, there would be no impact.

**j) Result in inundation by seiche, tsunami, or mudflow?**

**No impact.** The project would consist of fuels reduction treatments and would not affect the potential for seiche, tsunamic, or mudflow. Thus, there would be no impact.

### 3.10 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. Land Use and Planning. Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.10.1 Discussion

**a) Physically divide an established community?**

**No impact.** The project would not be located within an established community. Thus, there would be no impact.

- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

**No impact.** The project consists of fuels management practices and would not affect land uses in the project area. Thus, there would be no impact.

- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?**

**No impact.** There are no proposed or approved habitat conservation plans or natural community conservation plans in Plumas County. Thus, there would be no impact.

### 3.11 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. Mineral Resources. Would the project:</b>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.11.1 Discussion

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

**Less than significant impact.** Mining claims are located within Plumas County within the vicinity of the project. However, project activities would not result in the loss of availability of a known mineral resource (Keddie Ridge EIS, page 297). Thus, this impact would be less than significant.

- b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**

**Less than significant impact.** See discussion a), above.

### 3.12 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. Noise. Would the project result in:</b>				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.12.1 Discussion

**a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?**

**Less than significant impact.** Equipment associated with mechanical and manual treatments could generate varying levels of noise, depending upon the equipment being used. Treatment activities are carried out in stages, during which the character and magnitude of noise levels surrounding the treatment area changes as different equipment is used and the location of the noise-generating work moves throughout the treatment area. However, these activities would be located in rural areas, and sensitive receptors would not be affected. Noise would be short-term, during daytime hours, and would not be considered substantial or in exceeded of noise ordinances. This impact would be less than significant.

**b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

**Less than significant impact.** As describe under a), above, the project would require the use of some heavy equipment. This equipment could generate groundborne vibration or groundborne noise. However, activities would be located in rural areas for a short duration during daytime hours. Thus, they would not be considered excessive. This impact would be less than significant.

**c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**No impact.** The project consists of temporary forest treatments. It would result in no permanent changes in ambient noise levels. There would be no impact.

**d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less than significant.** See response a), above.

**e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

**No impact.** The project is not located within an airport land use plan, thus there would be no impact.

**f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?**

**No impact.** Airstrips are not located within the vicinity of the project area. The nearest airstrips are located approximately 10 miles from where treatments would occur. There would be no impact.

### 3.13 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIII. Population and Housing. Would the project:</b>				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.13.1 Discussion

**a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**No impact.** The project does not include construction of new homes, businesses, road extensions, or other infrastructure. There would be no impact.

**b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?**

**No impact.** The project consists of fuel reduction treatments and would not affect existing homes. There would be no impact.

**c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**No impact.** See discussion b), above.

**3.14 PUBLIC SERVICES**

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIV. Public Services. Would the project:</b>				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**3.14.1 Discussion**

**a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:**

**Fire protection?**

**No impact.** Implementation of the project would not include new residences or otherwise create a situation in which fire protection service ratios, response times, or other performance objectives could not be met. The project does not include provisions of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities. Thus, there would be no impact.

**Police protection?**

**No impact.** Implementation of the project would not include new residences or otherwise create a situation in which police protection service ratios, response times, or other performance objectives could not be met. The project does not include provisions of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities. Thus, there would be no impact.

**Schools?**

**No impact.** The proposed project does not include development of new residences and therefore would not result in a substantial effect on the permanent population in the area that would increase the demand for educational services. Implementation of the project would have no impact on schools.

**Parks?**

**No impact.** Implementation of the project would not include new residences or otherwise create a situation in which there would be an increased need for parks. Thus, there would be no impact.

**Other public facilities?**

**No impact.** As discussed above, implementation of the project would not include new residences or otherwise create a situation that would require provisions of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities. Thus, there would be no impact.

**3.15 RECREATION**

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XV. Recreation. Would the project:</b>				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**3.15.1 Discussion**

**a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

**Less than significant impact.** The proposed treatments would reduce hazardous fuels and create a more diverse and fire-resilient forest, which would have an overall beneficial effect on recreation opportunities by helping to maintain and preserve the landscape of existing recreation sites and areas. Reducing the risk of wildfire would help ensure that recreation opportunities for developed and dispersed recreation would be maintained at existing conditions (Keddie Ridge EIS, page 287; Freeman Project EIS, page 451-454). The project could displace dispersed recreation activities, such as trail use, that would have otherwise occurred within the project site. However, any displacement of recreational use would be temporary and would only occur during active forest management treatments. In addition, as shown in figures 2-2 through 2-4, the treatments sites are surrounded by National Forest Lands, which would provide adequate capacity for

dispersed recreational uses that are temporarily displaced during treatment activities. This impact would be less than significant.

**b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?**

**No impact.** No new recreational facilities would be constructed as a part of the project. There would be no impact.

**3.16 TRANSPORTATION/TRAFFIC**

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. Transportation/Traffic. Would the project:</b>				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.16.1 Discussion

- a) **Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

**Less than significant impact.** Implementation of project activities would be expected to occurring in short durations (less than two weeks) and limited to the time periods during which work is occurring. Project activities would occur in remote areas where background traffic levels are not substantial. Thus, project traffic would not be substantial enough to affect an applicable plan, ordinance or policy related to transportation system performance. This impact would be less than significant.

- b) **Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

**Less than significant impact.** See discussion a), above.

- c) **Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**No impact.** The project does not include construction of buildings or other structures that could affect air traffic patterns. There would be no impact.

- d) **Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**No impact.** The project would not alter existing roadway design features or result in the use of incompatible uses. There would be no impact.

- e) **Result in inadequate emergency access?**

**Less than significant impact.** During construction, presence of slow-moving construction equipment and vehicles on local roads could have a limited, temporary impact on access for emergency vehicles. However, equipment transportation would occur during a brief period of time and would not substantially affect access to roadways surrounding the project area. Thus, this impact would be less than significant.

- f) **Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

**No impact.** The project is located in rural portions of Plumas County where public transit, bicycle, and pedestrian facilities are not available. There would be no impact.

### 3.17 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVII. Utilities and Service Systems. Would the project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.17.1 Discussion

**a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

**No impact.** The project would not result in any changes to existing wastewater treatment facilities. There would be no impact.

**b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**No impact.** The project would not result in any changes to existing water or wastewater treatment facilities. There would be no impact.

**c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**No impact.** The project would not result in any changes to existing water or wastewater treatment facilities. There would be no impact.

**d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

**No impact.** No water supply is required to implement the project. There would be no impact.

**e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project’s projected demand, in addition to the provider’s existing commitments?**

**No impact.** No wastewater treatment capacity is required to implement the project. There would be no impact.

**f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?**

**No impact.** Vegetation removed as part of the project would either be burned or hauled to a biomass facility. No solid waste would be hauled to a landfill. There would be no impact.

**g) Comply with federal, state, and local statutes and regulations related to solid waste?**

**No impact.** See discussion f), above.

### 3.18 MANDATORY FINDINGS OF SIGNIFICANCE – INCLUDING CUMULATIVE IMPACTS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVIII. Mandatory Findings of Significance.</b>				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Authority: Public Resources Code Sections 21083, 21083.5.

Reference: Government Code Sections 65088.4.

Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

### 3.18.1 Discussion

- a) **Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?**

**Less than significant impact.** As described above in Section 3.4, Biological Resources, the proposed project would not substantially degrade the quality of the environment, substantially reduce the habitat or a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of an endangered, rare, or threatened species.

The project consists of vegetation management in areas of Plumas County, to reduce the intensity and longevity of fires. As described in section 3.5, Cultural Resources, the project would not affect important examples of major periods of California history or prehistory.

- b) **Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)**

**Less than significant impact.** Section 15130(a) of the State CEQA Guidelines requires a discussion of the cumulative impacts of a project when the project’s incremental effect is cumulatively considerable. Where a project’s incremental effect is not cumulatively considerable, the effect need not be considered significant, but the basis for concluding the incremental effect is not cumulatively considerable must be briefly described. Cumulatively considerable, as defined in State CEQA Guidelines Section 15065(a)(3), means that the “incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Probable existing and future projects considered in the cumulative analysis are in the project vicinity and have the possibility of interacting with the project to generate a cumulative impact. The Plumas NF evaluated the cumulative impacts of past and reasonably foreseeable projects in the Keddie Ridge EIS, Freeman EIS, and Ingalls EA. Projects considered in combination with the Jenkins site are outlined on pages 547 – 552 of the Freeman EIS, projects considered in combination with the Ingalls project are described on pages 221 – 224 of the Ingalls EA, and projects considered in combination with the Round Valley site are included as Appendix F of the Keddie Ridge EIS. These projects primarily consist of other similar forest health and fuels management projects that are anticipated to occur within or near the project area. The majority of these projects would be implemented by the Plumas NF, and would not occur concurrently with the proposed project. Thus the short-term effects of project implementation would not combine in a manner that would result in cumulatively significant impacts.

The proposed project is designed to protect and enhance existing natural resources. The project includes standard operating procedures to minimize potential cumulative environmental impacts (Appendices A, B, and C). As indicated throughout this IS/Proposed MND, implementation of the proposed project would not result in any individually significant impacts, and in many cases the project would have beneficial effects on natural resources. The effects of the proposed project would not combine with the effects of other past,

present, or future projects in a cumulatively considerable fashion. The cumulative impacts associated with the proposed project are less than significant.

**c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?**

**Less than significant impact.** The project consists of mechanical and manual fuels management treatments. Activities would be short-term and limited by project areas boundaries, which are located in rural areas. No substantial adverse effects on human beings would occur. The impact would be less than significant.

This page intentionally left blank.

## 4 REFERENCES

- Air Resources Board. 2014. Area Designations Maps/State and National. Available: <http://www.arb.ca.gov/desig/adm/adm.htm>. Accessed:
- Board of Forestry. See California Board of Forestry and Fire Protection.
- California Board of Forestry and Fire Protection. 2015. Draft Program Environmental Impact Report, Vegetation Treatment Program of the California State Board of Forestry and Fire Protection. Available: [http://bofdata.fire.ca.gov/board\\_committees/resource\\_protection\\_committee/current\\_projects/vegetation\\_treatment\\_program\\_environmental\\_impact\\_report\\_\(vtpeir\)/2015\\_pdfs](http://bofdata.fire.ca.gov/board_committees/resource_protection_committee/current_projects/vegetation_treatment_program_environmental_impact_report_(vtpeir)/2015_pdfs)
- California Native Plant Society. 2015. Inventory of rare, threatened, and endangered plants of California (accessed December 2015). Available at: <http://www.rareplants.cnps.org/>
- California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. Available: [http://resources.ca.gov/docs/climate/Statewide\\_Adaptation\\_Strategy.pdf](http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf)
- \_\_\_\_\_. 2014. Safeguarding California: Reducing Climate Risk. Available: [http://resources.ca.gov/docs/climate/Final\\_Safeguarding\\_CA\\_Plan\\_July\\_31\\_2014.pdf](http://resources.ca.gov/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf)
- CNDDDB. 2015. California Natural Diversity Database (accessed December 2015). Available at: <http://www.dfg.ca.gov/biogeodata/cndddb/>
- CNPS. See California Native Plant Society.
- CNRA. See California Natural Resources Agency.
- Farmland Mapping and Monitoring Program. 2012. 2012 Statewide Important Farmland Map. Available: [ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2012/fmmp2012\\_08\\_11.pdf](ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2012/fmmp2012_08_11.pdf). Accessed: December 2015.
- FMMP. See Farmland Mapping and Monitoring Program.
- Plumas County. 2008. Plumas County Williamson Act Lands 2008. Available: <http://www.countyofplumas.com/DocumentCenter/View/8529>. Accessed: December 2015.
- \_\_\_\_\_. 2011. Plumas County General Plan Designations. Available: <http://www.countyofplumas.com/DocumentCenter/View/8525>. Accessed: December 2015.
- \_\_\_\_\_. 2012. Plumas County 2035 General Plan Environmental Impact Report. Available: <http://www.countyofplumas.com/index.aspx?NID=2248>. Accessed: December 2015.
- Springsteen, B., T. Christofk, S. Eubanks, T. Mason, C. Clavin, and B. Storey. 2011. Emission reductions from woody biomass waste for energy as an alternate to open burning. Journal of Air and Waste Management Association. 61:63-68. Available: [http://www.spi-ind.com/document\\_library/SNC\\_Phase\\_I\\_report.pdf](http://www.spi-ind.com/document_library/SNC_Phase_I_report.pdf)
- U.S. Forest Service. 2006. Freeman Project Final Environmental Impact Statement.
- \_\_\_\_\_. 2011. Ingalls Project Environmental Assessment.

- 
- \_\_\_\_\_. 2011. Keddie Ridge Project Final Environmental Impact Statement.
- \_\_\_\_\_. 2015. Unpublished data. United States Forest Service, Region 5. Forest Vegetation Simulator modeling prepared by Nadia Tase, Acting Region 5 Co-Climate Change Coordinator, to evaluate the North Tahoe Interagency Forest Health and Bioenergy Project.
- \_\_\_\_\_. 1988. Plumas National Forest, Land and Resource Management Plan.
- \_\_\_\_\_. 2004. Sierra Nevada Forest Plan Amendment.

# **Appendix A**

---

**Freeman Project Design Criteria,  
Standard Operating Procedures, and  
Other Requirements**



# 1 FREEMAN PROJECT SPECIFIC DESIGN FEATURES/ RESOURCE SPECIFIC MITIGATIONS

The following section provides information about the specific design features for the Freeman Project and any resource specific mitigations. These are design features and mitigations that are specific to the Freeman Project, which are not in the Standard Operating Procedures or our Standards and Guidelines.

## 1.1 DESIGN FEATURES SPECIFIC TO THE PURPOSE AND NEED

### 1.1.1 General Design Features for All Action Alternatives

#### REDUCING HAZARDOUS FUELS AND IMPROVING FOREST HEALTH

##### Thinning

- ▲ Whole tree yarding will be used whenever possible in order to avoid the need for post-project slash pile fuels treatments.
- ▲ Mechanical felling would be restricted to slopes having a gradient of less than 35%. Exceptions may be made for short (less than 100') pitches within the interior of units where slope exceeds this limit.
- ▲ Clumps of the largest fire tolerant healthy trees should be retained within a network of intermingled openings, rather than employing uniform spacing between residual trees.
- ▲ Where conifers with the desirable eagle habitat characteristics (See Improving Bald Eagle Habitat, Section 2.1.1.1) are not present adjacent to meadows, dense pockets of conifers ¼ acre in size, spaced approximately every 200 yards around the perimeter of the meadow, would be retained.
- ▲ Emphasis will be placed on improving stand health by cutting diseased and insect infected trees or trees otherwise in poor health.

##### Post-Treatment

- ▲ Hand-thinning, grapple piling, mastication and/or underburning may follow treatment if needed to meet ladder and ground fuel-reduction objectives.

##### RHCATreatments

- ▲ Units adjacent to meadows should retain conifers possessing one or more of the following characteristics in order to provide nesting and roosting habitat for raptors:
  - large limbs extending into the meadow;
  - mistletoe brooms higher than 20' from the ground;
  - multiple tops;
  - bole sweep;
  - and snags.
- ▲ Within RHCAs in units proposed for underburning or hand-thinning, conifers up to 8" dbh would be removed. Slash would be piled and burned. Hand piles would be situated away from riparian vegetation to prevent scorching.
- ▲ No GS would be permitted in RHCAs.

## Equipment Exclusion Zones

- ▲ A 25'-wide equipment exclusion zone would protect SMZs.
- ▲ Low ground pressure equipment would be allowed to travel into the outer RHCA zone; harvest trees and bring them to skid trails. Skid trails would be spaced approximately every 80 - 120', generally perpendicular to streams and skidders would be allowed to enter the outer RHCA on these skid trails. To minimize soil displacement, no equipment would be permitted to turn around while off a skid trail in RHCAs.

## Canopy Cover Restrictions

- ▲ Canopy cover of ~ 40% would be retained in general and within the inner zones of the perennial, fish-bearing stream RHCAs, canopy would remain ~ 60%, where available (canopy cover in RHCAs will be less in aspen treatment units).

## Group Selection

- ▲ In the WUI, GS will be factored into the remaining canopy cover for the overall stand.
- ▲ When calculating canopy cover for the DFPZ, GS treatments are not factored into the overall canopy cover.
- ▲ Further canopy cover may be lost due to post-treatment underburning.
- ▲ GS areas will be evaluated after treatment; those units not meeting desired surface fuel and silvicultural site preparation conditions would be underburned, grapple piled and burned, or masticated.
- ▲ If not removed as part of a timber sale, non-saw log material (biomass) would be piled and burned or decked and sold as firewood.
- ▲ Emphasis will be placed on improving stand health by cutting diseased and insect infected trees or trees otherwise in poor health.
- ▲ Canopy cover calculations in Area Thinning treatments will factor in the canopy cover of the entire treatment area including GS treatments.
- ▲ Mechanical felling would be restricted to slopes having a gradient of less than 35%. Exceptions may be made for short (less than 100') pitches within the interior of units where slope exceeds this limit.

## Reforestation of Group Selection

- ▲ Group Selection will be replanted as necessary to insure adequate restocking. Healthy, advanced regeneration of appropriate species would be retained during harvest, where practical. Areas with mistletoe or root disease infestation would be planted with alternative non-susceptible native species. GS areas will be site specifically evaluated to receive underburning, grapple piling or mastication post-treatment.

### 1.1.2 Improve Bald Eagle Habitat

- ▲ The overall emphasis will be similar to that found in the Forest Health except that more mistletoe infected trees would remain.
- ▲ Units identified as eagle special prescription (Appendix B, Tables B.1-B.3) will receive special treatment. The prescription for these units will be to retain the largest pines, including those with mistletoe

infections, in order to maintain trees suitable for bald eagle nesting. Treatments will be designed to enhance habitat attributes while meeting other project objectives to the extent possible.

- ▲ GS treatments within the BEHMA would continue to focus on diseased and insect- infested pockets of trees (as discussed in Purpose 2), to reduce tree mortality and improve stand health.
- ▲ In areas where GS treatments are conducted, tree planting will focus on disease resistant strains of native tree species, for future nesting and roosting trees.

### 1.1.3 Improve Aspen Stands

- ▲ Unlike the majority of the treatments, thinning in aspen stands would not be a thinning from below. The objectives for aspen stand thinning are to remove conifer to reduce competition for water and light.
- ▲ Aspen release would involve whole-tree removal of all conifers up to 29.9" dbh (except in the case of sugar pine, which would be left to maintain the species genetic diversity) through a combination of hand and mechanical treatments.
- ▲ No canopy cover or spacing guidelines would restrict removal of conifer.
- ▲ Trees providing bank stability in stream corridors would be retained.
- ▲ The width of the zones would be dependent on aspen stand condition, visual integrity as viewed from Road 24N10, wildlife habitat considerations and the ability of the aspen to expand into adjacent soils.
  - A no-equipment buffer zone (25' wide) would be established along each side of stream channels to ensure no disturbance to streambanks. These areas would be hand piled up to 8" upper diameter limit. Equipment may be positioned outside of the buffer to harvest/gather material via an extendable boom.
  - Crossing stream channels with mechanical equipment would be allowed only under special circumstances and with permission from the sale administrator and hydrologist. If a crossing is deemed necessary for effective harvest and aspen release, the contractor would be required to return the channel banks to their natural contour. This may require the use of an excavator or backhoe to slope the channel banks.
  - Unless deemed necessary by resource specialists following post-harvest review, aspen units would not be underburned or subsoiled.
  - Landings would be located outside of the aspen stand perimeters and RHCAs, to minimize disturbance to the aspen communities as well as the RHCAs.

### GOSHAWK PAC

- ▲ Aspen treatments within goshawk PACs will be very limited in extent and focus on enhancing the ecological diversity of the PACs and improving the quality of habitat for goshawk by maintaining or restoring native plant communities in the riparian zone.
- ▲ Aspen would be released from conifer competition by a combination of hand and mechanical treatment, involving whole-tree removal of conifers up to 17.9" dbh.
- ▲ All snags would be retained, with exceptions made for safety and operability.

## 1.1.4 Provide Access Needed to Meet Other Project Objectives and Reduce Transportation System Impacts

In the summer of 2006, 23N10Y will be chip sealed to enhance recreation use of the Camp 5 boat launch facilities. The anticipated chip seal will require road use restrictions in winter, that would preclude the ability to plow that road in winter. The chip seal is not designed to be plowed and will break up the surface of the road.

## 1.2 RESOURCE SPECIFIC MITIGATIONS

### 1.2.1 Air Quality

Specific air quality mitigations for prescribed burning would include number of acres burned daily, preferred wind directions for smoke dispersal and desired weather conditions. These mitigations will be agreed upon with the Northern Sierra Air Quality Management District (NSAQMD) and addressed in the Smoke Management portion of those burn plans developed for the Freeman Project.

### 1.2.2 Botany

The Freeman Project could potentially impact sensitive and special interest plant species, as well as unique and unusual botanical habitats. Implementation of the following mitigations greatly reduces the impact to botanical resources (Table A-1 and Table A-2-). Occurrences protected by flagging and avoiding as a control area will be flagged prior to implementation. The success of this plan is dependent upon the sale administrator knowing the location of control areas and communicating that knowledge to contractors.

### 1.2.3 Range

#### PROTECTING ASPEN REGENERATION FROM GRAZING

It is assumed livestock use on aspen is currently within the 20% incidence of use allowed in the Sierra Nevada Forest Plan Amendment. The theory in treating a large area is that livestock use on aspen will be diffused further among the aspen seedlings. The monitoring plan will monitor deer use before livestock are turned into the pasture and after cows are removed from the pasture. If livestock use is shown to increase above the 20% standard then timing, season, frequency or intensity of livestock use may be adjusted through adaptive management (FSH 2209.13.92.23b).

**Table A-1 Botany Protections by Unit for the Freeman Project Action Alternatives**

Unit Number	Prescription	Species	Occurrence Number	Mitigation
53	Mechanical thin	<i>Astragalus lentiformis</i>	ASLE 11-054	Control Area
72	Mechanical thin	<i>Astragalus lentiformis</i>	ASLE 11-036B	Control Area
72	Mechanical thin	<i>Astragalus lentiformis</i>	ASLE 11-036C	Control Area
72	Mechanical thin	<i>Astragalus lentiformis</i>	ASLE 11-036D	Control Area
None	none	<i>Meesia uliginosa</i>	MEUL 11-001	Control Area
113	Mechanical thin	<i>Botrychium minganense</i>	BOMI 11-002	Control Area
114	Grapple pile	<i>Botrychium minganense</i>	BOMI 11-002A	Control Area

**Table A-1 Botany Protections by Unit for the Freeman Project Action Alternatives**

Unit Number	Prescription	Species	Occurrence Number	Mitigation
114	Grapple pile	<i>Botrychium minganense</i>	BOMI 11-002B	Control Area
94	Mechanical thin	<i>Botrychium minganense</i>	BOMI 11-003	Control Area
94	Mechanical thin	<i>Botrychium minganense</i>	BOMI 11-003A	Control Area
93	Helicopter ITS	<i>Botrychium minganense</i>	BOMI 11-003B	Control Area
006	Grapple Pile	<i>Botrychium minganense</i>	BOMI 11-004	Control Area
25	Mechanical thin	<i>Ivesia sericoleuca</i>	IVSE 11-010B	Control Area
25	Mechanical thin	<i>Ivesia sericoleuca</i>	IVSE 11-0100	Control Area
83	Mechanical thin	<i>Ivesia sericoleuca</i>	IVSE 11-010P	Control Area

**Table A-2 Special Habitats Protections for the Freeman Project Action Alternatives**

Unit Number	Prescription	Habitat	Occurrence Number	Mitigation
06	Grapple Pile	Spring	SPECHAB90MR2	Control Area
46	Mechanical thin	Spring	SPECHAB90MR2	Control Area
20	Mechanical thin	Seep	SPECHAB35GJ1	Control Area
94	Mechanical thin	Spring	SPECHAB39CS1	Control Area
94	Mechanical thin	Spring	SPECHAB39GJ3	Control Area
93	Helicopter ITS	Spring	SPECHAB39GJ1	Control Area
81	Mechanical thin/ Aspen	Spring	SPECHAB49JM1	Control Area
31	Masticate	Seep	SPECHAB61MR1	Control Area
31	Masticate	Spring	SPECHAB71GJ1	Control Area
04	Mechanical thin	Spring	SPECHAB73GJ1	Control Area
20	Mechanical thin	Seep	SPECHAB35MR1	Control Area

**Table A-3 Freeman Project Noxious Weed Occurrences within 1 Mile of the Project Boundary**

Occurrence	Species	Location	Treatment
CEMA4_003	spotted knapweed	forest road 175	flag and avoid
CEMA4_010	spotted knapweed	County road 126	flag and avoid
CIAR4_051_001	Canada thistle	west shore of Lake Davis	None
CIAR4_051_002	Canada thistle	west shore of Lake Davis	None
CIAR4_051_003	Canada thistle	west shore of Lake Davis	None
CIAR4_052	Canada thistle	west shore of Lake Davis	None
CIAR4_054_001	Canada thistle	Unit 62	flag and avoid
CIAR4_054_002	Canada thistle	west shore of Lake Davis	None
COAR4_001	field bindweed	forest road 24N10	None
COAR4_002	field bindweed	forest road 24N10	None
LELA2_004	tall whitetop	forest road 175	flag and avoid

**Table A-3 Freeman Project Noxious Weed Occurrences within 1 Mile of the Project Boundary**

Occurrence	Species	Location	Treatment
LELA2_005	tall whitetop	forest road 175	flag and avoid
LELA2_014_001	tall whitetop	forest road 175	flag and avoid

## 1.2.4 Noxious Weeds

A list of noxious weed occurrences, species, locations and associated treatments may be found in Table 2.9 in the Freeman Project EIS.

## 1.2.5 Heritage Resources

Detailed heritage resource information about the location, character, or ownership of a historic resource is withheld from disclosure because sharing this information may cause an invasion of privacy, may risk harm to the historic resources or may impede the use of a traditional religious site by practitioners [Section 304 of National Historic Preservation Act, 16 U.S.C. 470w-3(b)]. Therefore specific mitigations for heritage resources are not publicly documented.

## 1.2.6 Recreation

The following concerns: noise, smoke, traffic, increasing off road travel and road degradation can be minimized.

One of the direct effects of burning will be reducing air quality within the Recreation Area. To minimize the effects of this burning it would be best if it did not occur on weekends or after Memorial Day. In the fall the burning will be late enough to not have as much impact.

Noise will likely have an impact within the Recreation Area. Limiting early morning starts and weekend logging would reduce the number of people impacted.

Traffic associated with this project will impact the Recreation Area. Signage is important to warn the public about the trucks. Limiting road closures will reduce the impacts to the public. Only close roads when absolutely necessary and reopen all roads for weekend use. Signing about road closures at the beginning of the 24N10 road would help the public make decisions on where to go.

The density of the trees along the fishing access roads prevents the public from driving off road. Opening these stands up along the road could increase off road travel. Leaving a buffer of trees along the roads could prevent this illegal activity.

The 24N10 road is scheduled for chip sealing sometime within the next five years. Requiring a surface replacement clause in the loggings contract will ensure that this road will be repaired if damaged. Not logging in wet conditions will protect this road from the logging equipment damage. All other fishing access roads should be fixed if they are damaged by logging.

Winter-logging should be implemented to minimize conflicts with winter recreation activities around Lake Davis.

The busiest times for camping are June and July so having the logging activity occur in August and through the fall will benefit recreation users.

## 1.2.7 Soil

Additional subsoiling will be required in units 1, 9, 48, 74, 57 and 78. The first four units are more compacted than the R5 soil standard in their existing condition. The action alternatives would make the last two rise above of standard. The units will be subsoiled and receive implementation monitoring post treatment (See Monitoring, Appendix F).

## 1.2.8 Visual Quality

Areas just beyond the visual retention zone are classified as visual partial retention where activities must remain visually subordinate to the characteristic landscape.

The types of treatments proposed in all of the alternatives are not likely to affect visual quality, provided landing and skid trail layout is designed to move material away from the visually sensitive road, stumps are cut low and burn piles are situated outside the immediate view.

## 1.2.9 Wildlife

All of the action alternatives would be implemented in compliance with all rules and regulations governing land management activities, including the use of the appropriate Limited Operating Periods (LOP) identified in Table A-4.

**Table A-4 Wildlife Limited Operating Periods (LOPs) for the Freeman Project**

Species	Location	Limited Operating Period
Bald Eagle	Within designated territories (1/2 mile around nest)	November 1 through August 31
Bald Eagle	Winter roosts	November 1 through March 1
California Spotted Owl	Within 1/4 mile of a protected activity center boundary	March 1 through August 31
Great Gray Owl	Within 1/2 mile of nesting sites	March 1 through August 31
Goshawk	Within 1/4 mile of territory or active nest site	February 15 thru September 15
Willow Flycatcher	Within occupied willow flycatcher sites	Breeding Period (June 1 through August 15)

\*Herger-Feinstein Quincy Library Group Forest Recovery Act—Final Environmental Impact Statement (USFS 1999), Page 2-8, Table 2.3.

\*\*Sierra Nevada Forest Plan Amendment—Final Supplemental Environmental Impact Statement (SNFPA FSEIS)—Record of Decision (ROD) (2004), page A-54, A-58, A-60, A-61 and A-62.

**Table A-5 Standards and Guidelines Applicable to All Activities - Freeman Project**

HFQLG Land Allocation	Standards and Guidelines
Offbase and deferred areas	The following HFQLG resource management activities are prohibited: DFPZ construction, group selection, individual tree selection, all road building, all timber harvesting activities and any riparian management that involves road construction or timber harvesting.
Late successional old growth (LSOG) rank 4 and 5	Group selection and individual tree selection are not allowed in LSOG 4 and 5 stands. DFPZ construction is allowed in LSOG 4 and 5 stands. Design DFPZs to avoid old forest stands (CWHR classes 5M, 5D, 6) within this allocation.
California spotted owl PACs	The following resource management activities - DFPZs, group selection, individual tree selection and riparian restoration projects and other timber harvesting - are not allowed within spotted owl PACs.
California spotted owl habitat areas (SOHAs)	The following resource management activities - DFPZs, group selection, individual tree selection and riparian restoration projects and other timber harvesting - are not allowed within spotted owl SOHAs.
National forest lands outside of the above allocations and available for vegetation and fuels management activities specified in the HFQLG Act	<b>DFPZs</b>
	<ul style="list-style-type: none"> <li>▲ Eastside pine types and all other CWHR 4M and 4D classes:</li> <li>▲ Design projects to retain at least 30% of existing basal area, generally comprised of the largest trees.</li> <li>▲ Design projects to retain all live trees &gt;30 inches dbh; exceptions allowed for operability. Minimize impacts to</li> <li>▲ &gt;30-inch trees as much as practicable.</li> <li>▲ For CWHR 4M and 4D classes that are not eastside pine types, retain, where available, 5% of total post-treatment canopy cover in lower layers comprised of trees 6 - 24 inches dbh.</li> <li>▲ No other canopy cover requirements apply.</li> <li>▲ CWHR 5M, 5D and 6 classes except those referenced</li> <li>▲ above:</li> <li>▲ Design projects to retain a minimum of 40% canopy cover.</li> <li>▲ Design projects to avoid reducing pre-treatment canopy</li> <li>▲ cover by more than 30%.</li> <li>▲ Design projects to retain at least 40% of existing basal area, generally comprised of the largest trees.</li> <li>▲ Design projects to retain, where available, 5% of total post-treatment canopy cover in lower layers comprised of trees 6-24 inches dbh.</li> <li>▲ Design projects to retain all live trees &gt;30 inches dbh; exceptions allowed for operability. Minimize impacts to</li> <li>▲ &gt;30-inch trees as much as practicable.</li> <li>▲ All other CWHR class stands:</li> <li>▲ Retain all live trees &gt;30 inches dbh, except to allow for operations. Minimize operations impacts to &gt;30-inch trees as much as practicable.</li> </ul>
	<b>Group Selection</b>
	<ul style="list-style-type: none"> <li>▲ Design projects to retain all live trees &gt;30" dbh, except</li> <li>▲ allowed for operability. Minimize impacts to &gt;30-inch trees as much as practicable.</li> </ul>
	<b>Area Thinning (Individual Tree Selection)</b>
<ul style="list-style-type: none"> <li>▲ All eastside pine types:</li> <li>▲ Design projects to retain at least 30% of existing basal area, generally comprised of the largest trees.</li> </ul>	

**Table A-5 Standards and Guidelines Applicable to All Activities - Freeman Project**

HFQLG Land Allocation	Standards and Guidelines
	<ul style="list-style-type: none"> <li>▲ Design projects to retain all live trees &gt;30 inches dbh;</li> <li>▲ exceptions allowed for operability. Minimize impacts to</li> <li>▲ &gt;30-inch trees as much as practicable.</li> <li>▲ Canopy cover change is not restricted.</li> <li>▲ CWHR classes 4D, 4M, 5D, 5M and 6 (except eastside</li> <li>▲ pine type):</li> <li>▲ Where vegetative conditions permit, design projects to retain &gt;50% canopy cover after treatment averaged within the treatment unit, except where site-specific project objectives cannot be met. Where 50 percent canopy cover retention cannot be met as described above, design projects to retain a minimum of 40% canopy cover averaged within the treatment unit.</li> <li>▲ Design projects to avoid reducing canopy cover by more than 30% from pre-treatment levels.</li> <li>▲ Design projects to retain at least 40% of the existing basal area, generally comprised of the largest trees.</li> <li>▲ Design projects to retain, where available, 5% of total</li> <li>▲ post-treatment canopy cover in lower layers comprised of trees 6-24 inches dbh.</li> <li>▲ Design projects to retain all live trees &gt;30 inches dbh;</li> <li>▲ exceptions allowed for operability. Minimize impacts to</li> <li>▲ &gt;30-inch trees as much as practicable.</li> </ul>
	<b>Down wood and Snags</b>
	<ul style="list-style-type: none"> <li>▲ Determine retention levels of down woody material on an individual project basis. Within westside vegetation types, generally retain an average over the treatment unit of 10- 15 tons of large down wood per acre. Within eastside vegetation types, generally retain an average of three large down logs per acre. Emphasize retention of wood that is in the earliest stages of decay. Consider the effects of follow-up prescribed fire in achieving desired retention levels of down wood.</li> <li>▲ Determine snag retention levels on an individual project</li> <li>▲ basis. Design projects to sustain across a landscape a generally continuous supply of snags and live decadent trees suitable for cavity nesting wildlife. Retain some mid and large diameter live trees that are currently in decline, have substantial wood defect, or have desirable characteristics (teakettle branches, large diameter broken top, large cavities in the bole) to serve as future replacement snags and to provide nesting structure. When determining snag retention levels, consider land allocation, desired condition, landscape position and site conditions (such as riparian areas and ridge tops), avoiding uniform distribution across large areas</li> <li>▲ During project-level planning, consider the following</li> <li>▲ guidelines for large-snag retention: <ul style="list-style-type: none"> <li>▲ In westside mixed conifer and ponderosa pine types, four of the largest snags per acre. In the red fir forest type, six of the largest snags per acre.</li> <li>▲ In eastside pine and eastside mixed conifer forest types, three of the largest snags per acre.</li> <li>▲ In westside hardwood ecosystems, four of the largest</li> <li>▲ snags per acre (hardwood or conifer).</li> </ul> </li> <li>▲ Where standing live hardwood trees lack dead branches, six of the largest snags per acre to supplement wildlife needs for dead material. Use snags larger than 15 inches dbh to meet this guideline. Snags should be clumped and distributed irregularly across the treatment units. Consider leaving fewer snags strategically located in treatment areas within the WUI and DFPZs. While some snags will be lost due to hazard removal or use of</li> </ul>

**Table A-5 Standards and Guidelines Applicable to All Activities - Freeman Project**

HFQLG Land Allocation	Standards and Guidelines
	prescribed fire, consider these potential losses during project planning to achieve desired snag retention levels.
	<b>Spotted owl surveys</b>
	<ul style="list-style-type: none"> <li>▲ Prior to undertaking vegetation treatments in spotted owl</li> <li>▲ habitat having unknown occupancy, conduct surveys in compliance with the Pacific Southwest Region survey direction and protocols and designate PACs where appropriate according to survey results.</li> </ul>

## 2 FREEMAN PROJECT STANDARD OPERATING PROCEDURES

### 2.1 FIRE/AIR QUALITY

For all prescribed burning, comply with air quality permits issued by the Northern Sierra Air Quality Management District. A prescribed burn plan, including a mandatory smoke management plan (SMP), would be required prior to any prescribed fire. The SMP is reviewed and approved by the local air quality management District office.

Conduct prescribed burning in a manner that avoids excessive buildup of smoke in any particular airshed.

Other than in visual corridors, no more than 10% mortality following the underburn and no areas of mortality greater than 2 acre.

### 2.2 WATERSHED

Protect water quality through the use of BMPs, which are employed by the Forest Service and the State of California to prevent water quality degradation and to meet state water quality objectives relating to non-point sources of pollution. In addition, use site-specific mitigation measures that relate directly to these BMPs to minimize erosion and resultant sedimentation.

Apply the Standards and Guidelines identified in the SAT Guidelines (as adopted under the HFQLG EIS) relating to timber sale activities in all RHCAs. Activities in RHCAs will improve or maintain the structure and function of the RHCA and fish and wildlife habitat.

### 2.3 STREAMSIDEAREAS

For intermittent and ephemeral streams showing scour and deposition and wetlands less than one acre in size, use RHCA widths of a minimum of 100 feet in width (horizontal distance) or the height of one site potential tree, whichever is greater. For perennial fish-bearing streams, use RHCA widths of 300 feet horizontal distance as measured from both sides of the stream channel, or to the top of the inner gorge, or the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, whichever is greatest. Extend RHCAs around wetlands greater than one acre and perennial non fish-bearing streams to the outer edges of the riparian vegetation, or to the extent

of seasonally saturated soil, or to the extent of moderately and highly unstable areas, or a 150' horizontal distance, whichever is greatest.

Employ streamside management zone (SMZ) widths are 50' for those stream segments that do not display scour and deposition and are not classified as RHCAs.

Exclude equipment from RHCA, except at equipment crossings and within hardwood treatment areas (See Hardwoods), unless specifically allowed for in the environmental document. Minimize the number of crossings. Crossings will be back-bladed after use, as necessary, to restore the natural relief and reduce erosion.

Remove any slash generated by project activities from stream courses as soon as practicable, not exceeding 48 hours. Do not locate landings within RHCAs. Mulch and then subsoil landings and other disturbances within 200 feet of stream channels.

Remove no trees adjacent to channels that provide bank stability and/or contribute to channel integrity (except for hazard trees).

Drainages disrupted by existing and activity related landings, skid trails and temporary roads would be restored to their natural contour. This would occur during subsoiling operations.

Do not locate skid trails parallel to the bottom of swales. Treat swales as stream courses, crossing at right angles and skidding away from these features.

While underburning, do not ignite fire within 50' of stream channels or riparian vegetation, whichever is greatest. Allow backing fire to creep into RHCAs if fuels naturally carry this fire. Retain at least 90% of large woody debris in channels and leave 50-75% of the ground unburned within the interior 50' of RHCAs. Within these core areas, ensure that burned areas appear intermittent, not concentrated. Maintain a minimum of 75% ground cover over RHCA's and SMZs. Locate burn piles from or above the "green line" or at least 25' away from channels having evident scour and deposition, whichever is greater. Burn piles prior to under burning.

Retain 5 tons/acre of fuels less than 15" in diameter and 10-15 tons/acre of the largest down logs greater than 15" in diameter, where available.

## **2.4 ASPEN**

### **2.4.1 Aspen Stands with defined Stream Channels**

No equipment within 25 feet of any stream course. Machinery can work adjacent and reach into the exclusion zone with the extendable boom. Skid trails will be perpendicular to the stream course within 50 feet of the stream and spacing of skids will be no closer than 120 feet. No trees will be removed that are providing stability to the streambank.

Along perennial fish-bearing streams where Aspen are not of sufficient size to provide shade to the stream channel conifers will be left to provide shade.

### **2.4.2 Aspen Stands with no definable stream channel**

Aspen stands within wet areas where no definable stream channels are present will be harvested in dry periods when the upper eight inches of the soil is essentially dry or the ground is frozen to a depth of five

inches or snow depth is at least 18 inches or is compacted by equipment to eight inches. For this measure soil is defined as “dry” when no portion can be molded by hand compression and hold that shape when the hand is tapped.

## 2.5 SOIL PROTECTION MEASURES

To control the surface erosion, the LRMP requires a minimum of 40% ground cover on soils with a low erosion hazard rating. The minimum ground cover increases to 50%, 60% and 70% for soils with an erosion hazard rating of moderate, high and very high, respectively. If ground cover standards are not met, implementation of mitigation methods such as leaving chips on site would ensure standards would still be met.

Conduct ground based harvest operations only when the upper 8” of the soil is essentially dry, or the ground is frozen to a depth of 5”, or snow depth is at least 18” or is compacted by equipment to 8”. For this measure, soil is defined as “dry” when no portion of the top 8” can be molded by hand compression and hold that shape when the hand is tapped. Allow cut-to-length harvesters and forwarders to operate on moist soil, when the depth of the organic mat is greater than 18”.

Restrict skidding equipment to designated skid trails, unless, through consultation with the District’s physical scientist, it is determined that departure from skid trails would not likely impair the soil. Generally use a range of skid trail spacing, 80-120’ center to center, when trails are parallel and generally perpendicular to the stream. Reusing existing skid trails, with spacing closer than prescribed, is acceptable.

Areas with compacted soil will be subsoiled using a subsoiling/slash placement implement mounted on an excavator and displaced soil will be leveled and slash scattered.

Where specified by the District’s physical scientist, subsoil skid trails, landings and non- system roads within the project area through the full depth of compaction to restore soil porosity. Post-harvest compaction monitoring would be completed and subsoiling of both project skid trails and landings, as well as legacy trails and landings, would be subsoiled to achieve FS Region 5 soil compaction standards. In addition, all temporary roads and those non-system roads to be decommissioned would be subsoiled. Selected landings and terminating skid trails would be subsoiled with a winged subsoiler or other equipment capable of lifting and fracturing compacted soil without mixing the soil horizons to a depth of at least 24”. Constructed skid trails would be subsoiled to a minimum depth of 24”, water-barred and blocked. All primary skid trails, experiencing three or more passes with equipment, would be subsoiled with a winged subsoiler to a minimum depth of 20”. Post-harvest compaction monitoring would be completed, both project skid trails and landings, as well as legacy trails and landings, would be subsoiled to achieve FS Region 5 soil compaction standards. The subsoiler would be lifted where substantial root and bole damage to larger trees would occur from subsoiling. Skids with slope over 25% may not be subsoiled, but would be frequently waterbarred. Areas within 50’ of ephemeral draws, swales, connected drainages and meadow edges would not be subsoiled. Subsoiling would not occur on shallow soils where the displacement of rocks disrupts soil horizons or where there are concerns about the spread of root disease, or damage to tree roots.

Block vehicle access to temporary roads and install water-bars prior to subsoiling them.

Allow low ground pressure (under 8.0 psi) equipment to travel off of designated skid trails to bring logs to trails. Allow low ground pressure (under 8.0 psi) excavators to work on slopes up to 45% to pile excess fuels.

## **2.6 SILVICULTURE**

Pine stumps > 14" will be treated with a borate compound for the control of Annosus root disease. Generally, retain sugar pine and hardwoods in thinned units, with exceptions allowed for safety and operability. Protect trees identified or trees being tested as genetically superior or resistant to blister rust or dwarf mistletoe.

### **2.6.1 Landings**

Landings will generally not be within 100 feet of the stream course. If a landing is situated closer than 100 feet it will be tilled, seeded, mulched after use and available slash will be spread out across landing to improve infiltration and minimize erosion. Reference: BMP 1-12. No landing will be situated closer than 60 feet from the stream course.

## **2.7 NOXIOUS WEED MANAGEMENT**

Flame and/or handpull known noxious weed populations as necessary. Flag and avoid noxious weed populations during implementation.

Require off-road equipment and vehicles used for project implementation coming from weed-infested areas or areas of unknown weed status to be cleaned of all attached mud, dirt, or plant parts. Generally, this would be done at a vehicle wash station or steam cleaning facility before the equipment and vehicles enter the project area. Include applicable contract provision in all contracts for equipment cleaning.

Assure that all gravel, fill, or other imported materials are weed-free. Use on-site sand, gravel, rock, or organic matter rather than importing material where possible. Evaluate road locations for weed risk factors.

For all project-related revegetation, use weed-free equipment, mulches and seed sources. Avoid seeding in areas where revegetation would occur naturally unless noxious weeds are a concern. Save topsoil from disturbed sites and replace it onsite unless contaminated with noxious weeds.

## **2.8 BOTANY**

Protect known sensitive and special interest species according to PNF's current interim management prescriptions for specific species.

If additional TES Plant species are found during the life of the project, conduct an assessment and apply appropriate management prescriptions.

## **2.9 WILDLIFE**

Unless determined to be unnecessary following pre-implementation surveys, limited operating periods (LOPs) to protect key wildlife species listed in the HFQLG FEIS (page 2-8, table 2.3), 2004 SNFPA ROD (pages 54-62) and the Biological Evaluation/Biological Assessment would apply.

Where subsequent surveys identify occupied threatened, endangered, or sensitive species habitat, establish PACs, den site buffers, or other protections as described in the SNFPA and HFQLG EISs. Include protections for any additional sensitive species identified in the BE/BA.

In areas of known populations of TES amphibians, apply direction from the HFQLG FEIS/ROD and the SNFPA ROD. Apply additional protection measures as follows: do not burn slash piles within RHCA's during the LOP and when burned, assure that 1) no fuel is dumped on the pile and fuses or a single propane torch is used to light the pile and 2) light piles from a single location rather than multiple locations, allowing sheltering amphibians to escape.

## 2.10 HERITAGE RESOURCES

The proposed project has the potential to affect heritage resources. As outlined in the Programmatic Agreement (PA), the following protection measures will be implemented, as appropriate, for all heritage resources located within the project area. The application of the following protection measures would result in the Freeman Project having "no effect" on heritage resources and the Forest would have taken into account the effect of the project on heritage resource sites in compliance with the PA and Section 106 of the NHPA.

If any unrecorded heritage resources (artifacts, features, or sites) are encountered as a result of project operations, all activities in the vicinity of such finds will immediately cease pending an examination by the District Archaeologist.

- ▲ At a minimum, heritage resource sites shall be excluded from areas where activities associated with the project will occur.
  1. All proposed activities, facilities, improvements and disturbances shall avoid heritage resource sites. Avoidance means that no activities associated with the project that may affect heritage resource sites shall occur within a site's boundaries, including any defined buffer zones. Portions of the project may need to be modified, redesigned, or eliminated to properly avoid heritage resource sites.
  2. All heritage resource sites within the area of potential effect shall be clearly delineated prior to implementing any associated activities that have the potential to affect heritage resource sites.
  3. Buffer zones may be established to ensure added protection where the Forest or District Archaeologist determines that they are necessary. The use of buffer zones in conjunction with other avoidance measures are particularly applicable where setting contributes to the property's eligibility under 36 CFR 60.4, or where it may be an important attribute of some types of heritage resource sites (e.g., historic buildings or structures; historic or cultural properties important to Native Americans). The size of buffer zones needs to be determined by the Forest or District Archaeologist on a case-by-case basis.
  4. When any changes in proposed activities are necessary to avoid heritage resource sites, e.g., project modifications, these changes shall be completed prior to initiating any activities.
  5. Monitoring during project implementation, in conjunction with other measures, may be used to enhance the effectiveness of protection measures.
  6. Upon approval of the Forest or District Archaeologist, low intensity underburning may be allowed over selected prehistoric sites as long as fuel loads are relatively light.
  7. Upon approval of the Forest or District Archaeologist, existing breaches within linear sites may be designated on the ground and reused for project activities.
  8. On a case by case basis linear sites may be breached to access treatment units with the approval of the Forest or District Archaeologist. These breaches must be kept to a minimum. Also the linear

feature (road, ditch, or railroad grade) needs to be recontoured to look like it did before the breach was created.

9. Roads and trails that currently overlie historic linear sites may continue to be used as transportation routes without notification. However, if there are activities that will change the morphology of the existing road or trail (that is overlaying a historic linear site), these activities need to be reviewed by the Forest or District Archaeologist.
10. Roads proposed to be decommissioned that extend through archaeological sites will need to be blocked instead of sub-soiled.

## **2.11 VISUAL QUALITY MANAGEMENT (IMMEDIATE FOREGROUND OF VISUAL CORRIDORS)**

To the extent feasible, locate landings and primary skidtrails away from the immediate foreground of Sensitivity Level I and II travel corridors. Limit size of landings so that they are not visually evident from the sensitive travel routes following completion of treatment activities.

Minimize stump heights in both mechanical and handthinning units adjacent to sensitive travel corridors, typically resulting in stumps 6" or less in height within 300' of the travel corridor.

During tree marking, open and enhance views of residual old growth trees near the visual corridor where possible.

Target consumption of burn piles of 95% or greater. Target underburn mortality levels of 5% or less.

## **2.12 TRANSPORTATION**

Design all stream crossings to accommodate a 100-year flood and provide fish passage as necessary. Decommission temporary roads after use. Design and obliterate temporary stream crossings to protect water quality and adjacent riparian vegetation (see "Streamside Areas" section for additional procedures for protecting riparian vegetation).

Stabilize and strategically place water bars on temporary roads where drainage control issues are evident or expected. After use, barricade roads to discourage vehicle traffic, using available natural materials such as rocks, logs, root wads and earth, to appear somewhat natural, have low installation costs and require little to no maintenance.

Maximum draw-down volumes will be estimated prior to use of the draft site. Minimum pool levels will be maintained during drafting using measurements such as staff gauges, stadia rods, tape measures, etc.

Abate dust from logging traffic with water from water drafting sites that are selected based on stream flow and suitability of access. Construct water-drafting sites so that oil, diesel fuel, or other spilled pollutants would not enter the stream. Back down ramps will be constructed and or maintained to ensure the stream bank stability is maintained and sedimentation is minimized.

Rocking, chipping, mulching, or other effective methods are acceptable in achieving this objective.

When water is scarce, alternative sources such as chlorite, sulfonate or other dust abatement materials would be used.

## **2.13 IMPLEMENTATION**

Within the project contract area, allow minor adjustments in boundaries of units if compatible with Forest Plan direction, the desired conditions and anticipated environmental effects disclosed by the project's NEPA document.

## **2.14 RANGE**

Range improvements will be protected from damage caused by the project. Forest Representatives will administer contracts and burn plans. Contracts and burn plans will display where range improvements are located and include provisions to rebuild to standard any range improvements which are damaged by the contractor. Range improvements for each allotment are listed in Part 3 of the permittees Term Grazing Permit.

The Forest Service Contract Administrator and the Forest Service Prescribed Burn Manager should coordinate with the Forest Service Range Conservationist early each spring to discuss the portions of the project that will be implemented that year. The Forest Service Range Conservationist should discuss those project activities in the Annual Operating Instructions meeting with the permittee prior to the District Ranger's approval of that year's Annual Operating Instructions.

# **Appendix B**

---

**Ingalls Project Design Criteria, Standard  
Operating Procedures, and Other  
Requirements**



# **1 INGALLS PROJECT SPECIFIC DESIGN FEATURES AND MITIGATIONS**

In addition to the Standard Operating Procedures, below, the following design features have been developed for the Ingalls Project. The mitigation measures listed below are common to all action alternatives.

## **1.1 AIR QUALITY**

Specific air quality mitigations for pile burning and broadcast burning would include number of acres burned daily, preferred wind directions for smoke travel and weather conditions, which would allow for smoke dispersal. This would allow for piles to dry before ignition and ceasing ignitions if smoke dispersion conditions degrade. Monitoring of smoke transport is required by National Smoke Air Quality Management District (NSAQMD). These mitigations would be agreed upon with the NSAQMD and addressed in the Smoke Management portion of those burn plans developed for the Ingalls Project.

## **1.2 BOTANY**

To protect sensitive and special interest plant species, as well as unique and unusual botanical habitats the following control areas would be established. Control areas would be flagged prior to project implementation; they would not be disturbed by project activities.

## **1.3 NOXIOUS WEEDS**

In order to prevent and/or reduce the spread of noxious weeds, SOPs would be applied such as requiring that all off-road equipment and vehicles be weed free, use of weed free seed sources and avoiding areas of known weed occurrences including outside the units and project area. Control areas would be flagged prior to project implementation. Control areas would not be disturbed by project activities.

## **1.4 CULTURAL RESOURCES**

Detailed cultural resource information about the location, character, or ownership of a historic resource is withheld from disclosure here because sharing this information may cause an invasion of privacy, may risk harm to the historic resources or may impede the use of a traditional religious site by practitioners [Section 304 of National Historic Preservation Act, 16 U.S.C.

470w-3(b)]. Therefore specific mitigations for cultural resources are not publicly documented.

## **1.5 SOIL AND WATERSHED**

Treatment would be implemented so that effective post treatment ground cover would meet cover values. Where vegetation removal is proposed within RHCAs outside of aspen and cottonwood treatment units, post treatment canopy cover in RHCAs would be preserved at greater than 40 percent.

## 1.6 WILDLIFE

- ▲ **Wildlife Trees:** These trees would be 24” dbh or greater and provide structure beneficial for wildlife use. Suitable trees can be identified by certain desirable characteristics such as teakettle branches, large diameter broken tops, and large cavities located within the tree’s bole.
- ▲ **Hardwoods:** Hardwoods will be favored for leave status and left standing. This includes species such as black oak, aspen and cottonwood. Retain oaks to enhance species composition, age diversity and structural heterogeneity. Gaps can focus on clumps of smaller younger oaks. This would potentially enhance the expansion of oak by encouraging growth in areas of lower conifer shading.
- ▲ **Large woody debris:** Large woody debris (LWD) shall be retained at 2004 SNFPA FSEIS ROD standard and guideline levels, where available (10-15 tons/acre, >12 inches diameter).
  - In areas considered deficient in large woody debris, cull logs would be left at the stump, where possible.
  - During mastication and grapple piling operations: Large woody debris should be left scattered across landscape.
  - In unit 4 the 5-6 existing down logs would be left in place during mechanical activities and lined prior to underburning.
- ▲ **Limited Operating Periods (LOPs):** The action alternatives would have the appropriate LOP applied as identified in Table B-1.

**Table B-1 Wildlife Limited Operating Periods for the Ingalls Project Area**

Unit or Road Number	Species	Limited Operating Period
Unit 1	California Spotted Owl	March 1st thru August 15th
Road 25N49, 25N99 NW of unit	California Spotted Owl	March 1st thru August 15th
Unit 2, 18, 19, 34	Northern Goshawk	February 15th thru September 15th
Units 10, 11, 12, 17 (possible)	Northern Goshawk	February 15th thru September 15th
Underburn Unit 45	Northern Goshawk	February 15th thru September 15th

Notes: Operations would be limited during these periods over portions of the project area.

- ▲ **Snags/Dead Trees:** Snags and dead trees shall be left, unless the tree poses a risk to personnel during operations, or is a risk to the public. Residual snags should be 15 inches and greater in diameter and 20 feet or more in height. Snag/dead trees classified as “hazard” will be marked for removal.
- ▲ **Structural Thinning:** Structural thin areas that are at the higher basal area range (clumps) may contain snags and leaning trees to favor wildlife retention. Lower basal area ranges (gaps) may contain “wolf” and “broom” trees.
- ▲ **Wildlife habitation and nest trees:** Trees that show signs of current habitation, including nesting activity shall be left standing and not removed.

## 2 INGALLS PROJECT: STANDARD OPERATING PROCEDURES

The following Standard Operating Procedures (SOP) apply unless specifically allowed for in the environmental analysis.

### 2.1 FIRE/AIR QUALITY

**Compliance with Air Quality:** Comply with air quality permits issued by the Northern Sierra Air Quality Management District for all prescribed burning. A prescribed burn plan, including a mandatory smoke management plan (SMP), would be required prior to any prescribed fire. The SMP is reviewed and approved by the local Air Quality Management District office.

**Smoke Management:** Conduct prescribed burning in a manner that avoids excessive buildup of smoke in any particular air shed.

**Tree Mortality:** No more than 10% mortality in the residual crop trees following the underburning and no areas of mortality greater than 2 acres; Minimize mortality in visual corridors.

### 2.2 WATERSHED

Protect water quality by using BMPs, employed by the Forest Service and the State of California to prevent water quality degradation and to meet State Water Quality Objectives relating to non-point sources of pollution. In addition, use site-specific mitigation measures that relate directly to these BMPs to minimize erosion and resultant sedimentation.

Apply the Standards and Guidelines identified in the PNF LRMP Streamside Management Zone (SMZ) and SAT Guidelines (as adopted under the HFQLG EIS) relating to timber sale activities in all RHCA. Activities in RHCA would improve or maintain the structure and function of the RHCA and fish and wildlife habitat.

#### 2.2.1 Defining Riparian Habitat Conservation Areas, Streamside Management Zones and Sensitive Areas

**Fish-bearing Streams:** For perennial fish-bearing streams the RHCA consists of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300' horizontal distance, whichever is greatest.

**Perennial Non-fish-bearing Streams:** For perennial non-fish-bearing streams the RHCA consists of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet, whichever is greatest.

**Lakes:** For natural lakes the RHCA consists of the body of water and the area to the outer edges of the riparian vegetation, or to the extent of moderately and highly unstable areas, or to a distance equal to the height of two site-potential trees, or 300 feet horizontal distance, whichever is greatest.

**Ephemeral or Intermittent Streams, Wetlands Less Than One Acre, Landslides and Landslide-prone Areas:** Intermittent and ephemeral streams showing annual scour and deposition, and definable stream channel

wetlands, use RHCA widths of a minimum of 100 feet in width (horizontal distance) or the height of one site potential tree, whichever is greater.

**Ponds, Reservoirs, and Wetlands Greater Than One Acre:** Extend RHCAs around wetlands and perennial non fish-bearing streams to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of moderately and highly unstable areas, or a 150 feet horizontal distance, whichever is greatest.

**Streamside Management Zones:** Employ streamside management zone (SMZ) widths that are 50 feet for those stream segments that do not display annual scour and deposition and are not classified as RHCAs.

## 2.3 TREATMENTS IN RHCAS & SMZS

**Ground Based Harvesting Soil Conditions:** See the section in these SOPs on Soil Protection Measures.

**Equipment Use in RHCAs/SMZs:** Equipment use within RHCAs and SMZs is restricted by the equipment exclusion zones. Equipment exclusion zone widths, measured on each side of the stream from the edge of the active channel, vary depending upon the RHCA and SMZ widths presented above: for 150 ft wide RHCA buffers, the equipment exclusion zone width is 50 ft on each side of the channel; for 300 ft wide RHCA buffers, the equipment exclusion zone width is 100 ft on each side of the channel; and for SMZs, the equipment exclusion zone width is 25 ft on each side of the channel. For seeps, springs, and meadows, the equipment exclusion zone width is 25 ft, measured from the wet perimeter of the soil of facultative wetland species edge, whichever is furthest. Equipment must be excluded from all sensitive areas, unless specifically allowed for in the environmental document. Machinery can work adjacent and reach into the exclusion zone with the extendable boom. Minimize the number of crossings. Crossings would be back-bladed after use, as necessary, to restore the natural relief and reduce erosion.

**Slope Restrictions:** Mechanical equipment would be restricted to slopes up to 25%.

**Bank Stability:** Remove no trees adjacent to channels that provide bank stability and/or contribute to channel integrity (except for hazard trees). Along perennial fish-bearing streams where hardwoods are < 12" and insufficient to provide shade to the stream channel conifers would be left to provide shade.

**Landing Location:** Minimize landing location in RHCAs. Landings would generally not be within 100 feet of the stream course. District hydrologist or soil scientist would approve, on a site-specific basis landings that need to be closer than 100 feet of a stream course.

**Skid Trail Location:** Skid trails would be allowed within equipment exclusion zones on a case-by-case basis with permission of the District's hydrologist, geologist or soil scientist and would generally only be allowed for crossing stream courses. Skid trails would be perpendicular to the stream course within 50 feet of the stream and spacing of skids would be no closer than 120 feet. Throughout RHCAs and SMZs, skid trails would be restricted to less than 25% slope. Do not locate skid trails parallel to the bottom of swales. Treat swales as stream courses, crossing at right angles and skidding away from these features.

**Restoring Landings:** Where specified by the District's physical scientist, existing and activity related disruptions in landings would be restored to their natural contour. This would occur during subsoiling operations. These landings would be tilled, seeded, mulched after use and available slash would be spread out across landing to improve infiltration and minimize erosion upon site visit. Mulch and then subsoil landings and other disturbances within 200 feet of stream channels. Areas within 50' of the meadow edges would not be subsoiled. All project subsoiling activities are to be approved by the District physical scientist prior to subsoiling. Reference: BMP 1-12

**Restoring Skid Trails & Temporary Roads:** Where specified by the District's physical scientist, existing and activity related disruptions in skid trails and temporary roads would be restored to their natural contour. This would occur during subsoiling operations. Areas within 50' of the meadow edges would not be subsoiled.

**Slash Near Stream Courses:** Remove any slash generated by project activities from stream courses as soon as practicable, not exceeding 48 hours.

**Burn Pile Locations:** Locate burn piles above the "green line" or at least 25' away from channels having evident scour and deposition, whichever is greater. Burn the piles prior to underburning.

Allow backing fire to creep into RHCAs if fuels naturally carry the fire.

**Hazard Tree Removal in RHCAs and SMZs:** With case-by-case permission of the project Sale or Contract Administrator, hazard trees may be hand-felled and left in place or removed from RHCAs and SMZs in a manner that minimizes disturbance to the RHCA or SMZ. Mechanical entry would be subject to the equipment exclusion zones described above.

**Large Woody Debris Retention:** Retain at least 90% of large woody debris in channels and leave 50-75% of the ground unburned within the interior 50' of RHCAs. Within these core areas, ensure that burned areas appear intermittent, not concentrated.

## 2.4 SOIL PROTECTION MEASURES

**Ground Cover:** To control the surface erosion, the 1988 Plumas National Forest Land and Resource Management Plan suggests retaining a minimum of 40% ground cover on soils with a low erosion hazard rating. The minimum ground cover increases to 50%, 60% and 70% for soils with an erosion hazard rating of moderate, high and very high, respectively. These suggested guidelines are adopted as the minimum ground cover standard. If ground cover standards are not met, implement mitigation methods such as leaving chips on site to ensure standards would be met. In addition, retain 5 tons/acre of down woody debris less than 15" in diameter.

**Ground Based Harvesting:** Conduct ground based harvest operations only when the upper 8" of the soil is essentially dry, or the ground is frozen to a depth of 5", or snow depth is at least 18" or is compacted by equipment to 8". For this measure, soil is defined as "dry" when no portion of the top 8" can be molded by hand compression and hold that shape when the hand is tapped.

**Slope Restrictions:** Allow low ground pressure (under 8.0 psi when "unloaded") excavators to work on slopes up to 45% to pile excess fuels. All other mechanical equipment would be restricted to slopes that are equal to or less than 35 percent.

**Skid Trails:** Restrict skidding equipment to designated skid trails, unless, through consultation with the District's hydrologist, geologist or soil scientist, it is determined that departure from skid trails would not likely impair the soil or the operator is using low ground pressure (under 8.0 psi) harvesting equipment to travel off designated skid trails to bring logs to trails. Generally use skid trail spacing averaging 120', center to center, when trails are parallel and generally perpendicular to the stream. Reusing existing skid trails, with spacing closer than prescribed, is acceptable.

**Subsoiling Landings & Skid Trails:** Based upon the soil type, existing landings and skid trails used by the project and newly created skid trails with compacted soil, would be subsoiled using a wingtip subsoiling implement and displaced soil would be leveled and slash scattered. In general, constructed skid trails experiencing *three or more* passes with equipment, would be subsoiled to a minimum depth of 24", water-barred and blocked. However, all project subsoiling activities are to be approved by the District physical scientist prior to subsoiling. Subsoiling skid trails within harvest units on coarse textured soils (USDA texture

classes: sands, loamy coarse sands; and coarse sandy loams with less than 5% clay content) that have developed from granitic parent material would generally not be recommended.

**Subsoiling Specifications:** Where specified by the District's physical scientist, subsoil skid trails, landings, temporary roads, and non-system roads within the project area through the full depth of compaction to restore soil porosity. Selected landings and terminating skid trails would be subsoiled with a winged subsoiler or other equipment capable of lifting and fracturing compacted soil without mixing the soil horizons to a depth of at least 24". The subsoiler would be lifted where substantial root and bole damage to larger trees would occur from subsoiling. Skids with slope over 25% may not be approved for subsoiling but would be frequently water barred per project BMPs. Areas within 50' of ephemeral draws, swales, connected drainages and meadow edges would not be subsoiled. Subsoiling would not occur on shallow soils where the displacement of rocks disrupts soil horizons or where there are concerns about the spread of root disease, or damage to tree roots. When landings and temporary roads are planned for subsoiling, recovery of topsoil displaced during construction would be considered. Block vehicle access to temporary roads and install water-bars prior to subsoiling them.

## 2.5 TRANSPORTATION

**Stream Crossings:** Design all new stream crossings to accommodate a 100-year flood and provide fish passage as necessary.

**Restore Temporary Roads:** Restore temporary roads after use. Design and obliterate temporary stream crossings to protect water quality and adjacent riparian vegetation (see "Watershed" section for additional procedures for protecting riparian vegetation).

**Water Bars:** Stabilize and strategically place water bars on temporary roads where drainage control issues are evident or expected.

**Road Barricades:** After use, barricade temporary roads to discourage vehicle traffic, using available natural materials such as rocks, logs, root wads and earth, to appear somewhat natural, have low installation costs and require little to no maintenance.

**Dust Abatement:** Abate dust from logging traffic with water selected from water drafting sites that have suitable stream flow and access. When water is scarce, use alternative sources such as chlorite, sulfonate or other dust abatement materials.

**Drafting Sites:** Estimate maximum drawdown volumes prior to using the draft site. Maintain minimum pool levels during drafting using measurements such as staff gauges, stadia rods, tape measures, etc. Construct water-drafting sites so that oil, diesel fuel, or other spilled pollutants would not enter the stream. Maintain stream bank stability and minimize sedimentation by constructing and maintaining back down ramps. Rocking, chipping, mulching, or other effective methods are acceptable in achieving this objective. Suction strainers must contain screen openings with less than 2mm holes and meet the specifications outlined in FSM 5161. The suction strainer shall be inserted close to the substrate in the deepest water available; the suction strainer shall be placed in a bucket to avoid substrate and amphibian disturbance.

## 2.6 SILVICULTURE

**Borax Application:** Treat all stumps > 14" diameter with a borate compound for the control of *Annosus* root disease. Apply borate compound to all pine and true fir cut stumps within Recreation Areas, within 4 hours of cutting the trees.

**Genetic Stock Protection:** Protect trees identified or trees being tested as genetically superior or resistant to blister rust or dwarf mistletoe.

## 2.7 BOTANY

**Protection for Plant Species:** Protect known Threatened, Endangered, Sensitive and Special Interest plant species according to Plumas National Forest current interim management prescriptions for specific species. If additional protected plant species are found during the life of the project, conduct an assessment and apply appropriate management prescriptions.

## 2.8 NOXIOUS WEED MANAGEMENT

The SOPs are based on the priorities established in FSM 2081.2 which states “where funds and other resources do not permit undertaking all desired measures, address and schedule noxious weed prevention and control in the following order:

- ▲ First Priority: Prevent the introduction of new invaders,
- ▲ Second Priority: Conduct early treatment of new infestations
- ▲ Third Priority: Contain and control established infestations.
  1. Prevention/Cleaning: Require all off-road equipment and vehicles (Forest Service and contracted) used for project implementation to be weed-free. Clean all equipment and vehicles of all attached mud, dirt and plant parts at a vehicle washing station or steam cleaning facility before the equipment and vehicles enter the project area. Cleaning is not required for vehicles that would stay on the roadway. In addition, clean all off-road equipment prior to leaving areas infested with noxious weeds.
  2. Prevention/Road Construction, Reconstruction and Maintenance: All earth- moving equipment, gravel, fill or other materials need to be weed free. Use onsite sand, gravel, rock, or organic matter where possible.
  3. Prevention/Revegetation: Use weed-free equipment, mulches and seed sources. Avoid seeding in areas where revegetation would occur naturally, unless noxious weeds are a concern. Save topsoil from disturbance and put it back to use in onsite revegetation, unless contaminated with noxious weeds. All activities that require seeding or planting would need to use only locally collected native seed sources. Collect plant and seed material as close to the project area as possible, from within the same watershed and at a similar elevation whenever possible. Avoid persistent non-natives such as timothy, orchard grass, or ryegrass. This would implement the USFS Region 5 policy that directs the use of native plant material for revegetation and restoration for maintaining “the overall national goal of conserving the biodiversity, health, productivity and sustainable use of forest, rangeland and aquatic ecosystems”.
  4. Prevention/Staging Areas: Do not stage equipment, materials, or crews in noxious weed infested areas where there is a risk of spread to areas of low infestation.
  5. Small Infestations: Small infestations identified during project implementation would be evaluated and hand treated or “flagged and avoided” according to the species present and project constraints. Larger infestations identified after implementation, should be isolated and avoided with equipment (and equipment washed as in # 1 above).

## 2.9 WILDLIFE

**Wildlife Limited Operating Periods:** Unless determined to be unnecessary following pre- implementation surveys, limited operating periods (LOPs) to protect key wildlife species listed in the HFQLG FEIS (page 2-8, Table 2.3), 2004 SNFPA ROD (pages 54-62) and the Biological Evaluation/Biological Assessment would apply.

**New Wildlife Findings:** Where subsequent surveys identify occupied threatened, endangered, or sensitive species habitat, establish PACs, den site buffers, or other protections as described in the SNFPA EIS and HFQLG EIS. Include protections for any additional sensitive species identified in the BE/BA. In the event of a verified TES species occurrence after project award, the appropriate LOPs would apply. Other mitigations may take place as agreed upon by the Sale Administrator and District Wildlife Biologist.

**Known Populations:** In areas of known populations of TES amphibians, apply direction from the HFQLG FEIS/ROD and the SNFPA ROD. Apply additional protection measures as follows: do not burn slash piles within RHCAs during the LOP and when burned, assure that 1) no fuel is dumped on the pile and fusees or a single torch is used to light the pile and 2) light piles from a single location rather than multiple locations, allowing sheltering amphibians to escape.

### 2.9.1 Down Wood and Snags

Down wood and snag retention would follow the Standards and Guides in Table 2 of the 2004 SNFPA ROD.

**Down Wood:** Within westside vegetation types, generally retain an average of 10-15 tons (> 15' diameter) of large down wood per acre over the treatment unit. Within eastside vegetation types, an average of 3 large down logs would generally be retained per acre. In areas considered deficient in large woody debris, wherever possible leave cull logs at the stump rather than being skidded to the landing. The Sale Administrator and the District Wildlife Biologist would agree upon the location and amount.

**Snags:** Snag retention levels would be determined on an individual, project basis; however, they would consider the guidelines set forth in the Standards and Guides (USFS 2004). The Guidelines state that projects would retain 4 of the largest snags per acre in westside mixed conifer and ponderosa pine types; 6 of the largest snags per acre in the red fir forest type; 3 of the largest snags per acre in the eastside and eastside pine types; and 4 of the largest snags in westside hardwood ecosystems. Wherever possible, use snags larger than 15" dbh to meet these guidelines.

## 2.10 CULTURAL RESOURCES

The proposed project has the potential to affect cultural resources. As outlined in the Programmatic Agreement, the following protection measures would be implemented, as appropriate, for all cultural resources located within the project area. The application of the following protection measures would result in the project having "no effect" on cultural resources and the Forest would have taken into account the effect of the project on cultural resource sites in compliance with the Programmatic Agreement and Section 106 of the NHPA.

If any unrecorded cultural resources (artifacts, features, or sites) are encountered as a result of project operations, all activities in the vicinity of such finds would immediately cease pending an examination by the District Archaeologist.

- ▲ At a minimum, cultural resource sites shall be excluded from areas where activities associated with the project would occur.

1. All proposed activities, facilities, improvements and disturbances shall avoid cultural resource sites. Avoidance means that no activities associated with the project that may affect cultural resource sites shall occur within a site's boundaries, including any defined buffer zones. Portions of the project may need to be modified, redesigned, or eliminated to properly avoid cultural resource sites.
2. All known cultural resource sites within the area of potential effect shall be clearly delineated prior to implementing any associated activities that have the potential to affect cultural resource sites.
3. Buffer zones may be established to ensure added protection where the Forest or District Archaeologist determines that they are necessary. The use of buffer zones in conjunction with other avoidance measures are particularly applicable where setting contributes to the property's eligibility under 36 CFR 60.4, or where it may be an important attribute of some types of cultural resource sites (e.g., historic buildings or structures; historic or cultural properties important to Native Americans). The size of buffer zones needs to be determined by the Forest or District Archaeologist on a case-by-case basis.
4. When any changes in proposed activities are necessary to avoid cultural resource sites, e.g., project modifications, these changes shall be completed prior to initiating any activities.
5. Monitoring during project implementation, in conjunction with other measures, may be used to enhance the effectiveness of protection measures.
6. Upon approval of the Forest or District Archaeologist, low intensity underburning may be allowed over selected prehistoric sites as long as fuel loads are relatively light.
7. The Forest or District Archaeologist may approve the use of mechanical equipment to remove brush or woody material from within specifically identified areas within site boundaries under prescribed measures designed to prevent or minimize effects. Vegetative or other protective padding may be used in conjunction with the Archaeologist's authorization of certain equipment types within site boundaries.
8. Upon approval of the Forest or District Archaeologist, existing breaches within linear sites may be designated on the ground and reused for project activities.
9. Roads and trails that currently overlie historic linear sites may continue to be used as transportation routes without notification. However, if there are activities that would change the morphology of the existing road or trail (that is overlaying a historic linear site), these activities need to be reviewed by the Forest or District Archaeologist.
10. Roads proposed to be restored that extend through archaeological sites would need to be blocked instead of sub-soiled.
11. Vegetation may be removed within sites using hand tools, so long as ground disturbance is minimized and features are avoided. The removed vegetation shall not be piled within site boundaries unless the location has been specifically approved by the Forest or District Archaeologist.

## **2.11 VISUAL QUALITY MANAGEMENT (IMMEDIATE FOREGROUND OF VISUAL CORRIDORS)**

**Landing & Skid Trail Locations:** To the extent feasible, locate landings and primary skid trails away from the immediate foreground of Sensitivity Level I and II travel corridors. Limit size of landings so that they are not visually evident from the sensitive travel routes following completion of treatment activities.

**Stump Heights:** Minimize stump heights in both mechanical and hand thinning units adjacent to sensitive travel corridors, typically resulting in stumps 6" or less in height within 300' of the travel corridor.

**Tree Marking:** During tree marking, open and enhance views of residual old growth trees near the visual corridor where possible.

**Burn Piles & Underburning:** Target consumption of burn piles to 95% or greater. Target underburn mortality levels of 5% or less.

## 2.12 IMPLEMENTATION

**NEPA and Implementation:** Within the project contract area, allow minor adjustments in boundaries of units if compatible with Forest Plan direction, the desired conditions and anticipated environmental effects disclosed by the project's NEPA document.

## 2.13 RANGE

**Maintenance of Range Improvements:** Range improvements would be protected from damage caused by the project. Contracts and burn plans would display where range improvements are located and include provisions to rebuild to standard any range improvements, which are damaged by the contractor. Range improvements for each allotment are listed in Part 3 of the permittee's Term Grazing Permit.

**Coordination with Range Conservationist:** The Forest Service Contract Administrator and the Forest Service Prescribed Burn Manager should coordinate with the Forest Service Range Conservationist early each spring to discuss the portions of the project that would be implemented that year. The Forest Service Range Conservationist should discuss those project activities in the Annual Operating Instructions meeting with the permittee prior to the District Ranger's approval of that year's Annual Operating Instructions.

# **Appendix C**

---

**Keddie Ridge Project Design Criteria,  
Standard Operating Procedures, and  
Other Requirements**



# 1 KEDDIE RIDGE PROJECT DESIGN CRITERIA

This section presents a series of tables (Table C-4 through Table C-12) that contain the design criteria for the treatments proposed in the action alternatives. The design criteria are part of the project design, apply to the proposed treatments, and were developed to reduce or avoid adverse environmental effects of the proposed treatments.

**Table C-4 Design Criteria for Defensible Fuel Profile Zone and Area Thinning**

Criterion	Actions
Ground-based Harvesting and Yarding	<p>Mechanical harvesting and whole-tree yarding would be used to remove commercial sawlog and biomass trees. Trees greater than or equal to 10 inches DBH would be removed as sawlog product and trees less than 10 inches DBH would be removed as biomass product. Tops and limbs would be yarded to the landing and removed as a product.</p> <p>Ground-based equipment would be restricted to slopes less than 35 percent. Exceptions may be made for short pitches (less than 100') within the interior of units where slopes exceed these limits. When units have inaccessibly steep inclusions of steeper ground, sawlog and biomass products may be end-lined.</p>
Skyline Harvesting and Yarding	<p>In units 46, 50, 54, 55, 95, and 99a: Skyline yarding would be used to remove commercial sawlogs. Trees greater than or equal to 10 inches DBH would be removed as sawlog product. Harvested trees would be limbed, topped, and this activity slash would be hand piled. Trees less than 10 inches DBH would be hand thinned, piled, and burned post-treatment.</p> <p>In units 2, 4, 5, 21, 27, 28, 29 56, and 59: Whole-tree yarding would be used to remove commercial sawlog and biomass trees. Trees greater than or equal to 10 inches DBH would be removed as a sawlog product. Trees less than 10 inches DBH would be removed as a biomass product. Tops and limbs would be yarded to the landing and removed as a product.</p> <p>Skyline yarding would require one end suspension with full suspension over intermittent and perennial streams. The corridor would not be wider than 20 feet. The width for lateral yarding to the skyline corridor would be 75 feet on either side of the mainline. Lateral yarding would not require lift. When there are short inclusions of side hill within the corridor, allow side hill yarding.</p> <p>The top 100 feet of the skyline corridor would be rehabilitated with weed-free straw mulch and native seed.</p>
Residual species preference	<p>Retain the largest, most vigorous dominant and codominant trees to create a residual stand that would be comprised of larger fire-resilient trees. Species preference would be determined by forest type. In general, prefer to retain shade-intolerant species including rust-resistant sugar pine, black oak, ponderosa and Jeffrey pine, and Douglas-fir.</p>
Residual surface fuels	<p>Maintain adequate cover of surface fuels, litter, duff, and large woody debris to maintain habitat values, reduce potential erosion, and meet soil standards for woody debris and ground cover.</p> <p>Retain surface fuels (less than 12 inches diameter) at a level that would result in projected flame lengths of less than 4 feet under 90th percentile weather conditions. This generally corresponds to approximately 5 tons or less of surface fuels per acre, or a fuel model 8 or 9, depending on the forest type.</p> <p>Fuel model 8 and 9 are representative of the desired condition for surface fuels for fir dominated and pine dominated stands, respectively.</p> <p>Retain large woody debris (greater than 12 inches diameter), where they exist, at 10 to 15 tons per acre of the largest down logs. Where needed, jackpot burn, or machine pile and burn extensive areas of deadfall, where feasible, in terms of equipment operability and reduced chance of excessive scorch-related mortality upon burning of these piles.</p> <p>Based on post treatment evaluations, underburn, jackpot burn, machine pile and burn, and/or hand pile and burn to treat natural and activity-generated fuels.</p>
Snag retention	<p>Retain the number of snags per acre appropriate for each forest type unless removal is required to allow for operability. In Sierra mixed conifer types and ponderosa pine forest types, retain four of the largest snags per acre. In the red fir forest type, retain six of the largest snags per acre. Snags larger than 15 inches DBH and 20 feet in height would be used to meet this guideline.</p>

TES treatment areas and control areas	<p>Bald Eagle: Within 12 acres immediately surrounding the nest tree (unit 75a) hand thin, pile, and burn trees less than or equal to 8 inches DBH.</p> <p>Clustered Lady's Slipper: (9 acres within units 51, 52, 54, 55, 66, 67, and 68): Within TES treatment areas, hand thin, pile, and burn trees less than or equal to 8 inches DBH. Within control areas, hand thinning would be allowed, but piles must be located outside of the control area. Surface fuels would be manipulated within clustered lady's slipper occurrences to reduce direct impacts from prescribed fire treatments.</p> <p>Constance's Rock Cress: (76 acres within units 64 and 71): Within TES treatment areas, hand thin, pile, and burn trees less than or equal to 8 inches DBH. Piling would occur in designated areas away from sensitive plants</p>
Fireline	Construct firelines using hand crews or mechanical equipment, as needed, around areas to be underburned, and around machine piles or hand piles. Incorporate existing roads, landings, skid trails, rock fields, bare areas, and other features into containment lines where logical and feasible.
Treatment of Stumps	Pine stumps 14 inches and greater in diameter would be treated with borax within one day of cutting, to prevent the introduction and spread of Heterobasidion root disease, in units 45, 46, 49, and 50.

**Table C-5 Design Criteria for Group Selections**

Criterion	Actions
Group size	0.5 acre to 2.0 acres.
Group location	Group selections would primarily be located in CWHR size class 4 stands (average DBH of 11 to 24 inches). Locate groups outside of Riparian Habitat Conservation Areas.
Ground-based Harvesting and Yarding	<p>Mechanical harvesting and whole-tree yarding would be used to remove commercial sawlog and biomass trees. Trees greater than or equal to 10 inches DBH would be removed as sawlog product and trees less than 10 inches DBH would be removed as biomass product. Tops and limbs would be yarded to the landing and removed as a product.</p> <p>Ground-based equipment would be restricted to slopes less than 35 percent. Exceptions may be made for short pitches (less than 100') within the interior of units where slopes exceed these limits. When units have inaccessibly steep inclusions of steeper ground, sawlog and biomass products may be end-lined.</p>
Skyline Harvesting and Yarding	<p>In units 46, 50, 54, 55, 95, and 99a: Skyline yarding would be used to remove commercial sawlogs. Trees greater than or equal to 10 inches DBH would be removed as sawlog product. Harvested trees would be limbed, topped, and this activity slash would be hand piled. Trees less than 10 inches DBH would be hand thinned, piled, and burned post-treatment.</p> <p>In units 2, 4, 5, 21, 27, 28, 29 56, and 59: Whole-tree yarding would be used to remove commercial sawlog and biomass trees. Trees greater than or equal to 10 inches DBH would be removed as a sawlog product. Trees less than 10 inches DBH would be removed as a biomass product. Tops and limbs would be yarded to the landing and removed as a product.</p> <p>Skyline yarding would require one end suspension with full suspension over intermittent and perennial streams. The corridor would not be wider than 20 feet. The width for lateral yarding to the skyline corridor would be 75 feet on either side of the mainline. Lateral yarding would not require lift. Side-hill setups would not be allowed. The top 100 feet of the skyline corridor would be rehabilitated with weed-free straw mulch and native seed.</p>
Diameter constraints	All trees greater than or equal to 30 inches DBH would be retained, except where removal is required to allow for operability. Minimize damage to trees greater than or equal to 30 inches DBH as much as practicable.
Slash treatment   Site Preparation	Based on post treatment evaluations, underburn, jackpot burn, machine pile and burn, and/or hand pile and burn, to treat natural and activity generated fuels, and shrubs.
Regeneration strategy	Regenerate groups with native shade-intolerant conifers, indicative of the ecological habitat type in which the group is located, using a combination of natural and planted seedlings to achieve desired stocking levels. Plantation performance would be monitored after the 1st and 3rd years, and regeneration actions would be undertaken, if needed, to ensure successful regeneration within five years after harvest. Control competing brush and grass by grubbing or mastication, if necessary, to assure survival and growth of conifers.
Residual species preference	Retain all sugar pine tagged as resistant to white pine blister rust. Where black oak is present, retain black oaks greater than or equal to 6 inches DBH.

**Table C-5 Design Criteria for Group Selections**

Criterion	Actions
Residual surface fuels	<p>Maintain adequate cover of surface fuels, litter, duff, and large woody debris to maintain habitat values, reduce potential erosion, and meet soil standards for woody debris and ground cover.</p> <p>Retain surface fuels (less than 12 inches diameter) at a level that would result in projected flame lengths of less than 4 feet under 90th percentile weather conditions. This generally corresponds to approximately 5 tons or less of surface fuels per acre, or a fuel model 8 or 9, depending on the forest type. Fuel model 8 and 9 are representative of the desired condition for surface fuels for fir dominated and pine dominated stands, respectively.</p> <p>Retain Large Woody debris (greater than 12 inches diameter): Where they exist, retain 10 to 15 tons per acre of the largest down logs. Where needed, machine pile and burn extensive areas of deadfall, where feasible, in terms of equipment operability and reduced chance of excessive scorch-related mortality upon burning of these piles.</p> <p>Based on post treatment evaluations, underburn, jackpot burn, machine pile and burn, and/or hand pile and burn to treat natural and activity-generated fuels.</p>
Snag retention	Retain two of the largest snags per acre exceeding 15 inches DBH and 20 feet tall, unless removal is required to allow for operability.
Fireline	Construct firelines using hand crews or mechanical equipment around groups to be underburned and around machine piles or hand piles, as needed. Incorporate existing roads, landings, skid trails, rock fields, bare areas, and other features into containment lines where logical and feasible.
Treatment of Stumps	Under alternative A, Pine stumps 14 inches and greater in diameter would be treated with borax within a day of cutting, to prevent the introduction and spread of Heterobasidion root disease, in units 45, 46, 49, and 50.

Notes: Group selections are not included in alternative C (non-commercial funding alternative) and alternative D (2001 SNFPA ROD Consistent Alternative).

Herbicide treatments are not included in alternatives C and E.

**Table C-6 Design Criteria for Riparian Habitat Conservation Areas**

Criterion	Actions
Equipment constraints	No mechanical equipment operations on slopes steeper than 25 percent. Establish equipment exclusion zones adjacent to stream channels according to Table 9 below. Allow equipment to travel into the outer RHCA zone to harvest trees and bring them to skid trails. Locate skid trails at angles to stream channels that minimize erosion into the channel, and allow skidders to back in to the outer Riparian Habitat Conservation Areas (RHCA) on these skid trails. To minimize soil displacement, no equipment would be permitted to turn around while off a skid trail in RHCA's. Allow hand thinning and hand piling in areas where equipment is excluded.
Diameter constraints	Within mechanical harvest areas, implement a 20-inch upper diameter limit, except where needed for operability. Minimize damage to trees larger than 20 inches DBH as much as practicable. In equipment exclusion zones, implement an 8-inch upper diameter limit on hand thinning treatments.
Residual species preference	Where present, retain all hardwood and riparian species. Retain the largest, most vigorous dominant and codominant trees to create a residual stand that would be comprised of larger fire-resilient trees. Species preference would be determined by forest type. In general, prefer to retain shade-intolerant species including rust-resistant sugar pine, black oak, ponderosa and Jeffrey pine, and Douglas-fir.
Snag retention	Retain the number of snags per acre appropriate for each forest type unless removal is required to allow for operability. In Sierra mixed conifer types and ponderosa pine forest types, retain four of the largest snags per acre. In the red fir forest type, retain six of the largest snags per acre. Snags larger than 15 inches DBH and 20 feet in height would be used to meet this guideline.
Burn constraints	Establish pile burning exclusion zones (Table 10) adjacent to stream channels. Locate burn piles away from riparian vegetation to reduce the potential for scorch where feasible. Active ignition for prescriptive underburning would be minimized within 50 feet of perennial channels and 25 feet of ephemeral and intermittent channels. Backing fires would be used to minimize scorch of riparian vegetation within these

**Table C-6 Design Criteria for Riparian Habitat Conservation Areas**

Criterion	Actions
	buffers.
Fireline	Construct firelines using hand crews around areas to be underburned or pile burned, as needed, Incorporate existing roads, landings, skid trails, rock fields, bare areas, and other features into containment lines where logical and feasible.
Residual surface fuels	Maintain adequate cover of surface fuels, litter, duff, and large woody debris to maintain habitat values, reduce potential erosion, and meet soil standards for woody debris and ground cover. Retain surface fuels (less than 12 inches diameter) at a level that would result in projected flame lengths of less than 4 feet under 90th percentile weather conditions. This generally corresponds to approximately 5 tons or less of surface fuels per acre, or a fuel model 8 or 9, depending on the forest type. Fuel model 8 and 9 are representative of the desired condition for surface fuels for fir dominated and pine dominated stands, respectively. Retain Large Woody debris (greater than 12 inches diameter): Where they exist, retain 10 to 15 tons per acre of the largest down logs. Where needed, machine pile and burn extensive areas of deadfall, where feasible, in terms of equipment operability and reduced chance of excessive scorch-related mortality upon burning of these piles. Based on post treatment evaluations, underburn, jackpot burn, machine pile and burn, and/or hand pile and burn to treat natural and activity-generated fuels.
Fish passage improvement	Reclaim fish passage and habitat by improving or replacing culverts at specific locations where roads cross streams.

**Table C-7 Scientific Assessment Team (SAT) Guidelines for RHCA Buffer Widths Based on Stream Type**

Stream Type	Prescribed Stream Buffer Widths
Perennial, fish bearing <sup>1</sup>	300 feet
Perennial, non- fish bearing <sup>2</sup>	150 feet
Intermittent <sup>3</sup>	100 feet
Ephemeral <sup>3</sup>	100 feet

<sup>1</sup>-Perennial fish bearing streams and lakes.  
<sup>2</sup>-Perennial non-fish bearing streams, ponds, wetlands greater than 1 acre, and lakes.  
<sup>3</sup>-intermittent and ephemeral streams, wetlands less than 1 acre, and landslides.  
Source: USDA 1999b, page 2-11

Table 8 displays the Scientific Assessment Team guidelines for RHCA buffer widths based on stream type. For the Keddie Ridge Project, the above listed widths would be the maximum buffer width identified for each stream type. Table 9 below displays an additional buffer (inner buffer or equipment exclusion zone) within the RHCA and within the SAT guideline buffer identified above.

For example, there is a perennial fish bearing stream within a treatment unit; a 300 foot buffer is applied. Within that 300 foot buffer, approximately 70 feet from the edge of the active channel, the slope is 22 percent; a 150 foot inner buffer is applied. From the edge of the active channel no equipment can enter the RHCA for 150 feet. Equipment can enter the remaining 150 feet of the 300 foot maximum buffer.

When the slope within the SAT guideline buffer is greater than 25 percent, no mechanical equipment is allowed to enter the RHCA. For example, there is a perennial stream with a treatment unit; a 300 foot buffer is applied. Within that 300 foot buffer, approximately 100 feet from the edge of the active channel, the slope is 32 percent; no equipment is allowed within any portion of the 300 foot buffer.

**Table C-8 Equipment Exclusion Zones in RHCAs**

Stream Type	Slope Class		
	0-15% (feet)	15%-25% (feet)	Greater Than 25%
Perennial, fish bearing	100	150	No mechanical equipment allowed
Perennial, no fish	50	100	No mechanical equipment allowed
Intermittent	25	50	No mechanical equipment allowed
Ephemeral	25	25	No mechanical equipment allowed
Reservoirs/wetlands greater than 1 acre	50	75	No mechanical equipment allowed

Within the SAT guideline buffer, a project specific distance (feet) is applied to the placement of piles for future burning (Table 10). For example, there is an ephemeral stream with a treatment unit; a 100 foot buffer is applied. Within that 100 foot buffer, approximately 70 feet from the active stream channel, the slope is 26 percent. First, no mechanical equipment is allowed within any portion of the 100 foot buffer (Table 9). Second, piles must be placed 15 feet from the center of the stream bed (Table 10).

**Table C-9 Pile Burning Exclusion Zones in RHCAs**

Stream Type	Slope Class	
	0-15% (feet)	Greater Than 15% (feet)
Perennial	25	40
Intermittent	15	25
Ephemeral	15	15
Reservoirs/wetlands greater than 1 acre	15	25

Note: Where feasible, burn piles would not be placed any closer to streams than the distances shown in this table.

**Table C-10 Design Criteria for Noxious Weeds**

Criterion	Actions
Frequency	1-2 times per season for 2-5 years.
Manual weed treatments	Includes techniques such as hand pulling, digging, cutting (i.e. with a weed whacker), or covering. Would be used to treat small infestations (i.e. less than 50 plants) and as a follow-up method to herbicide or prescribed fire treatments.
Prescribed fire and flaming treatments	Prescribed fire treatments would be conducted in the spring and early summer. Flaming with a propane torch may be used to control weed infestations in areas that are a high risk for spread (i.e. on roads or landings).
Herbicide treatments	Two herbicides would be used to treat noxious weeds: aminopyralid (i.e. Milestone® or an equivalent formulation) and glyphosate (i.e. Accord™ or an equivalent formulation).
Timing of herbicide applications	Yellow starthistle: Early spring through summer Canada thistle: Early summer and/or fall Hoary cress: Early spring to early summer
Aminopyralid treatments	Where: upland infestations Use limitations: aminopyralid applications would be limited to areas that are greater than 15 feet from the water's edge Application: selectively, using a backpack sprayer Rate: 0.05 to 0.11 acid equivalent (a.e.) pounds per acre (lbs/acre)
Glyphosate treatments	Where: Lowland infestations Use limitations: glyphosate applications would be limited to infestations that are between 0 - 15 feet from the water's edge; the one

**Table C-10 Design Criteria for Noxious Weeds**

Criterion	Actions
	exception to this is the single hoary cress infestation, which will be treated in its entirety with glyphosate Application: wick applicator or backpack sprayer Rate: 1 - 3 acid equivalent (a.e.) pounds per acre (lbs/acre)
Wind speed limitations	Herbicide application using a backpack sprayer would not occur when wind speed exceeds 10 miles per hour or when drift is visually observed.
Herbicide guidelines	All applicable pesticide laws and label restrictions would be followed to ensure human health and safety.
Herbicide Additives a	The following additives may be added to herbicide formulations to increase efficacy of treatments: non-ionic modified vegetable oil surfactant b (i.e. Competitor® or an equivalent) and water soluble colorant c (i.e. Hi-Light™ Blue or an equivalent).
<p>Notes:</p> <p>a. Spray solution additives are mixed with an herbicide solution to improve performance of the spray mixture. Examples include surfactants, wetting agents, sticker-spreaders, or penetrants.</p> <p>b. Surfactants are substances that facilitate and enhance the absorbing, emulsifying, spreading, sticking, wetting, or penetrating properties of herbicides.</p> <p>c. Colorants are added to herbicide mixtures prior to application to help identify the treated area, prevent skips and overlaps, and to help reduce human exposure to recently treated vegetation.</p> <p>Herbicide treatments are not included in alternatives C (non-commercial funding alternative) or E (2004 SNFPA ROD)</p>	

**Table C-11 Design Criteria for Access and Transportation**

Criterion	Actions
NFS road maintenance	Maintain approximately 50 miles of NFS roads.
NFS road reconstruction	Reconstruct 1.1 miles of NFS roads.
Non-system road reconstruction	Reconstruct 8.1 miles of non-system roads.
Non-system road construction	Construct approximately 6.8 miles of new temporary non- system roads. Decommission these roads upon project completion.
Harvest landings	Landings would be utilized to remove sawlog and biomass products. The Keddie Ridge Project is planned to accommodate product removal with one landing per 40 acres. Per FSH 2409.15, a project should have no more than one landing per 20 acres except when there is a need for more landings to limit resource protection problems. Existing landings shall be reconstructed and utilized considering the location and effects to resources. Would construct new landings where existing landings are not present or are inadequate due to the location and effects to resources. Number and location of landings would be subject to agreement and would conform to direction as specified in FSH 2409.15, SMRs and BMPs. For existing landings supporting cull decks, identify and relocate individual hollow log structures prior to cull deck construction. Relocate hollow logs to forest stand outside of landing disturbance area. Landing spacing for skyline units would be 150 feet. Skyline units may require more landings in order to process biomass. Removal of green trees would occur to allow for temporary non-system road and landing construction.
<p>Notes: a. Road treatments are planned and would be implemented in accordance with the PNF LRMP (USDA 1988) and the Plumas National Forest Public Motorized Travel Management FEIS (USDA 2010a) and ROD (USDA 2010b).</p>	

**Table C-12 Design Criteria for Watershed Improvements**

Criterion	Actions
NFS road improvement	Treatments range from light brushing with no drainage improvements to heavy brushing and large drainage improvements. Drainage improvements may include: outsloping road segments, installing armored rolling dips, or replacing culverts. Improvements to the road drainage system and road surface prism would be considered for 100 miles of road within the watershed analysis area. Rolling dips, which would likely be one of the most commonly prescribed road improvement for the Keddie Ridge Project, are generally installed at a frequency of 1-4 dips per mile of road. This estimate may vary depending on the existing condition of the road drainage system and the number of stream crossings present. Each dip would be approximately 15 feet long and as wide as the existing road surface. Placement of dips would be determined by district watershed staff in order to sufficiently disconnect the road drainage system from nearby stream channels. Refer to appendix C for more details.
NFS road decommissioning	Decommission approximately 0.6 mile of NFS road 28N38A upon project completion.
Non-system road decommissioning	Decommission approximately 0.4 mile of non-system roads upon project completion.

Notes:

a. Road treatments are planned and would be implemented in accordance with the PNF LRMP (USDA 1988) and the Plumas National Forest Public Motorized Travel Management FEIS (USDA 2010a) and ROD (USDA 2010b).

Watershed improvements are not proposed under alternative C (non-commercial funding alternative).

## 2 KEDDIE RIDGE RIPARIAN MANAGEMENT OBJECTIVES

Riparian and aquatic ecosystems on the PNF are managed to achieve specific riparian management objectives (RMOs) as presented in the Scientific Assessment Team (SAT) Guidelines (USDA 1999a, 1999b, appendix L). Each of the 10 RMOs is listed below followed by a discussion that includes current conditions, project design features, and standard management requirements that achieve those objectives. In general, the Herger-Feinstein Quincy Library Group Forest Recovery Act Environmental Impact Statement (HFQLG EIS) guidelines prohibit activities within the riparian habitat conservation areas (RHCA) unless they are specifically designed to improve the structure and function of the RHCA and benefit fish habitat. The RMOs that specifically relate to hydrology and apply to the construction of the Defensible Fuel Profile Zone and operations within RHCA are presented below.

Under all action alternatives, treatments are proposed within RHCA. In the discussion that follows, most references to treatment within RHCA are specifically limited to those treatment areas. No RHCA treatment would occur under the no-action alternative.

The objective of the RHCA treatment within fuel reduction units is to reduce the potential for adverse impacts from high intensity wildfire. Historically, fire has been an integral disturbance agent in riparian systems (Dwire and Kauffman 2003). However, fire suppression has reduced the influence of fire, resulting in fuel accumulation and increased likelihood of large, severe wildfires (Taylor and Skinner 1998). RHCA treatments would provide a safer and more effective fire suppression environment, improve forest health, and provide for a more sustainable vegetation condition consistent with protecting and maintaining riparian habitat values.

Field surveys were conducted to verify the existence and condition of the streams and sensitive areas within units that would be mechanically treated. All RHCA treatments are designed to minimize erosion from soil disturbance, and to protect and maintain the riparian vegetation that provides bank stabilization and habitat for wildlife, fish, and other aquatic species. The ten RMOs for the Keddie Ridge Project are discussed below.

---

**Maintain or restore water quality to a degree that provides for stable and productive riparian and aquatic ecosystems. Water quality parameters that apply to these ecosystems include timing and character of temperature, sediment, and nutrients.**

---

In addition to reducing the risk of high-intensity fires, thinning RHCAs will allow the ecosystem within this corridor to return to a more productive historic condition. Competition between codominant and dominant trees will decrease and growth rates will increase while mortality rates decline. Over time, the crowns of larger more fire resistant trees will fill in, increasing the necessary shade for temperature regulation. Where available, canopy cover will be maintained at 50 percent on average, however this may range between 60 percent along fish bearing streams and 40 percent for non-fish bearing streams.

Proposed thinning, which will occur throughout most RHCAs within the Keddie Ridge Project area, would encourage forest growth and consequently hasten the development of larger trees and the subsequent recruitment of large woody debris to stream channels. Large woody debris is generally scarce throughout the RHCAs due to a shortage of old growth vegetation.

No change is expected in dissolved oxygen levels as they relate to treatments, since any newly created slash would be removed from stream courses within 48 hours after deposition. Thinning RHCAs adjacent to low velocity streams may actually improve oxygen levels by decreasing nutrient overloading from materials decaying in place. Most of the streams within the Keddie Ridge project are low to moderate velocity. In streams, the consumption of organic matter by bacteria requires oxygen. The amount of oxygen required for bacterial decomposition is the biochemical oxygen demand (BOD), a commonly used measure of water quality. When consumption by bacteria is high, oxygen levels in the water are reduced. Low oxygen levels can stress fish and other aquatic organisms.

Where RHCAs would be mechanically treated, ground based equipment would only be used on slopes less than or equal to 25 percent. RHCAs within sensitive areas (e.g., springs, seeps, and wetlands) could be entered with ground-based equipment 25 feet from the edge of the riparian area or wet perimeter of the soil, whichever is greatest. On slopes less than 15 percent, all mechanical equipment would be excluded from within 100 feet (horizontal) of fish bearing streams, 50 feet of perennial and intermittent streams, and 25 feet of ephemeral streams. On slopes between 15 and 25 percent, all mechanical equipment would be excluded from within 150 feet of fish bearing streams, 100 feet of perennial and intermittent streams, and 50 feet of ephemeral streams. In addition, skid trails will be located at angles to stream channels that minimize erosion into the channel, and skidders will only be allowed to back in to the outer RHCA on these skid trails. The mechanical exclusion zones would serve as effective filters and absorptive zones for potential sediment originating from upslope treatment areas. Removal of vegetation within these equipment exclusion zones would be allowed on a site-by-site basis to protect the sensitive attributes associated with the riparian area.

No ignition of prescribed fire would occur within 50 horizontal feet of all streams; however, backing fire would be allowed into these areas. Based on BMP evaluations completed on the Plumas National Forest over the last three years, short-term sediment delivery to streams after prescribed burning has not occurred (USDA 2007, 2008, 2009). Scorched conifers often drop needles following low or moderate severity fires. This needle cast provides ground cover that can help reduce rill and interrill erosion and sediment delivery (Pannkuk and Robichaud 2003). Additionally, the greater long-term benefit of treating these RHCAs is the potential protection from stand-replacing wildfire.

---

**Maintain or restore the stream channel integrity, channel processes, and sediment regime under which the riparian and aquatic ecosystems developed. Elements of the sediment regime include the timing, volume, and character of sediment input and transport.**

---

In addition to reducing the risk for high-intensity fires, thinning of the RHCA will allow the ecosystem within this corridor to return to a more stable historic condition. Historically, woody debris was a combination of

large and intermediate logs. Debris jams; especially log-jams of small material will alter the natural sediment regime. Small material decays at a faster rate; entrainment of sediments is short term as decaying logs fail. During peak events small material cannot hold sediment in place. Released sediment will affect timing, volume and character of the input. End cutting and scouring within the channel caused by heavy loading of dead and downed material will influence the timing, volume, and character of sediment being transported through the system.

Equipment induced ground disturbances would be limited because only slopes less than or equal to 25 percent would be entered with ground-based equipment. Retention of large diameter snags within RHCAs would occur. The green-line characteristics would not be compromised in RHCAs and thus stream channel and sensitive area integrity would be maintained.

---

**Maintain or restore instream flows to support desired riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges.**

---

Thinning of the RHCAs will reduce transpiration rates and interception. If transpiration rates are reduced, runoff and groundwater infiltration could increase. Interception of rain, snow and the subsequent evaporation also effects water availability. Reduction of the canopy cover and removal of conifers throughout the RHCA will initially reduce the interception of precipitation and possibly provide more water to meadows and wetlands. Runoff may increase in the short term. This additional water may increase baseflow to perennial streams and extend intermittent stream flow further into late spring or early summer.

The main objective is to reduce the potential for stand-replacing wildfires and thus retain the RHCA's desired riparian and aquatic habitats, effective stream channel function, and the ability to route flood discharges. In-stream flows would be assessed during equipment operations, with respect to drafting requirements.

Within RHCAs, the green-line would be preserved and remain unaffected by harvest activities. Within the immediate riparian areas, physical effects derived from in-channel large woody debris (LWD) would be sustained, as no natural in-channel debris would be removed. Future recruitment of LWD would be encouraged through release of the existing conifers, and the snag retention standards for channel morphology, channel function, and bank stability. The effect of water diversion on future instream flow is beyond the scope of this project.

---

**Maintain or restore the natural timing and variability of the water table in meadows and wetlands.**

---

Transpiration is a function of the density, root mass, and size of existing vegetation. If transpiration is reduced, then runoff and groundwater infiltration could increase. Interception of rain, snow and the subsequent evaporation also effects water availability. Reduction of the canopy cover and removal of conifers throughout the RHCA will provide more water to sensitive areas. This additional water will increase baseflow to perennial streams and extend intermittent stream flow further into late spring or early summer.

Activities proposed in the project area are not expected to negatively impact the timing and variability of water tables within sensitive areas. All RHCA sensitive riparian areas (springs, seeps, and wetlands) would be protected by a 25 foot buffer from the edge of the riparian area or wet perimeter of the soil, whichever is greatest and through the implementation of applicable best management practices (BMPs). Wet areas and green-lines would not be entered. Ground based equipment would only be allowed on stable soils and slopes less than or equal to 25 percent within RHCAs.

---

**Maintain or restore the diversity and productive nature of native and desired non-native plant communities in the riparian zone.**

---

Riparian areas are often hotspots for plant diversity. Riparian vegetation plays a vital role in the ecological functioning of the riparian system, which includes: stabilization of stream banks; delivery of large woody debris to stream habitats; filtration of sediment; and maintenance of water quality. Thinning of conifers and retention of all hardwood species within RHCAs would reduce competition and improve diversity of existing riparian plant communities.

If left untreated, noxious weeds can pose a significant threat to riparian communities due to their ability to displace native species. Implementation of standard management requirements (appendix H) and the proposed noxious weed treatment measures would reduce the risk of noxious weed spread into riparian areas and protect the diversity and productivity of riparian plant communities.

---

**Maintain or restore riparian vegetation to provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems.**

---

Large woody material adds structure to stream channels and creates fish habitat. It also provides habitat for small burrowing mammals and acts as a reservoir, retaining moisture throughout the summer months. A host of organisms, including several nonvascular plants, are supported by this moisture. Another benefit of large woody material is that it provides nutrients to the ecosystem over the long term through the process of decomposition.

Thinning of the RHCAs will return the project area to a level of stocking and health that is more closely related to its historic condition. While volume of wood per acre may be near historic levels, it is in the boles of numerous small, less fire resistant trees. Removing the ladder fuels will encourage the stand to return to its natural state and greatly enhance it by reducing competition for nutrients, water, and sunlight.

Within treatment units, the objective is to reduce overstocked fuel concentrations. Thinning within RHCAs may release the residual conifers and deciduous trees thus stimulating growth. LWD retention standards would be implemented. Potential recruitment of LWD into the stream channel would be retained and enhanced. There would be a reduction in the potential for stand-replacing wildfire, and therefore a greater potential of LWD retention. Prescribed underburns would occur during times of elevated moisture, resulting in less LWD consumption.

---

**Maintain or restore habitat to support populations of well-distributed native and desired non-native plant, vertebrate, and invertebrate populations that contribute to the viability of riparian plant communities.**

---

Living plants provide shade; their root systems promote bank stability and create macro-pores that promote high infiltration rates. The decomposition of plant material contributes to soil matter and composition, provides nutrients, and water storage. During thinning of the RHCAs, measures will be applied to insure ground cover levels are maintained and vegetation providing stability to channel banks is not removed. Riparian zones (specifically the green-line) and wetted soil perimeters would be identified and protected from harvest activities. Impacts would further be reduced by the application of BMPs and standard management requirements.

Vertebrates that influence the viability of riparian plant communities include pocket gophers, moles, butterflies, bats, and ground squirrels. Thinning of RHCAs will have no detrimental effect on these species, thus their populations will continue to maintain the viability of riparian plant communities.

Invertebrates contribute to the viability of riparian plant communities in many ways. They act as decomposers, shredding dead plant materials and they burrow into woody debris. Invertebrates recycle

nutrients and influence soil structure. They improve soil porosity and improve oxygen-penetrating capabilities. To maintain invertebrate populations, compaction and ground cover disturbance will be minimized through the use of low ground pressure equipment and the subsoiling of the final 200 foot approaches of skid trails to landings.

Noxious weed species have the potential to affect riparian plant species indirectly through allelopathy (the production and release of plant compounds that inhibit the growth of other plants) (Bais et al. 2003), as well as through direct competition for nutrients, light, and water (Bossard et al. 2000). Implementation of standard management requirements (appendix H) and the proposed noxious weed treatment measures would reduce the risk of noxious weed spread into riparian areas and protect the viability of riparian plant communities.

---

**Maintain or restore riparian vegetation to provide adequate summer and winter thermal regulation within the riparian and aquatic zones.**

---

Summer and winter thermal regulation within the riparian and aquatic zones would be maintained. Canopy cover within the RHCAs would be maintained at 50 percent on average, however this may range between 60 percent along fish bearing streams and 40 percent for non-fish bearing streams. Activities proposed in the project area are not expected to negatively impact riparian vegetation. Group selection harvest would only occur outside of RHCAs.

---

**Maintain or restore riparian vegetation to help achieve rates of surface erosion, bank erosion, and channel migration characteristics of those under which the desired communities developed.**

---

Riparian vegetation will be protected and maintained while coniferous ladder fuels are thinned. Except at designated crossings, stream banks will not be impacted by equipment and it is not expected that bank erosion will be accelerated either by equipment or by the implementation of the project. Thinning RHCAs will promote diversity and increase production of riparian communities. Burning of isolated burn piles outside of the RHCA will remove groundcover at point locations, but soil moving from these points will be trapped by ground cover immediately adjacent to the piles.

The maximum erosion hazard for soil types within the project area, ranging from moderate to very high, suggests that channel development has occurred under significant sediment loads. The riparian green-line of stream channels would not be impacted by the proposed management activities, and natural recovery processes within the streamside area would help moderate stream temperatures. Riparian vegetation may increase in vigor due to increased water yield and available sunlight. Within the immediate riparian areas, the physical effects derived from in-channel LWD would be retained, as no natural debris would be removed. Future recruitment of LWD, which is structurally important for channel morphology, channel function, and bank stability, would be encouraged through snag retention requirements and release of existing live conifers.

---

**Maintain and restore riparian and aquatic habitats necessary to foster the unique genetic fish stocks that evolved within that specific geo-climatic ecoregion.**

---

Maintenance of the riparian habitat necessary to foster unique genetic fish stocks will be accomplished by prescribing treatments that will maintain bank stability, ground cover, and sufficient shade. In all the action alternatives, no mechanical treatment will occur in the first 100 feet of all fish bearing streams.

It is expected that all action alternatives would not substantially impact fish populations within or downstream of the Keddie Ridge Project area. The best opportunity to improve channel conditions and fish habitat along these streams is through the proposed road decommissioning and the improvement of road drainage systems that are adjacent to stream channels.

## **3 KEDDIE RIDGE STANDARD OPERATING PROCEDURES**

### **3.1 WILDLIFE AND FISHERIES**

The wildlife and fisheries standard management requirements (SMRs) are contained in the Keddie Ridge Hazardous Fuels Reduction Project Wildlife Biological Assessment/Biological Evaluation. This report is part of the Keddie Ridge Hazardous Fuels Reduction Project (Keddie Ridge Project) record on file at the Mt. Hough Ranger District; a copy is available upon request.

### **3.2 BALD EAGLE**

A Limited Operating Period (LOP) would be implemented not allowing area thinning treatments in the Round Valley bald eagle territory (units 75 and 75a) between January 1 and August 15 along National Forest System (NFS) road 26N19. No log haul is to occur on this road during the LOP.

### **3.3 CALIFORNIA SPOTTED OWL**

Limited Operating Periods (LOPs) would be implemented within 0.25 mile of treatment units for active nests identified during present and future surveys or incidental detections. An LOP would also be applied to haul routes within 0.25 mile of an active nest from March 1 to August 15. LOPs are expected to reduce impacts from increased human activity and vehicle and equipment noise. Disturbance would be limited to individual treatment units and would last a few days to two weeks in any location.

### **3.4 NORTHERN GOSHAWK**

Limited Operating Periods (LOPs) would be implemented for treatment units and haul roads within 0.25 mile of active nest sites from February 15 to September 15. The LOPs are expected to eliminate effects from increased human activity and vehicle and equipment noise. If new northern goshawk activity centers, such as nests or young, are detected in future surveys or project activities, protected activity centers (PACs) would be delineated and applicable resource protection measures (such as LOPs) would be applied.

### **3.5 MOUNTAIN YELLOW-LEGGED FROG**

1. Slash piles would be ignited using a pattern that allows frogs to escape the fire. For example, piles would be lit at one end and an area would be left unlit in order to serve as an escape route.
2. Water drafting sites would be located and managed to minimize adverse effects on sedimentation and in-stream flows required to maintain riparian resources, channel condition, and amphibian habitat. Forest personnel and contractors would use the Forest Service approved suction strainer (FGM 5161) or other foot valves with screens having openings less than 2mm in size at the end of drafting hoses. Drafting sites would be visually surveyed for frogs and their eggs before drafting begins. The suction strainer would be inserted close to the substrate in the deepest water available; the suction strainer would be placed on a shovel, over plastic sheeting, or in a canvas bucket to avoid substrate and amphibian disturbance (the Water Drafting Plan is available elsewhere in this appendix).
3. Effectiveness monitoring of all applicable best management practices (BMPs) would occur for all prescribed burns or fuels management projects.

4. The Forest would prevent underburns or broadcast burns from entering riparian vegetation within identified suitable habitat, as delineated by the presence of riparian vegetation. Methods include the timing of ignition, ignition pattern, wet line, use of natural barriers, line construction or other methods that prevent the burn from entering riparian vegetation. If fire lines are employed, they would not be wider than 36 inches, unless they already exist.

### 3.6 HYDROLOGY AND SOILS

The hydrology and soils standard management requirements (SMRs) are displayed in the Keddie Ridge Hazardous Fuels Reduction Project Watershed Report. This report is part of the Keddie Ridge Project record on file at the Mt. Hough Ranger District; a copy is available upon request.

Water quality would be protected through the use of BMPs (USDA 2000). BMPs are the primary method employed by the Forest Service and the State of California to prevent water quality degradation and to meet California State water quality objectives relating to nonpoint sources of pollution. BMPs were incorporated in the design of the action alternatives and are listed under the regulatory framework (Table C-13).

**Table C-13 Best Management Practices (BMPs)**

Resource Concern	Standard Management Requirements		Responsible Person(s)	Timeframe
<b>Implement Best Management Practices (BMPs):</b>				
<b>Timber Management Practices</b>				
Wildlife Fish Soils Hydrology	1.1	Planning Process	Prep Officer and Timber Sale Administrator (TSA)	Prior and During Treatment
	1.2	Timber Harvest Area Design		
	1.3	Use of Erosion Hazard Rating (EHR) for Timber Harvest Area		
	1.4	Use of Sale Area Maps for Designating Water Quality Protection Needs		
	1.5	Limiting the Operating Period of Timber Sale Activities		
	1.6	Protection of Unstable Lands		
	1.8	Streamside Management Zone Designation		
	1.9	Determining Tractor Loggable Ground		
	1.10	Tractor Skidding Design		
	Wildlife Fish Soils Hydrology	1.11		
1.12		Log Landing Location		
1.13		Erosion Prevention and Control Measures During Timber Sale Operations		
1.14		Special Erosion Prevention Measures On disturbed Land		
1.15		Re-vegetation of Areas Disturbed by Harvest		
1.16		Log Landing Erosion Prevention and Control		
1.17		Erosion Control on Skid Trails		
1.18		Meadow Protection During Timber Harvesting		
1.19		Streamcourse Protection		
1.20		Erosion Control Structure Maintenance		
1.21		Acceptance of Timber Sale Erosion Control Measures Before Sale Closure		
1.22		Slash Treatment in Sensitive Areas		
1.23		Five-Year Reforestation Requirement		
1.25		Modification of the Timber Sale Contract		

**Table C-13 Best Management Practices (BMPs)**

Resource Concern	Standard Management Requirements		Responsible Person(s)	Timeframe			
<b>Road and Building Site Construction Practices</b>							
Wildlife Fish Soils Hydrology	2.1	General Guidelines for the Location And Design Of Roads	Prep Officer and Timber Sale Administrator (TSA)	Prior and During Treatment			
	2.2	Erosion Control Plan					
	2.3	Timing of Construction Activities					
	2.4	Stabilization of Road Slope Surfaces and Spoil Disposal Areas					
	2.5	Road Slope Stabilization					
	2.6	Dispersion of Subsurface Drainage from Cut and Fill Slopes					
	2.7	Control of Road Drainage					
	2.8	Timely Erosion Control Measures on Incomplete Roads and Streamcrossing Projects					
	2.9	Timely Erosion Control Measures on Incomplete Roads and Streamcourses					
	2.10	Construction of Stable Embankments (fills)					
	2.11	Control of Sidecast Material					
	2.12	Servicing and Refueling of Equipment (similar to BMP 7.4 - Oil and Hazardous Substance Spill Contingency Plan and Spill Prevention Control and Countermeasure [SPCC] Plan)					
	2.13	Control of Construction in Streamside Management Zones (the riparian habitat conservation areas [RHCAs])					
	2.14	Controlling In-channel Excavation					
	2.15	Diversion of Flows Around Construction Sites	Prep Officer and Timber Sale Administrator (TSA)	and During Treatment			
	2.16	Streamcourses on Temporary Roads					
	2.17	Bridge and Culvert Installation (disposition of Spoil Materials and Protection of Fisheries)					
	2.19	Disposal of Right-of-way and Roadside Debris					
	2.20	Specifying Riprap Composition					
	2.21	Water Source Development Consistent with Water Quality Protection					
	2.22	Maintenance of Roads					
	2.23	Road Surface Treatment to Prevent Loss of Materials					
	2.24	Traffic Control During Wet Periods					
	2.26	Obliteration or Decommissioning of Roads					
	<b>Vegetation Manipulation Practices</b>						
	Wildlife Fish Soils Hydrology	5.2			Slope Limitations for Mechanical Equipment Operations	Prep Officer and Timber Sale Administrator (TSA)	Prior and During Treatment
5.3		Tractor Operation Limitation in Wetlands and Meadows					
5.5		Disposal of Organic Debris					
5.6		Soil Moisture for Mechanical Equipment Operations					
<b>Watershed Management Practices</b>							
Wildlife Fish Soils Hydrology	7.3	Protection of Wetlands	Prep Officer and Timber Sale Administrator (TSA)	Prior and During Treatment			
	7.4	Oil and Hazardous Substance Spill Contingency Plan and Spill Prevention Control and Countermeasure (SPCC) Plan					
	7.8	Cumulative Off-site Watershed Effects					

Site-specific measures that relate directly to these BMPs would be used on the Keddie Ridge Project to minimize erosion and resultant sedimentation. The BMPs would also be used to minimize negative changes in other water quality parameters such as dissolved oxygen, water temperature, and turbidity. These measures follow the Scientific Analysis Team (SAT) guidelines for areas adjacent to stream courses, lakes and wetland areas, and streamside guidelines presented in the Plumas National Forest Land and Resource Management Plan (the Forest Plan). Protection and improvement measures would include minimizing disturbance of riparian habitat conservation areas (RHCAs), retention of snags for wildlife, stream shading, recruitment of large organic debris in stream channels, maintenance of side slope and stream channel stability, and prevention of an over accumulation of activity-generated organic debris in stream channels. Timber sale contracts contain many standard provisions that help ensure protection of soil and water resources. These include provisions for an erosion control plan, road maintenance, and skid trail spacing—see the “Standards and Guidelines for RHCAs” section below for a list. The following measures, which were incorporated in the design of the action alternatives, would further reduce the risk of cumulative and local impacts on water quality and channel stability.

Soil protection measures are described below. Incorporate the following practices into the project design:

1. Unless otherwise agreed to by the physical scientist and sale administrator, landings, skid trail approaches to landings (to a distance of 200 feet), and new temporary roads would be subsoiled through the full depth of compaction to restore soil porosity. The subsoiler would be lifted where substantial root and bole damage to larger trees would occur from subsoiling. Subsoiling would not occur on shallow soils where the displacement of rocks disrupts soil horizons or where there are concerns about the spread of root disease, or damage to tree roots. Vehicle access to temporary roads would be blocked and water bars would be installed prior to subsoiling operations.
2. Ground-based equipment would be restricted to slopes less than 35 percent.
3. Subsoiling to 18 inches minimum depth would occur on temporary roads and landings within the same year as harvest.
4. Trails would be spaced an average of 100 feet. Though larger spacing is typically recommended, the 100 foot spacing may actually reduce off trail harvest traffic.

Implement the following wet weather standards in all mechanically treated units:

1. Operations may occur when soil is dry; that is, in the spring when soil moisture in the upper 8 inches is not sufficient to allow a soil sample to be squeezed and hold its shape, or will crumble when the hand is tapped. In the summer and early fall after storm event(s) when soil moisture between 2-8 inches in depth is not sufficient to allow a soil sample to be squeezed and hold its shape, or will crumble when the hand is tapped.
2. Winter operations may occur only when the ground is frozen to a depth of 5 inches or over 8 inches of well packed snow.

### **3.6.1 Water Drafting Plan**

1. New or existing water draft sites would be evaluated with the Mt. Hough district biologist prior to changes or use. Drafting sites shall be visually surveyed for amphibians and their eggs before drafting begins.
2. “Mucked out” debris, bedload sediment, etc. shall be transported to an appropriate disposal site (to be designated) if no apparent site is feasible.

3. Maximum draw-down volumes would be estimated prior to use of the draft site. Minimum pool sites would be maintained during drafting using measurements such as staff gauges, stadia rods, tape measures, etc.
4. Back down ramps would be constructed and or maintained to ensure the streambank stability is maintained and sedimentation is minimized. Rocking, chipping, mulching, or other effective methods are acceptable in achieving this objective. As necessary, earthen or log berm, straw waffle, certified hay or rice straw bale berms, or other containment structures would be constructed at the bank full water line to protect the stream bank.
5. Forest personnel and contractors shall use the Forest Service approved suction strainer (FGM 5161) or other foot vales with screens having openings less than 2mm in size at the end of drafting hoses. The suction strainer shall be inserted close to the substrate in the deepest water available; the suction strainer shall be placed on a shovel, over plastic sheeting, or in a canvas bucket to avoid substrate and amphibian.

### 3.6.2 Streamside Management Zones

As defined by the Plumas National Forest Land and Resource Management Plan (the Forest Plan), the streamside management zone (SMZ) is the land adjoining a stream channel that is managed to meet water quality and riparian objectives. This zone harbors the most complex biotic communities within the National Forest System (NFS). The management of these communities is particularly challenging, for their high diversity and inherent values demand a sound understanding of the natural processes involved as well as a commitment by management to perpetuate these values. Important qualities associated with the streamside environment include its unique visual character, abundant and diverse wildlife, timber producing capabilities, and recreational opportunities, in addition to its ability to maintain and improve water quality.

Wildlife utilize the riparian environment disproportionately more than other habitat types. Here the microclimate is measurably different from the surrounding forest, grassland, or brushland. Air temperature, relative humidity, wind speed, and radiation are moderated, creating a unique environment available to wildlife. Within this environment, food, cover, and water, are in close proximity, maximizing the density and diversity of wildlife. In addition, the streamside zone along permanent and intermittent streams provides migration routes and travel corridors, serving as a forested connector between forest habitats.

The streamside environment also enhances plant species diversity and fosters high plant biomass production. SMZs are well noted as a premium-growing site for timber. Conifers grow rapidly in these environs and intense shade encourages the growth of good quality timber. Plant species diversity is high and many plants are unique to the moist environments of the streamside area. Botanical interest is acute in these areas.

The streamside area also serves as a moderator of stream temperature and as a filter for sediments originating within or beyond the streamside zone. The vegetation growing here anchors geologic instabilities and secures the stream channel, while downed logs lying across the stream channel dissipate the energy of flowing water, enhancing stream stability. Given water of good quality and a healthy streamside environment, recreational opportunities are numerous. Quality recreational experiences can include swimming, fishing, hiking, aesthetics appreciation, and historical appreciation.

### 3.6.3 Standards and Guidelines for RHCAs

SAT developed standards and guidelines that address the types of management activities that are allowed in RHCAs. In general, these standards and guidelines prohibit activities in RHCAs that are not designed

specifically to improve the structure and function of the RHCA and benefit fish habitat. Further, for areas where riparian conditions are presently degraded, management activities must be designed to improve habitat conditions.

The standards and guidelines that follow apply directly to this project. For a complete description of standard and guidelines for RHCAs, refer to Appendix L of the Herger-Feinstein Quincy Library Group Forest Recovery Act Final Environmental Impact Statement (HFQLG EIS). In addition, watershed and riparian area management on National Forest System (NFS) lands is guided by a variety of direction, including BMPs, Land and Resource Management Plans, Forest Service manuals and handbooks, and other plans and directives.

### **3.7 TIMBER MANAGEMENT**

**TM-1.** Prohibit scheduled timber harvest, including fuelwood cutting, in RHCAs. Allow unscheduled harvest only as described in TM-2 and TM-3.

**TM-2.** Where catastrophic events such as fire, flooding, volcanic eruptions, severe winds, or insect or disease damage result in degraded riparian conditions, allow unscheduled timber harvest (salvage and fuelwood cutting) to attain RMOs. Remove salvage trees only when site-specific analysis by an interdisciplinary team determines that present and future woody debris needs are met and other RMOs are not adversely affected.

**TM-3.** Design silvicultural prescriptions for RHCAs and allow unscheduled harvest to control stocking, reestablish and culture stands, and acquire desired vegetation characteristics needed to attain RMOs.

### **3.8 ROADS MANAGEMENT**

**RF-1.** Keep road and landing construction in RHCAs to a minimum. No new roads or landing would be constructed in RHCAs until watershed, transportation, and geotechnical analyses are completed.

Appropriate standards for road construction, maintenance, and operations would be developed from this analysis to ensure that RMOs are met. Valley bottom and mid-slope road locations may be used only when this analysis indicates that roads can be constructed and maintained in these locations and meet RMOs.

**RF-2.** Require that all roads on NFS lands, including those operated by others, are maintained and operated in a manner consistent with the planned uses and with meeting RMOs.

**RF-5.** Locate design, construct, maintain, and operate roads to minimize disruption to natural hydrologic flow paths. This includes road-related activities that would divert streamflow and/or interrupt surface or subsurface flow paths.

**RF-6.** Apply design construction, and maintenance procedures to limit sediment delivery to streams from the road surface. Outsloping of the roadway surface is preferred unless outsloping would increase sediment delivery to streams or where outsloping is infeasible. Road drainage would be routed away from potentially unstable channels and hillslopes.

**RF-7.** Construct, reconstruct, and maintain all road crossings of existing and historic fish-bearing streams to provide for fish passage.

**RF-9.** Designate sites to be used as water drafting locations during project-level analysis, or as part of road maintenance for fire management planning. Do not locate drafting sites where instream flows could become limiting to aquatic organisms. During periods of low flow, examine the drafting site and decide if

water can continue to be extracted from that site. Design, construct, and maintain water drafting sites so they would not destabilize stream channels or contribute sediment to streams.

**RF-10.** Prohibit sidcasting of loose material in RHCAs during construction or maintenance activities.

### 3.8.1 General Riparian Area Management

**RA-1.** Exclude heavy equipment from RHCAs, unless specifically approved for road construction and maintenance, or unless an interdisciplinary team finds that proposed activity is needed to meet the RMOs.

**RA-2.** Fell hazard trees only when they are found to pose an unacceptable safety risk. Such trees may be removed from RHCAs only when adequate sources of woody debris remain to meet RMOs. If long- term sources of woody debris are inadequate, and a tree is found to pose an unacceptable safety risk, that risk must be reduced in a way that contributes to woody debris objectives.

### 3.8.2 Project Specific RHCA Design Criteria

Management activities in RHCAs must contribute to improving or maintaining watershed and aquatic habitat conditions described in the RMOs. Equipment restriction zones in RHCAs, would be implemented according to the following tables:

**Table C-14 Design Criteria for RHCAs**

Criterion	Actions
RHCA Equipment constraints	No mechanical equipment operations on slopes steeper than 25 percent. Establish equipment exclusion zones adjacent to stream channels according to table 2-24 below. Allow equipment to travel into the outer RHCA zone to harvest trees and bring them to skid trails. Locate skid trails at angles to stream channels that minimize erosion into the channel, and allow skidders to back in to the outer RHCA on these skid trails. To minimize soil displacement, no equipment would be permitted to turn around while off a skid trail in RHCAs. Allow hand thinning and hand piling in areas where equipment is excluded.
Diameter constraints	Within mechanical harvest areas, implement a 20-inch upper diameter limit, except where needed for operability. Minimize damage to trees larger than 20 inches dbh as much as practicable. In equipment exclusion zones, implement an 8-inch upper diameter limit on hand thinning treatments.
Residual species preference	Where present, retain all hardwood and riparian species. Retain the largest, most vigorous dominant and codominant trees to create a residual stand that would be comprised of larger fire-resilient trees. Species preference would be determined by forest type. In general, prefer to retain shade-intolerant species including rust-resistant sugar pine, black oak, ponderosa and Jeffrey pine, and Douglas-fir.
Snag retention	Retain the number of snags per acre appropriate for each forest type unless removal is required to allow for operability. In Sierra mixed conifer types and ponderosa pine forest types, retain four of the largest snags per acre. In the red fir forest type, retain six of the largest snags per acre. Snags larger than 15 inches dbh and 20 feet in height would be used to meet this guideline.
Burn constraints	Establish pile burning exclusion zones (see table 2-25 below) adjacent to stream channels, according to the table below. Locate burn piles away from riparian vegetation to reduce the potential for scorch where feasible. Active ignition for prescriptive underburning would be minimized within 50 feet of perennial channels and 25 feet of ephemeral and intermittent channels. Backing fires would be used to minimize scorch of riparian vegetation within these buffers.
Fireline	Construct firelines using hand crews around areas to be underburned or pile burned, as needed, Incorporate existing roads, landings, skid trails, rock fields, bare areas, and other features into containment lines where logical and feasible.
Residual surface fuels	Maintain adequate cover of surface fuels, litter, duff, and large woody debris to maintain habitat values, reduce potential erosion, and meet soil standards for woody debris and ground cover.

**Table C-14 Design Criteria for RHCAs**

Criterion	Actions
	<p>Retain surface fuels (less than 12 inches diameter) at a level that would result in projected flame lengths of less than 4 feet under 90th percentile weather conditions. This generally corresponds to approximately 5 tons or less of surface fuels per acre, or a fuel model 8 or 9, depending on the forest type. Fuel model 8 and 9 are representative of the desired condition for surface fuels for fir dominated and pine dominated stands, respectively.</p> <p>Retain large woody debris (greater than 12 inches diameter): Where they exist, retain 10 to 15 tons per acre of the largest down logs. Where needed, machine pile and burn extensive areas of deadfall, where feasible, in terms of equipment operability and reduced chance of excessive scorch-related mortality upon burning of these piles.</p> <p>Based on post treatment evaluations, underburn, jackpot burn, machine pile and burn, and/or hand pile and burn to treat natural and activity-generated fuels.</p>
Fish passage improvement	Reclaim fish passage and habitat by improving or replacing culverts at specific locations where roads cross streams.

**Table C-15 Scientific Analysis Team (SAT) Guidelines for RHCA Buffer Widths Based on Stream Type**

Stream Type	Prescribed Stream Buffer Widths
Perennial, fish bearing <sup>1</sup>	300 feet
Perennial, non- fish bearing <sup>2</sup>	150 feet
Intermittent <sup>3</sup>	100 feet
Ephemeral <sup>3</sup>	100 feet

<sup>1</sup>-Perennial fish bearing streams and lakes.  
<sup>2</sup>-Perennial non-fish bearing streams, ponds, wetlands greater than 1 acre, and lakes.  
<sup>3</sup>-intermittent and ephemeral streams, wetlands less than 1 acre, and landslides.  
Source: USDA 1999b, page 2-11

Table C-15 displays the Scientific Analysis Team guidelines for RHCA buffer widths based on stream type. For the Keddie Ridge Project, the above listed widths would be the maximum buffer width identified for each stream type. Ponds, reservoirs, and wetlands greater than one acre in size would be protected by a RHCA width of 150 feet, springs and seeps less than one acre in size would be protected by a RHCA width of 100 feet, measured from the outer edge of the feature. SMZ widths would be 50 feet for those stream segments that are not classified as RHCAs, but require protection from equipment to ensure the integrity of subsurface flow is maintained. These channels, commonly referred to as ‘swales’, do not show indications of annual scour or deposition. Table 4 below displays an additional buffer (inner buffer or equipment exclusion zone) within the RHCA and within the SAT guideline buffer identified above.

For example, there is a perennial fish bearing stream within a treatment unit; a 300 foot buffer is applied. Within that 300 foot buffer, approximately 70 feet from the edge of the active channel, the slope is 22 percent; a 150 foot inner buffer is applied. From the edge of the active channel no equipment can enter the RHCA for 150 feet. Equipment can enter the remaining 150 feet of the 300 foot maximum buffer.

When the slope within the SAT guideline buffer is greater than 25 percent, no mechanical equipment is allowed to enter the RHCA (Table C-16). For example, there is a perennial stream within a treatment unit; a 300 foot buffer is applied. Within that 300 foot buffer, approximately 100 feet from the edge of the active channel, the slope is 32 percent; no equipment is allowed within any portion of the 300 foot buffer.

**Table C-16 Equipment Exclusion Zones in RHCAs**

Stream Type	Slope Class		
	0-15% (feet)	15%-25% (feet)	Greater Than 25%
Perennial, fish bearing	100	150	No mechanical equipment allowed
Perennial, no fish	50	100	No mechanical equipment allowed
Intermittent	25	50	No mechanical equipment allowed
Ephemeral	25	25	No mechanical equipment allowed
Reservoirs/wetlands greater than 1 acre	50	75	No mechanical equipment allowed

Within the SAT guideline buffer, a project specific distance (feet) is applied to the placement of piles for future burning (Table C-17). For example, there is an ephemeral stream within a treatment unit; a 100 foot buffer is applied. Within that 100 foot buffer, approximately 70 feet from the active stream channel, the slope is 26 percent. First, no mechanical equipment is allowed within any portion of the 100 foot buffer (Table C-16). Second, piles must be placed 15 feet from the center of the stream bed (Table C-17). Distances shown would apply to each side of the stream channel and are based on stream type and slope steepness.

**Table C-17 Pile Burning Exclusion Zones in RHCAs**

Stream Type	Slope Class	
	0-15% (feet)	Greater Than 15% (feet)
Perennial	25	40
Intermittent	15	25
Ephemeral	15	15
Reservoirs/wetlands greater than 1 acre	15	25

Note: Where feasible, burn piles would not be placed any closer to streams than the distances shown in this table.

### 3.9 BOTANICAL RESOURCES AND NOXIOUS WEEDS

The SMRs for botanical resources and noxious weeds, as well as the associated site-specific maps, are provided in the Biological Evaluation, Noxious Weed Risk Assessment, and the Plant Protection Plan for the Keddie Ridge Project. These reports are part of the Keddie Ridge Project record, which is on file at the Mt. Hough Ranger District and available upon request.

#### 3.9.1 Botanical Resources

Table C-18 identifies those sensitive plant species that would be protected under all action alternatives through the designation of control areas. No herbicide applications or ground-disturbing activities would occur within any of the control areas. Limited prescribed fire activities and some hand thinning treatments would be allowable within some of the control areas identified below.

**Table C-18 Sensitive Plant Species Within Designated Control Areas**

Species	Control Area Locations	Restrictions
<i>Arabis constancei</i> (Constance's rock cress)	Units: 64 and 71	Prohibit ground disturbing activities (such as mechanical thinning, group selection harvest, construction of fireline, etc.) within control areas; hand thinning treatments would be allowed. Pile slash at a sufficient distance (i.e. 20 feet or greater) to protect individual plants and the seedbank from excessive heat.
<i>Cypripedium fasciculatum</i> (clustered lady's-slipper)	Units: 51, 52, 54, 55, 66, 67, and 68	Prohibit ground disturbing activities (such as mechanical thinning, group selection harvest, construction of fireline, etc.) within control areas; hand thinning treatments would be allowed. Manipulate fuels within control areas to reduce impacts to individuals during prescribed fire treatments. Pile slash at a sufficient distance (i.e. 20 feet or greater) to protect individual plants and the seedbank from excessive heat.
<i>Lupinus dalesiae</i> (Quincy lupine)	Units: 78a, 78b, and 89	Allow hand thinning and prescribed fire treatments within control areas. Construct hand piles at least 20 feet from plants to protect individuals and the seedbank from excessive heat.
<i>Oreostemma elatum</i> (Plumas alpine-aster)	Units: 11 and 66	Prohibit all ground disturbing (such as mechanical thinning, group selection harvest, construction of fireline, etc.) activities within control areas; prescribed fire treatments would be allowed.

### 3.9.2 Noxious Weeds

The following noxious weed SMRs were developed in accordance with the direction provided in Table 2.4 of the HFQLG EIS to reduce the introduction and spread of noxious weeds on NFS lands.

**Cleaning Off-Road Equipment.** Require all off-road equipment and vehicles (Forest Service and contracted) used for project implementation to be free of weeds. Clean all equipment and vehicles of all mud, dirt, and plant parts. This would be done at a vehicle washing station or steam-cleaning facility before the equipment and vehicles enter the project area. Cleaning is not required for vehicles that would stay on the roadway. All off-road equipment must be cleaned *prior to leaving designated weed units* if weeds are present at the time of implementation and are unavoidable.

**Staging Areas.** Do not stage equipment, materials, or crews in noxious weed-infested areas where there is a risk of spread to areas of low infestation.

**Control Areas.** Where feasible, noxious weed locations would be designated as control areas, where equipment and soil-disturbing project activities would be excluded. These areas would be identified on project maps and delineated in the field with day-glow orange noxious weed flagging. If avoidance is not possible, off-road equipment would be cleaned prior to leaving the designated weed unit.

**Road Construction, Reconstruction, and Maintenance.** All earth-moving equipment, gravel, fill, or other materials need to be weed free. Onsite sand, gravel, rock, or organic matter would be used where possible.

**Revegetation.** If skid trails, landings, or stream crossings require soil stabilization, weed-free equipment, mulches, and seed sources would be used. On-site material would be chipped to use as mulch to the extent possible. If mulch is imported to the site use weed free rice straw (preferred) or certified weed free straw. Avoid seeding in areas where revegetation would occur naturally, unless noxious weeds or erosion are a concern. Save topsoil from disturbance and put it back to use in onsite revegetation, unless contaminated with noxious weeds. All activities that require seeding or planting would need to use locally collected native seed sources or those identified by the Botanist. A seed mix would be developed when specific site locations and conditions (dry, moist, wet, etc.) are determined.

## **3.10 HERITAGE RESOURCES**

These heritage SMRs are displayed in the Keddie Ridge Hazardous Fuels Reduction Project Heritage Resource Inventory Report. This report is part of the Keddie Ridge Project record on file at the Mt. Hough Ranger District; a copy is available upon request.

1. All proposed activities, facilities, improvements, and disturbances would avoid heritage resource sites. "Avoidance" means that no activities associated with the project that may affect heritage resource sites would occur within a site's boundaries, including any defined buffer zones. Portions of the project may need to be modified, redesigned, or eliminated to properly avoid heritage resource sites.
2. All heritage resource sites within the area of potential effect would be clearly delineated prior to implementing any associated activities that have the potential to affect heritage resource sites.
3. Buffer zones may be established to ensure added protection where the Forest or District archaeologist determines that they are necessary. The use of buffer zones in conjunction with other avoidance measures are particularly applicable where setting contributes to the property's eligibility under 36 CFR 60.4, or where it may be an important attribute of some types of heritage resource sites (e.g., historic buildings or structures; historic or heritage properties important to Native Americans). The size of buffer zones needs to be determined by the Forest or District archaeologist on a case-by-case basis.
4. When any changes in proposed activities are necessary to avoid heritage resource sites (e.g., project modifications), these changes would be completed prior to initiating any activities.
5. Monitoring during project implementation, in conjunction with other measures, may be used to enhance the effectiveness of protection measures.
6. If heritage resources are inadvertently discovered during project implementation, the Mt. Hough Ranger District archaeologist would be contacted immediately. The heritage resources would be recorded, clearly delineated, and protected.

### **3.10.1 Treatment Implementation**

Pre-existing skid trails and landings would be used whenever available, feasible, and in a desirable location. In order to avoid loss of land base productivity, no more than 15 percent of timber stands would be dedicated to landings and permanent skid trails (USDA 1988). In areas where pre-existing skid trails and landings are not present, construction of such facilities would occur as agreed upon by the Forest Service and purchaser. All landings and skid trails utilized would conform to the standards and guidelines set forth in the Timber Sale Administration Handbook (FSH 2409.15) and the Forest Plan.

## **3.11 MONITORING**

### **3.11.1 Soils**

The Forest Plan sets out objectives and protocol for monitoring of plan standards and guidelines, BMP compliance and effectiveness, and soil productivity parameters. Monitoring is to be completed by Forest staff on a per annum basis, either project by project, or a sampling of projects. Sampling should include at least five units each on granite and metasedimentary rock soils for a total of ten units for implementation monitoring. Specific methods would be defined by district watershed personnel. In addition, effectiveness and forensic monitoring would occur on watersheds that exceed the threshold of concern, as required by

California Central Valley Regional Water Quality Control Board Resolution R5-2005-0052, “Conditional Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities”.

### **3.11.2 Heritage Resources**

Monitoring during project implementation, in conjunction with other measures, may be used to enhance the effectiveness of protection measures.

### **3.11.3 Aquatic Wildlife**

Stream condition inventory, including rapid bioassessment: Stream habitat features are measured according to the stream condition inventory (SCI) manual. The following streams are monitored within the Watershed Analysis Area: Little Antelope Creek, Clark’s Creek, Boulder Creek (just outside), Lone Rock Creek, Upper Moonlight Creek, Light’s Creek, Hungry Creek and Cold Stream. Upper Moonlight, Lights Creek, and Lone Rock Creek have been monitored post fire in 2008 and would be completed the first year after the proposed project implementation and monitored every five years thereafter.

### **3.11.4 Noxious Weeds**

Monitoring during and after project implementation would be used to assess the effectiveness of the SMRs and the control measures at preventing the introduction and spread of noxious weed species in the project area. The measurement indicators described in this analysis—for example, the number of existing infestations and the number of acres treated—would be used in this assessment. Post-treatment monitoring would identify the need for follow-up treatment, assess the effectiveness of the different treatment methods, and/or identify the need for alternative methods of control. Monitoring would be conducted by District personnel during and following project implementation and is expected to greatly reduce the likelihood of uncontrollable weed spread in the Keddie Ridge Project area.

### **3.11.5 Range**

End of season use monitoring is done at the designated monitoring area for the Lights Creek Allotment at Indicator Meadow each year at the end of the growing season. Indicator Meadow is outside of the treatment area. There is no range monitoring done within the treatment area because livestock use is limited, there is no meadow, nor ‘C’ channels within the treatment areas. End of season use monitoring includes: bank alteration; percent meadow use, and percent use of riparian shrubs.



# **Appendix D**

---

**Renewal of Conditional Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvesting Activities**



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

**ORDER NO. R5-2014-0144**

**RENEWAL OF CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES RELATED TO TIMBER HARVESTING ACTIVITIES**

The California Regional Water Quality Control Board, Central Valley Region, (Central Valley Water Board) finds that:

1. California Water Code (Water Code) section 13260, subdivision (a) requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate regional water board a report of waste discharge containing such information and data as may be required by the board and the first annual fee applicable to waste discharge requirements, unless the State Water Board or Central Valley Water Board waives such requirement.

2. Water Code section 13269, subdivision (a) provides that a regional water board or the State Water Resources Control Board (State Water Board) may waive the requirements to submit a report of waste discharge and to obtain waste discharge requirements as to a specific discharge or specific type of discharge, if the board determines that the waiver is consistent with any applicable water quality control plan and such waiver is in the public interest. Water Code section 13269 further provides that any such waiver of waste discharge requirements shall be conditional, may not exceed five years in duration, and may be terminated at any time by the board.

3. Water Code section 13269 includes the following provisions:

- The waiver shall include the performance of individual, group, or watershed-based monitoring, unless the board determines that the discharges do not pose a significant threat to water quality.
- Monitoring requirements shall be designed to support the development and implementation of the waiver program, including, but not limited to, verifying the adequacy and effectiveness of the waiver's conditions. In establishing monitoring requirements, the board may consider the volume, duration, frequency, and constituents of the discharge; the extent and type of existing monitoring activities, including, but not limited to, existing watershed-based, compliance, and effectiveness monitoring efforts; the size of the project area; and other relevant factors.
- Monitoring results must be made available to the public.

4. The Central Valley Water Board, issued a conditional waiver of waste discharge requirements for discharges related to timber harvesting activities in the Central Valley Region on January 30, 2003 (Waiver), and renewed the Waiver on January 27, 2005 and April 28, 2005. On March 18, 2010, the Central Valley Water Board issued Order R5-2010-0022, which renewed the Waiver until March 31, 2015.

5. Water Code section 13269 authorizes the Central Valley Water Board to include as a condition of a waiver the payment of an annual fee established by the State Water Board. At the time of this hearing the State Water Board has not established annual fee regulations with respect to waivers of waste discharge requirements for timber harvesting activities. On September 19, 2012 PRC 4629.6(c) established that no currently authorized or required fees shall be charged by the regional boards for activities or costs associated with the review of a project, inspection and oversight of projects, and permits necessary to conduct timber operations.

6. The Central Valley Water Board has adopted the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (4<sup>th</sup> Edition 1998) and the Water Quality Control Plan for the Tulare Lake Basin (2<sup>nd</sup> Edition 1995) (Basin Plan), including subsequent amendments, that establishes beneficial uses, water quality objectives, waste discharge prohibitions, and implementation policies that apply to waters of the state and discharges to waters of the state within the Central Valley Region.

7. Pursuant to the Basin Plan and State Board Plans and Policies, including State Water Board Resolution 88-63, the existing and potential beneficial uses of waters in the Central Valley Region include:

- a) Agricultural Supply (AGR)
- b) Aquaculture (AQUA)
- c) Preservation of Biological Habitats of Special Significance (BIOL)
- d) Cold Freshwater Habitat (COLD)
- e) Commercial and Sportfishing (COMM)
- f) Estuarine Habitat (EST)
- g) Freshwater Replenishment (FRSH)
- h) Ground Water Recharge (GWR)
- i) Industrial Service Supply (IND)
- j) Migration of Aquatic Organisms (MIGR)
- k) Municipal and Domestic Supply (MUN)
- l) Navigation (NAV)
- m) Hydropower Generation (POW)
- n) Industrial Process Supply (PRO)
- o) Rare, Threatened, or Endangered Species (RARE)
- p) Water Contact Recreation (REC-1)
- q) Non-contact Water Recreation (REC-2)
- r) Shellfish Harvesting (SHELL)
- s) Spawning, Reproduction, and Development (SPWN)
- t) Warm Freshwater Habitat (WARM)
- u) Wildlife Habitat (WILD)

8. The Basin Plan contains water quality objectives developed to protect the above-listed beneficial uses of water. Eligibility criteria, Prohibitions, and Conditions contained in this Order implement these water quality objectives. Compliance with water quality objectives will protect the beneficial uses listed in the above paragraph.

9. In 1981, the State Water Board: (a) certified a plan entitled "Water Quality Management for National Forest System Lands in California" that was developed and submitted by the United States Department of Agriculture, Forest Service (U.S. Forest Service); (b)

designated the U.S. Forest Service as the Water Quality Management Agency (WQMA) for specified activities on National Forest System lands in California that may result in non-point source discharges, including timber management, vegetative manipulation, fuels management, road construction and watershed management; and (c) executed a Management Agency Agreement with the U.S. Forest Service for the purpose of implementing the certified plan and WQMA designation.

10. Pursuant to Section 208 of the federal Clean Water Act, the United States Environmental Protection Agency (USEPA) has approved the State Water Board's certification of the U.S. Forest Service water quality management plan, and the State Water Board's certification of the practices therein as "best management practices" (BMPs).

11. The Management Agency Agreement between the State Water Board and the U.S. Forest Service contemplates that the Central Valley Water Board will waive issuance of waste discharge requirements for U.S. Forest Service timber harvest activities that may result in non-point source discharges, provided that the U.S. Forest Service designs and implements its projects to fully comply with state water quality standards.

12. The California Department of Forestry and Fire Protection (CAL FIRE) and the California Board of Forestry (BOF) regulate timber harvesting activities on nonfederal lands in accordance with the Z'berg-Nejedly Forest Practice Act (Public Resources Code, Section 4511 et seq.) and the California Forest Practice Rules (Title 14, California Code of Regulations, Section 895 et seq.).

13. In 1988, the State Water Board: (a) conditionally certified the "Water Quality Management Plan for Timber Operations on Nonfederal Lands" which included those California Forest Practice Rules selected as BMPs and the process by which those rules are administered; (b) designated CAL FIRE and the BOF as joint WQMAs; and (c) executed a Management Agency Agreement with CAL FIRE and BOF for the purpose of implementing the certified plan and WQMA designations.

14. The Management Agency Agreement between the State Water Board and CAL FIRE/BOF required a formal review of the California Forest Practice Rules and administering processes no later than six years from the date of certification. To date, that review has not occurred.

15. The USEPA has not approved the State Water Board's certification of the California Forest Practice Rules and administering processes for regulation of timber harvesting activities on nonfederal lands in California.

16. The Waiver includes conditions in addition to the requirements of the Forest Practice Rules to assure that timber harvesting activities will be protective of waters of the state. These conditions include: discharger compliance with all provisions of the Basin Plans, more stringent criteria to qualify for Category 1 (de minimus activities), Mandatory Equipment Limitation Zone for Class III and IV watercourses, mandatory retention of shade trees, notification of pesticide applications, hiring a registered civil engineer when certain conditions exist (Attachment A, Category 4, Eligibility Criteria), and must follow recommendations made by the Central Valley Water Board staff during pre-harvest inspections.

17. State Water Board Resolution 68-16 ("Statement of Policy with Respect to

Maintenance of High Quality Waters in California”) requires the Central Valley Water Board to regulate discharges of waste to waters of the state to achieve highest water quality consistent with maximum benefit to the people of the state. It further requires that the discharge meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the state will be maintained. This Waiver is consistent with Resolution 68-16 because it requires compliance with applicable water quality control plans, prohibits the creation of pollution or nuisance, and sets forth conditions that require dischargers to implement additional management practices (beyond those required in the Forest Practice Rules and U.S. Forest Service BMP guidance manuals) to assure protection of beneficial uses of waters of the state and maintain the highest water quality consistent with maximum benefit to the people of the state.

18. On October 8, 2013, PRC Article 7.7 (commencing with Section 4597) established a new type of timber harvesting permit. This new permit will allow non-industrial landowners of 15,000 acres or less to harvest timber via a non-expiring permit. The California Board of Forestry is required to develop the process for the new Working Forest Management Plan (WFMP) and implement it by January 2016. The Central Valley Water Board recognizes the need to revise or replace the Conditional Waiver once the Board of Forestry has adopted the WFMP regulations, and has chosen to renew this waiver until revisions or a replacement permit can be developed to address the WFMP.

19. The Central Valley Water Board, acting as the lead agency for this project under the California Environmental Quality Act (Public Resources Code, section 21000 et seq.) (CEQA), conducted an Initial Study in 2002 in accordance with Title 14, California Code of Regulations (CCR), section 15063.

20. The Central Valley Water Board adopted a negative declaration pursuant to CEQA on January 30, 2003 when it issued the Waiver. This action to renew the Waiver does not require preparation of a subsequent or supplemental environmental document pursuant to Title 14 California Code of Regulations (CCR) sections 15162 or 15163. There is no evidence to indicate that substantial changes are proposed for the project, that substantial changes have occurred with respect to the circumstances of the project, or that there is new information of substantial importance with respect to the project, as described in section 15162, subdivision (a). In addition, it can be seen with certainty that there is no possibility that the renewal may have a significant effect on the environment. (Cal. Code of Regs., tit. 14, section 15061, subd. (b)(3).)

21. The Waiver (Attachment A) is in the public interest as described below:

- (a) Timber harvesting activities are primarily regulated by other agencies, including CAL FIRE and the U.S. Forest Service. The Central Valley Water Board does not approve timber harvests, but it does have authority to require compliance with the California Water Code.
- (b) Without the Waiver, timber harvesting activities would continue under authority of those other agencies, but such activities may not be subject to appropriate conditions protective of water quality.
- (c) Without the Waiver, the Central Valley Water Board could regulate a smaller percentage of timber harvesting activities in the Region due to limited staff

- resources, but with the Waiver, timber harvesting activities acting pursuant to the Waiver are subject to enforceable conditions.
- (d) The Waiver contains conditions that require compliance with the applicable Basin Plan, including applicable water quality objectives.
  - (e) The Waiver contains conditions requiring compliance with monitoring and reporting programs that will assist in the protection of water quality and in verification of the adequacy and effectiveness of Waiver conditions.
  - (f) Compliance with the conditions of the Waiver will result in protection of water quality.
  - (g) The Waiver does not approve of or authorize a condition of pollution or nuisance.
  - (h) The Waiver conditions are subject to enforcement pursuant to Water Code section 13350 in the same way as enforcement of waste discharge requirements.
  - (i) Given the available Central Valley Water Board staff resources, the Waiver is an effective mechanism to regulate a large number of potential discharges and allows staff to maximize its field presence.
  - (j) The Waiver allows staff to continue to participate in the pre-harvest review of proposed timber activities which provides staff the ability to require implementation of protective measures beyond those required by CAL FIRE and the U.S. Forest Service for the most critical timber operations.
  - (k) The State Water Board, on January 22, 2004 and in Order No. WQO 2004-0002, affirmed the Central Valley Water Board Waiver and stated: "The Waiver includes specific criteria to ensure compliance with requirements of the Basin Plan and to prevent discharges that may substantially impact water quality. Further, the Regional Board's actions were consistent with State Board policies and procedures and the terms of the Waiver do not exceed the Regional Board's statutory authority."
  - (l) The Waiver has been in effect since 2003, and based on the Central Valley Water Board's experience, the Waiver has resulted in increased use of management practices to protect waters of the state such as the inclusion of staff recommendations during field review of timber harvesting plans and the inclusion of additional management practices in submittals not field-reviewed by staff.
  - (m) The MRP has been in effect since mid-2005, and based on the Central Valley Water Board's experience, the MRP has resulted in accelerated application of management practices to protect waters of the state once failures or potential failures have been identified.
  - (n) The Waiver, given limited Central Valley Water Board staff resources, provides a framework that most effectively utilizes resources to regulate discharges of wastes.

22. The Waiver is consistent with applicable water quality control plans as it requires compliance with the Basin Plan, including applicable water quality objectives, prohibits the creation of pollution or nuisance, and includes eligibility criteria and conditions to protect waters of the state.

23. The Waiver requires compliance with monitoring conditions consistent with the amendments to Water Code section 13269.

24. As described in the administrative record, the adoption of individual waste discharge requirements for all timber harvesting activities in the Central Valley Region is not feasible at this time. The Central Valley Water Board receives for review more than 2000 timber harvest documents annually. Given the number of Central Valley Water Board staff and other factors, including the timing of the CAL FIRE timber harvest approval process and the time needed to adopt waste discharge requirements, it is not feasible for the Central Valley Water Board to adopt so many individual waste discharge requirements in a year. General waste discharge requirements on, for example, a watershed-by-watershed approach, would also take a significant amount of time given the large number of watersheds and sub-watersheds in the Region. Thus, without the Waiver, most timber harvesting activities would not be subject to any regulation under the California Water Code. Waste discharge requirements do not provide identifiable benefits over this Waiver because the Waiver contains essentially the same conditions that would be included in waste discharge requirements, such as the requirement to comply with water quality control plans, and the Waiver is enforceable to the same extent as waste discharge requirements. The adoption of waste discharge requirements, however, is not precluded because pursuant to Water Code section 13269, a waiver may be terminated at any time with or without cause.

25. The Central Valley Water Board has given notice of the renewal of the Waiver to all known dischargers and other interested persons.

26. The Central Valley Water Board conducted a public hearing on December 4, 2014, in Rancho Cordova, California, and considered all testimony and evidence concerning this matter.

**IT IS HEREBY ORDERED:**

1. Based on the findings set forth in this Order and the administrative record for this matter, the Central Valley Water Board finds that the renewal of the Waiver as set forth in the Attachments to this Order, which contain eligibility criteria, prohibitions, and conditions to assure consistency with applicable water quality control plans, and monitoring conditions, is in the public interest.

2. The Central Valley Water Board, based on findings set forth in this Order and the administrative record for this matter, including the information contained in the adopted Negative Declaration, finds that the renewal of the Waiver as set forth in the Attachments to this Order will not have a significant impact on the environment.

3. The Central Valley Water Board finds that the "Monitoring and Reporting Conditions" for dischargers seeking enrollment under the Waiver as set forth in Attachment B and the "Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-0144 in Attachment C are consistent with Water Code section 13269, subdivision (a)(2).

4. The Central Valley Water Board, based on the findings set forth in this Order and the administrative record, finds that it is not necessary at this time to adopt individual or general waste discharge requirements for waste discharges related to timber harvesting activities that meet the eligibility criteria specified in the Waiver and which are conducted in accordance with the conditions specified in the Waiver.

5. The Central Valley Water Board, based on the findings set forth in this Order and the administrative record for this matter, hereby conditionally waives the requirement to obtain waste discharge requirements as set forth in Attachment A; waives the requirement to submit a report of waste discharge for Waiver Categories 1, 2 and 5; and adopts the "renewed" Waiver as set forth in Attachment A, the General Monitoring and Reporting Conditions as set forth in Attachment B, and the Implementation, Effectiveness and Forensic Monitoring and Reporting Program as set forth in Attachment C.

6. Dischargers currently enrolled under the Waiver shall continue to be covered under the Waiver, without re-enrolling.

7. The discharge of any waste not specifically regulated by the Waiver is prohibited unless the discharger complies with Water Code section 13260, subdivision (a) and the Central Valley Water Board either issues waste discharge requirements pursuant to Water Code section 13263 or an individual waiver pursuant to Water Code section 13269 or, in the case of a discharge that does not create or threaten a condition of pollution or nuisance, the time frames in Water Code section 13264, subdivision (a) have lapsed.

8. This Waiver shall not create a vested right and all such discharges shall be considered a privilege, as provided for in Water Code section 13263.

9. Pursuant to Water Code section 13269, this action waiving the issuance of waste discharge requirements for certain specific types of discharges: (a) is conditional, (b) may be terminated at any time, (c) does not permit an illegal activity, (d) does not preclude the need for permits which may be required by other local or governmental agencies, and (e) does not preclude the Central Valley Water Board from administering enforcement remedies (including civil liability) pursuant to the California Water Code.

10. The Central Valley Water Board may review the Waiver at any time and may modify or terminate the Waiver in its entirety or for individuals, as appropriate. The Executive Officer or Central Valley Water Board may terminate the applicability of the Waiver described herein to any timber harvesting activities at any time.

11. In compliance with Water Code section 13269, the Executive Officer will continue to implement a program to evaluate compliance with the conditions pursuant to which waste discharge requirements are waived by this Order.

12. As part of the Waiver compliance effort, Central Valley Water Board staff will meet periodically with major stakeholders, including environmental groups, to address water quality related issues on a watershed basis.

13. A waiver of waste discharge requirements for a type of discharge may be superseded by the adoption by the Central Valley Water Board of specific waste discharge requirements or general waste discharge requirements for that type of discharge, or by an action of the State Water Board.

14. This renewed Waiver (Attachments A and B and Monitoring and Reporting Program No. R5-2014-0144) shall become effective on March 31, 2015, and shall expire on March 31, 2018, unless terminated or renewed by the Central Valley Water Board.

15. As provided by Water Code section 13350, subdivision (a), any person may be civilly liable if that person in violation of a waiver condition or waste discharge requirements, intentionally or negligently discharges waste, or causes waste to be deposited where it is discharged, into the waters of the state and creates a condition of pollution or nuisance.

16. The Executive Officer shall make any minor, non-substantive amendments necessary to make this Order consistent with the changes adopted by the Central Valley Water Board at the hearing.

I, Pamela C. Creedon, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Central Valley Water Quality Control Board, Central Valley Region, on December 4, 2014.

Original signed by

---

PAMELA C. CREEDON, Executive Officer

**ATTACHMENT A  
WAIVER OF WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES RELATED TO  
TIMBER HARVESTING ACTIVITIES  
PURSUANT TO  
CALIFORNIA WATER CODE SECTION 13269**

California Water Code (Water Code) section 13269 authorizes the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) to waive the requirement to submit reports of waste discharge and to waive the issuance of waste discharge requirements as to a specific discharge or type of discharge if the waiver is consistent with any applicable state or regional board water quality control plan and the waiver is in the public interest. Such waiver must be conditional, may not exceed five years in duration, and may be terminated at any time.

The Central Valley Water Board, on 30 January 2003 adopted Resolution No. R5-2003-0005, which included an Attachment A; "Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities" (Waiver). The Central Valley Water Board, on 28 April 2005 adopted Resolution No. R5-2005-0052, which renewed the conditional waiver for discharges related to timber harvesting activities for a term of 5 years, revised Attachment A, and added Attachments B "Monitoring and Reporting Conditions for Dischargers Enrolled Under the Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities Pursuant to California Water Code Section 13269" and C "Implementation, Forensic and Effectiveness Monitoring and Reporting Program Order No. R5-2010-0022 for Individual Dischargers Under Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities". The Central Valley Water Board, on 18 March 2010 adopted Order R5-2010-0022, which renewed the Waiver and Attachments A, B and C for an additional 5 years.

Subject to the conditions set forth below, the Central Valley Water Board waives the requirement to submit a report of waste discharge or to obtain waste discharge requirements for the categories of waste discharges specified in Part II, Category Specific Conditions below related to timber harvesting activities, provided that the following actions for nonfederal timber lands and for federal timber lands managed by the U.S. Forest Service continue in effect.

1. For nonfederal timber lands: The State Water Resources Control Board (State Water Board) continues to certify the "Water Quality Management Plan for Timber Operations on Nonfederal Lands in California," including those California Forest Practices Rules selected by the State Water Board as "best management practices," and continues the designation of the California Board of Forestry and Fire Protection (BOF) and the California Department of Forestry and Fire Protection (CAL FIRE) as the joint management agencies for implementation of the Water Quality Management Plan for timber operations on nonfederal lands in California.
2. For federal timber lands managed by U.S. Forest Service:
  - a. The State Water Board continues to certify and the U.S. Environmental Protection Agency continues to approve, pursuant to Section 208 of the federal Clean Water Act, the plan entitled "Water Quality Management for National Forest System Lands in California" including the best management practices set forth therein, and the designation of the U.S. Forest Service as the management agency.

- b. The U.S. Forest Service maintains: (a) a water quality program consistent with the Basin Plan and consistent with the requirements of all other applicable water quality control plans; and (b) a program to monitor the implementation and effectiveness of best management practices.

For Dischargers eligible for coverage under the Waiver, the Regional Board also waives the requirement to submit a report of waste discharge, provided the Discharger submits all required eligibility documents and meets all applicable conditions of this Waiver.

## **I. GENERAL WAIVER CONDITIONS**

### **A. Definitions**

1. "Timber Harvesting Activities" means all activities on timberland relating to timber harvesting, including the cutting or removal, or both, of timber and other solid wood forest products, from timberlands for commercial purposes, together with all the work incidental thereto, including, but not limited to, construction, reconstruction and maintenance of roads, fuel breaks, firebreaks, stream crossings, landings, skid trails, beds for the falling of trees, fire hazard abatement, site preparation that involves disturbance of soil or burning of vegetation following timber harvesting activities, but excluding preparatory treemarking, surveying or roadflagging. The term "commercial purposes" includes the cutting or removal of trees which are processed into logs, lumber, or other wood products and offered for sale, barter, exchange, or trade, or the cutting or removal of trees or other forest products during the conversion of timberlands to land uses other than the growing of timber, including but not limited to residential or commercial developments, production of other agricultural crops, recreational developments, ski developments, water development projects, and transportation projects.
2. "Discharger" means the timberland owner and anyone working on behalf of the timberland owner in the conduct of timber harvesting activities for nonfederal lands, and the U.S. Forest Service, private timber operators operating on federal lands, and anyone working on behalf of the U.S. Forest Service or a timber operator in the conduct of timber harvesting activities on federal lands.
3. "Plan" means any Timber Harvesting Plan (THP), Nonindustrial Timber Management Plan (NTMP), or other discretionary permit issued by CAL FIRE to harvest timber, including all amendments thereto that propose a change in timber harvesting activities that may increase the discharge or otherwise pose the potential for increased impacts to water quality. (For example, amendments that propose to add, expand, or extend winter operations shall be considered a "Plan" for purposes of this Waiver. Amendments that do not propose any material change in how or where timber harvesting activities will be conducted, such as a change in timber operator, a time extension from CAL FIRE, etc., shall not be considered a "Plan" for purposes of this Waiver.)
4. "Requirement of applicable water quality control plans" means a water quality objective, prohibition, TMDL implementation plan, or other requirement contained in water quality control plans adopted by the Central Valley Water Board and approved by the State Water Board, and plans or policies adopted by the State Water Board that apply to the timber harvesting activities.

5. "Monitoring" refers to all types of monitoring undertaken in connection with determining water quality conditions and factors that may affect water quality conditions, including but not limited to, implementation, effectiveness, forensic, water quality compliance, assessment and trend monitoring, and Waiver compliance monitoring undertaken in connection with timber harvesting activities.
6. All other terms shall have the same definitions as prescribed by the California Forest Practice Rules and the Porter-Cologne Water Quality Control Act, unless specified otherwise.

**B. General Conditions for Waiver Categories 1 through 5**

1. The discharger must comply with all requirements of applicable water quality control plans, and as these may be modified from time to time pursuant to amendments to water quality control plans adopted by the Central Valley Water Board and approved by the State Water Board, and water quality control plans and policies adopted by the State Water Board; and
2. The discharger shall conduct timber harvesting activities in accordance with the approved Plan or CAL FIRE-accepted Exemption or Emergency Notice for nonfederal timberlands; or in accordance with the final environmental document and decision document prepared pursuant to the National Environmental Policy Act (NEPA) for timber harvesting activities on federal lands managed by the U.S. Forest Service; and
3. The discharger shall not create a condition of pollution, contamination, or nuisance, as defined by Water Code section 13050; and
4. The discharger shall not discharge any waste not specifically regulated by the Waiver described herein and shall not cause alteration in stream temperature which exceeds water quality control plan requirements. Waste specifically regulated under this waiver includes: earthen materials, including soil, silt, sand, clay, rock; organic materials, such as slash, sawdust, or bark; and silvicultural pesticides that enter or threaten to enter into waters of the state. Examples of waste not specifically regulated under this Waiver include petroleum products, hazardous materials, or human wastes; and
5. The discharger shall allow Central Valley Water Board staff reasonable access onto the affected property whenever requested by Central Valley Water Board staff for the purpose of performing inspections and conducting monitoring, including sample collection, measuring, and photographing/taping to determine compliance with waiver conditions. Such inspections and monitoring shall be conducted consistent with Water Code section 13267, subdivision (c), Public Resources Code section 4604, subdivision (b)(1), and other applicable law; and
6. Any person seeking coverage under this Waiver shall file the applicable eligibility document(s) and fees as described herein with the Central Valley Water Board. Dischargers shall file any additional eligibility documents

required by the Executive Officer, which may include a State Water Board Form 200; and

7. Unless other timeframes are specified, discharges associated with timber harvesting activities and pesticide applications that comply with the eligibility criteria, conditions, and procedures for a waiver may commence upon receipt by the Central Valley Water Board of the applicable documents as described in Part II – Category Specific Conditions, including acknowledgement of the Monitoring Conditions described in Attachment B; and
8. This Waiver does not apply to discharges requiring an NPDES permit under the Clean Water Act, including silvicultural point sources as defined in 40 CFR 122.27.

## **II. CATEGORY-SPECIFIC CONDITIONS**

### **A. CATEGORY 1: MINOR TIMBER HARVESTING ACTIVITIES ON NONFEDERAL LANDS (including certain activities approved by CAL FIRE under Exemption or Emergency Notices, Timber Harvesting Plans, other Plans, or Amendments).**

#### **1. Eligibility Criteria:**

- a. Timber harvesting activities (Notices of Exemption or Emergency) within 150 feet of existing structures (i.e., “FireSafe” treatments), harvest of Christmas trees, dead, dying or diseased fuelwood or split products, public agency, public and private utility right of way, fuel hazard reduction, substantially damaged timberland unmerchantable as sawlog and woody debris and slash removal, that are conducted pursuant to a Notice of Exemption accepted by CAL FIRE under 14 California Code of Regulations (CCR) section 1038, subdivision (c), will automatically be enrolled in the Waiver.
- b. Timber harvesting activities, other than the notices of exemption or emergency specified in (II)(A)(1)(a) above, that comply with the following criteria:
  1. No timber harvesting activities on slopes greater than 60%.
  2. No tractor or heavy equipment operations on slopes greater than 50%.
  3. No construction of new tractor roads on slopes greater than 40%.
  4. No timber harvesting activities within any Special Treatment Area “type a” or “type c,” as defined in 14 CCR 895.1, except hauling over existing roads that complies with the rules associated with that Special Treatment Area.
  5. No tractor or heavy equipment operations on known slides or unstable areas.
  6. No new construction or reconstruction, as defined in 14 CCR 895.1, of logging roads, landings, or watercourse crossings.
  7. No timber harvesting activities within the standard width of a Watercourse and Lake Protection Zone or Equipment Limitation Zone, as defined in 14 CCR 916.4 [936.4, 956.4](b) and (c), except for use and maintenance of existing permanent roads, use of existing bridges and existing culverts as skid trail crossings, and maintenance of associated drainage facilities or structures.

8. No timber harvesting activities that may disturb, threaten, or damage known or potential aquatic or wetland habitat for rare, threatened or endangered plants or animals.
9. No timber harvesting activities within the buffer zone of a sensitive species, as defined in 14 CCR 895.1.
10. No timber harvesting activities on soils with High or Extreme Erosion Hazard Rating.
11. No heavy equipment operation in meadows or wet areas, except use and maintenance of existing roads and associated drainage facilities or structures.
12. No timber harvesting activities during the winter period from October 15 through May 1 or under saturated soil conditions as defined in 14 CCR 895.1 where such activities may result in discharge of waste to waters of the state.
13. No timber harvesting activities involving mechanical site preparation, as defined in 14 CCR 895.1. (Timberland Conversions excepted)
14. No timber harvesting activities involving prescribed burning. (Timberland Conversions excepted)
15. No timber harvesting activities that do not meet minimum stocking requirements immediately upon completion of harvest, as defined in 14 CCR 912.7 [932.7, 952.7]. (Timberland Conversions excepted)
16. No timber harvesting activities that include, are accompanied by, or followed by post-harvest applications of pesticides.

2. **Conditions:**

- a. The discharger shall comply with the General Conditions described in Part I.B., above.
- b. The Central Valley Water Board receives: (1) a copy of a Plan approved by CAL FIRE, or an Notice of Exemption or Emergency accepted by CAL FIRE, that includes all of the above eligibility criteria, and (2) a Certification Notice, signed by the landowner, certifying that the timber harvesting activities will comply with the eligibility criteria and conditions for Waiver Category 1, received within 15 days from notice acceptance by CAL FIRE and prior to the start of operations, or at least 30 days prior to the start of operations for a Plan. A Certification Notice is not required for Notices of Exemption and Emergency that meet the eligibility criteria described in Part II A.1.a. above.
- c. The discharger shall comply with all conditions specified in Attachment B, "Monitoring Conditions." Agency Monitoring will be sufficient for this Category providing the discharger complies with CAL FIRE Forest Practice Rules and the criteria specified in Part II A.1.b. above.

**B. CATEGORY 2: EXEMPT OR EMERGENCY TIMBER HARVESTING ACTIVITIES ON NONFEDERAL LANDS THAT DO NOT QUALIFY FOR WAIVER UNDER CATEGORY 1.**

1. **Eligibility Criteria:** Timber harvesting activities that comply with the following criteria as identified in the Notice of Exemption or Notice of Emergency accepted by CAL FIRE, for Less Than 3 Acre Conversion Exemptions and Notices of Emergency Timber Operations related to fire salvage:
  - a. The Registered Professional Forester (RPF), after conducting a comprehensive field review of proposed timber activities, has specifically identified the presence or absence of any of the following features or conditions in, or affected by, the proposed exempt or emergency timber harvesting activities:
    - aquatic or wetland habitat for salmonids or rare, threatened or endangered species,
    - domestic or municipal water use within one mile downstream of the harvest area,
    - soils with high or extreme erosion hazard rating,
    - known slides and unstable areas, including unstable or erodible watercourse banks,
    - changeable channels, overflow channels, inadequate flow capacity, flood prone areas, riparian areas, elevated stream temperatures,
    - all watercourse crossings, including existing crossings and those to be constructed or reconstructed for all Class I-IV watercourses, and existing and proposed near-stream landings and skid trails.
  - b. For those Plans where aquatic or wetland habitat for rare, threatened or endangered species is identified and where timber harvesting activities may impact such habitat, additional field review has been conducted by a scientist, with a bachelor's or advanced degree in biological sciences and experience in aquatic systems, to determine if the Plan could adversely affect such species or their habitat.
  - c. The Notice of Exemption or Notice of Emergency identifies any additional management practices and/or water quality protective measures (beyond the requirements of the current Forest Practice Rules) to address, at a minimum, the features and conditions described in Part II.B.1.a. above (should any exist), winter period operations between October 15 and May 1, and cumulative watershed effects, to assure compliance with the requirements of applicable water quality control plans. The Notice of Exemption or Notice of Emergency incorporates any and all project modifications and mitigation measures recommended by the biological scientist to avoid adverse impacts to rare, threatened or endangered species.

- d. The management practices and water quality mitigation and protective measures specified in the Notice pursuant to subsection "c" above shall include, at minimum, the following: (1) An Equipment Limitation Zone (ELZ) for any and all Class III and Class IV watercourses of at minimum 25 feet where sideslope steepness is less than 30%, and at minimum 50 feet where sideslope steepness is 30% or greater; (2) Any and all crossing facilities on watercourses that support fish will be installed and maintained so as to allow for unrestricted passage of fish and water during all life stages and flow conditions; (3) Any and all culverts at watercourse crossings in which water is flowing at the time of installation shall be installed with their necessary protective structures concurrently with fill placement; (4) Any and all permanent watercourse crossings and associated fills and approaches shall be installed and maintained to prevent diversion of stream overflow down the road and to minimize erosion of the fill and road prism should the drainage structure become obstructed; (5) Any and all riparian vegetation, other than commercial species, that is found along watercourses and lakes or that is found within or bordering meadows and wet areas shall be retained and protected during timber harvesting activities; and (6) Where seasonal water temperatures are too high to fully support beneficial uses of water in Class I or II waters within or downstream from the logging areas, no trees that provide shade to the waters during critical hours during the summer period shall be cut.

2. **Conditions:**

- a. The Central Valley Water Board receives: (1) a copy of a Notice of Exemption or Notice of Emergency accepted by CAL FIRE that includes the information required by Part II.B.1.a. through d., above, and (2) a Certification Notice, signed by the landowner, certifying that the timber harvesting activities will comply with all conditions applicable to Waiver Category 2, received within 15 days of notice acceptance by CAL FIRE and prior to the start of operations.
- b. The discharger shall comply with the General Conditions described in Part I.B., above.
- c. The discharger shall notify the Central Valley Water Board in writing at least 60 days prior to any proposed aerial application and 30 days prior to any proposed ground application of pesticides. The written notification shall include the type of pesticide, the proposed date(s) of application, the method and area of application, and measures that will be employed to assure compliance with all applicable water quality control plans. Subsequent changes to the proposal must be submitted in writing no less than 48 hours prior to pesticide application.
- d. The discharger shall comply with all conditions specified in Attachment B, "Monitoring Conditions." The discharger shall comply with all applicable requirements of the Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-0144. The discharger shall comply with additional monitoring and reporting program requirements (including, but not limited to, water quality compliance and/or assessment and trend monitoring) when directed in writing by the Executive Officer.

- e. Upon completion of timber harvest activities and cessation of waste discharges (including pesticides), the discharger shall seek termination of coverage under the Waiver in accordance with Part III, Termination of Coverage.

**C. CATEGORY 3: TIMBER HARVESTING ACTIVITIES ON NONFEDERAL LANDS THAT RECEIVE DISCRETIONARY APPROVAL FROM CAL FIRE AND FOR WHICH REGIONAL BOARD STAFF HAS FULLY PARTICIPATED IN THE INTERDISCIPLINARY REVIEW TEAM PROCESS (including Timber Harvesting Plans, Non-Industrial Timber Management Plans, other Plans, and Amendments).**

**1. Eligibility Criteria:**

- a. Central Valley Water Board staff has participated in CAL FIRE's interdisciplinary Review Team process, including an on-site pre-harvest inspection (PHI), except that Central Valley Water Board staff attendance at a PHI for an amendment is optional and is required only upon written notification by Central Valley Water Board staff.
- b. Additional management practices and/or water quality protective measures (beyond the requirements of the current Forest Practice Rules) are identified, if necessary, during the Review Team process to assure compliance with the requirements of applicable water quality control plans.
- c. Such identified management practices, and/or water quality protective measures are submitted in writing to CAL FIRE by Central Valley Water Board staff, or Central Valley Water Board staff accepts, in writing, those management practices and/or water quality protective measures proposed by either CAL FIRE or the RPF.
- d. All identified additional management practices, and/or water quality protective measures are incorporated into the Plan as submitted or accepted by Central Valley Water Board staff, or as subsequently agreed to in writing by the Executive Officer following dispute resolution.

**2. Conditions:**

The Central Valley Water Board receives the following items at least 30 days prior to the start of timber operations: (1) a copy of a Plan approved by CAL FIRE that incorporates all identified additional management practices, and/or water quality protective measures resulting from Central Valley Water Board staff participation in CAL FIRE's interdisciplinary Review Team process, and (2) a Certification Notice, signed by the landowner, listing the Plan number and certifying that the discharger believes that the activities are appropriately covered under Waiver Category 3.

- a. For an approved NTMP, the discharger shall submit each Notice of Timber Operations to the Central Valley Water Board no less than 30 days prior to commencement of timber harvesting activities.
- b. The discharger shall comply with the General Conditions described in Part I.B., above.

- c. The discharger shall notify the Central Valley Water Board, in writing, at least 60 days prior to any proposed aerial application and at least 30 days prior to any proposed ground application of pesticides. The written notification shall include the type of pesticide, the proposed date(s) of application, the method and area of application, and measures that will be employed to assure compliance with applicable water quality control plans. Subsequent changes to the proposal must be submitted in writing no less than 48 hours prior to pesticide application.
- e. The discharger shall comply with all conditions specified in Attachment B, "Monitoring Conditions." The discharger shall comply with all applicable requirements of the Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-0144. The discharger shall comply with additional monitoring and reporting program requirements (including, but not limited to, water quality compliance and/or assessment and trend monitoring) when directed in writing by the Executive Officer.
- f. Upon completion of timber harvesting activities and cessation of waste discharges (including pesticides), the discharger shall seek termination of coverage under the Waiver in accordance with Part III, Termination of Coverage.

**D. CATEGORY 4: TIMBER HARVESTING ACTIVITIES ON NONFEDERAL LANDS THAT RECEIVE DISCRETIONARY APPROVAL FROM CAL FIRE FOR WHICH REGIONAL BOARD STAFF HAS NOT FULLY PARTICIPATED IN THE INTERDISCIPLINARY REVIEW TEAM PROCESS AND WHICH ARE NOT ELIGIBLE FOR A WAIVER UNDER CATEGORY 1 (including Timber Harvesting Plans, Non-Industrial Timber Management Plans, other Plans, and Amendments).**

**1. Eligibility Criteria:**

- a. The RPF, after conducting a comprehensive field review of proposed timber operations, has clearly identified in the Plan submitted to CAL FIRE the presence or absence of the following features or conditions in, or affected by, the proposed Plan:
  - aquatic or wetland habitat for salmonids or rare, threatened or endangered species,
  - domestic or municipal water use within one mile downstream of the harvest area,
  - soils with high or extreme erosion hazard rating,
  - known slides and unstable areas, including unstable or erodible watercourse banks,
  - changeable channels, overflow channels, inadequate flow capacity, flood prone areas, riparian areas, elevated stream temperatures,
  - all watercourse crossings, including existing crossings and those to be constructed or reconstructed for all Class I-IV watercourses , and existing and proposed near-stream landings and skid trails.
- b. For those Plans where aquatic or wetland habitat for rare, threatened or endangered species is identified and where timber harvesting activities may impact such habitat, additional field review has been conducted by a scientist, with a bachelor's or advanced degree in biological sciences and experience in

aquatic systems, to determine if the Plan could adversely affect such species or their habitat. For those Plans that propose timber harvesting activities on soils with extreme erosion hazard rating, known slides or unstable areas, or proposes any watercourse crossing that involves the placement of more than 500 cubic yards or 25 vertical feet of fill material, additional field review has been conducted or directed by a registered civil engineer or registered engineering geologist, as his/her California license for practicing engineering and/or geology permits, to determine if the Plan could cause or exacerbate the potential for soil erosion or mass soil movement. Field reviews conducted in accordance with a certified programmatic environmental document satisfy these eligibility criteria, if previously reviewed and accepted by the Central Valley Water Board.

c. The approved Plan:

1. Incorporates, as addenda, signed technical reports from qualified professionals when required to be prepared under Part II.D.1.b. above.
2. Incorporates any additional management practices and/or water quality protective measures (beyond the requirements of the current Forest Practice Rules) to address, at a minimum, the conditions described in Part II.D.1.a and b., above, winter period operations between October 15 and May 1, and cumulative watershed effects to assure compliance with the requirements of all applicable water quality control plans. Incorporates any and all project modifications and mitigation measures recommended by the biological scientist to avoid adverse impacts to rare, threatened or endangered species.
3. The management practices and water quality protective measures specified in the Plan pursuant to subsection (c)(2) above, shall include, at minimum, the following: (1) An Equipment Limitation Zone (ELZ) for any and all Class III and Class IV watercourses of at minimum 25 feet where sideslope steepness is less than 30%, and at minimum 50 feet where sideslope steepness is 30% or greater; (2) Any and all crossing facilities on watercourses that support fish will be installed and maintained so as to allow for unrestricted passage of fish and water during all life stages and flow conditions; (3) Any and all culverts at watercourse crossings in which water is flowing at the time of installation shall be installed with their necessary protective structures concurrently with fill placement; (4) Any and all permanent watercourse crossing and associated fills and approaches shall be installed and maintained to prevent diversion of stream overflow down the road to minimize erosion of the fill and road prism should the drainage structure become obstructed; (5) Any and all riparian vegetation, other than commercial species, that is found along watercourses and lakes or that is found within or bordering meadows and wet areas will be retained and protected during timber harvesting activities; (6) Where seasonal water temperatures are too high to fully support beneficial uses of water in Class I or II water within or downstream from the logging areas, no trees that provide shade to the waters during critical hours during the summer period shall be cut.

2. **Conditions:**

- a. The Central Valley Water Board receives the following items at least 30 days prior to the start of timber operations: (1) a copy of an approved Plan that meets the eligibility criteria in Part IID.1.a.through c.; and (2) a Certification Notice signed by the landowner stating that the approved Plan accurately represents site conditions, and that reasonable implementation of the approved Plan will assure compliance with Waiver Category 4.
- b. For an approved NTMP, each Notice of Timber Operations shall be submitted to the Central Valley Regional Board no less than 30 days prior to commencement of timber harvesting activities.
- c. The discharger shall comply with the General Conditions described in Part I.B., above.
- d. The discharger shall notify the Central Valley Water Board, in writing, at least 60 days prior to any proposed aerial application and at least 30 days prior to any ground application of pesticides. The written notification shall include the type of pesticide, the proposed date(s) of application, the method and area of application, and measures that will be employed to assure compliance with applicable water quality control plans. Subsequent changes to the proposal must be submitted in writing no less than 48 hours prior to pesticide application.
- e. The discharger shall comply with all conditions specified in Attachment B, "Monitoring Conditions." The discharger shall comply with all applicable requirements of the Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-0144. The discharger shall comply with additional monitoring and reporting program requirements (including, but not limited to, water quality compliance and/or assessment and trend monitoring) when directed in writing by the Executive Officer.
- f. Upon completion of timber harvesting activities and cessation of waste discharges (including pesticides), the discharger shall seek termination of coverage under the Waiver in accordance with Part III, Termination of Coverage.

**E. CATEGORY 5: TIMBER HARVESTING ACTIVITIES ON FEDERAL LANDS MANAGED BY THE U.S. FOREST SERVICE (including timber harvesting sales, fuels reduction projects, fire salvage harvest, pesticide applications, Forest Stand Improvement and Hazard Tree Removal projects)**

1. **Eligibility Criteria:**

- a. The U.S. Forest Service has conducted a multi-disciplinary review of the timber harvesting proposal, including review by watershed specialists, and has specified best management practices, and additional control measures as needed, in order to assure compliance with applicable water quality control plans.
- b. The U.S. Forest Service has conducted a cumulative watershed effects (CWE) analysis, where required or appropriate, and included specific measures needed

to reduce the potential for CWEs in order to assure compliance with applicable water quality control plans.

- c. The U.S. Forest Service has allowed the public and other interested parties reasonable opportunity to comment on and/or challenge individual timber harvesting proposals.

## 2. **Conditions:**

- a. The U.S. Forest Service shall submit to the Central Valley Water Board copies of final decision documents that contain information documenting compliance with the eligibility criteria at Part II.E.1., above. A copy of applicable final NEPA documents shall be submitted upon written request by Central Valley Water Board staff.
- b. The U.S. Forest Service shall comply with all conditions specified in Attachment B, "Monitoring Conditions." The U.S. Forest Service shall also comply with all applicable requirements of Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-0144. The U.S. Forest Service shall comply with additional monitoring and reporting program requirements (including, but not limited to, water quality compliance and/or assessment and trend monitoring) for all projects (except forest stand improvement and hazard tree removal projects) when directed in writing by the Executive Officer. As specified in Attachment B, the U.S. Forest Service is required to conduct effectiveness and forensic monitoring only when: (1) the discharger's cumulative watershed effects analysis indicates that the project, combined with other U.S. Forest Service projects conducted in the watershed over the past 10 years, may cause any watershed or sub-watershed to exceed a threshold of concern as determined by various models (i.e., Equivalent Roaded Acres (ERA), Surface Erosion (USLE), Mass Wasting (GEO), etc.). The U.S. Forest Service shall comply with the General Conditions described in Part I.B., above.
- c. Upon completion of timber harvesting activities and cessation of waste discharges (including pesticides), the U.S. Forest Service shall seek termination of coverage under the Waiver in accordance with Part III, Termination of Coverage.

## **III. TERMINATION OF COVERAGE**

1. The discharger may terminate coverage under this Waiver for a completed timber harvesting activity by submitting to the Central Valley Water Board a Notice of Termination Form (NOT). The following criteria, in general, must be satisfied before termination of waiver coverage will be considered by the Executive Officer:
  - Timber harvesting activities are completed,
  - All Category specific eligibility criteria were met,
  - All elements of required reporting have been completed,
  - Soil disturbed by timber harvest activities has stabilized, and
  - Pesticide applications have ceased and are not proposed

The NOT shall be signed by the landowner for nonfederal lands and the Forest Supervisor or District Ranger for federal lands. In signing the NOT, the discharger or U.S. Forest Service representative shall certify that: (1) the timber harvesting activities were conducted in conformance with the approved plan, accepted notice or U.S. Forest Service project requirements, all eligibility criteria specified in the applicable Waiver category and all other applicable provisions of this Waiver, and (2) discharges resulting from the timber harvesting activities and pesticide applications were in compliance and will continue to comply with all requirements of applicable water quality control plans.

The Executive Officer shall review the NOT specifically noting compliance with the above criteria. A field inspection may be conducted to verify compliance with all Waiver criteria and conditions. The Executive Officer shall notify the discharger regarding approval or disapproval of the NOT.

Note: Enrollment in a waiver is required until such time that waste discharges related to timber harvesting activities, including pesticides, have ceased.

#### **IV. TERMINATION OF WAIVERS**

1. The Executive Officer shall terminate the applicability of a waiver to specific timber harvesting activities if the Executive Officer makes any of the following determinations:
  - a. The proposed timber harvesting activities do not comply with the eligibility criteria for the Waiver.
  - b. The timber harvesting activities are not in compliance with the applicable conditions of the Waiver.
  - c. The proposed timber harvesting activities are reasonably likely to cause or contribute to any violation of an applicable water quality control plan or policy. In making this determination, the Executive Officer shall consider the recommendations of Central Valley Water Board staff that participated in the review of the proposed timber harvesting activities, if any.
  - d. A timber harvesting activity has varied in whole or in any part from the approved Plan (for discretionary approvals) or Notice (for non-discretionary approvals), unless these changes result in better protection of water quality.
2. Upon receipt of notice of termination of applicability of the Waiver, the discharger shall immediately cease all timber harvesting activities that may result in discharges to waters of the State, other than activities necessary to control erosion. Upon such notice of termination, the discharger must file a report of waste discharge and applicable filing fee pursuant to Water Code section 13260. Timber harvesting activities that may result in discharges that could affect the quality of waters of the state may commence only upon enrollment by the Executive Officer under general waste discharge requirements, the adoption by the Central Valley Water Board of an individual waiver of waste discharge requirements or individual waste discharge requirements, or in accordance with Water Code section 13264, subdivision (a).

**ATTACHMENT B  
MONITORING AND REPORTING CONDITIONS  
FOR DISCHARGES ENROLLED UNDER THE  
WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES  
RELATED TO TIMBER HARVESTING ACTIVITIES  
PURSUANT TO  
CALIFORNIA WATER CODE SECTION 13269**

This attachment contains Monitoring and Reporting conditions that are applicable to the various timber harvesting activity categories specified in Attachment A “Waiver of Waste Discharge Requirements for Discharges related to Timber Harvesting Activities” (Waiver). The purpose of these monitoring conditions is to assure compliance with Waiver criteria and conditions, to verify the adequacy and effectiveness of the Waiver, to assist dischargers with implementation and maintenance of water quality protection measures and to identify and correct waste discharges that violate or threaten to violate water quality control plan (Basin Plan) requirements. The attachment specifies conditions that are consistent with California Water Code (Water Code) section 13269, subdivision (a)(2) and are applicable to Waiver Categories 1 through 5 in Attachment A.

**I. AUTHORITY TO REQUIRE MONITORING**

Water Code section 13269, subdivision (a)(2) requires a waiver of waste discharge requirements to include as a condition the performance of individual, group, or watershed-based monitoring and the monitoring be designed to support the development and implementation of the waiver program, unless the Central Valley Water Board determines, consistent with Water Code section 13269, subdivision (a)(3) that discharges subject to the waiver do not pose a significant threat to water quality. This attachment sets forth monitoring and reporting conditions that comply with Water Code section 13269.

**II. MONITORING DESCRIPTIONS<sup>1</sup>**

**A. Field Verification Monitoring (includes all monitoring types conducted by direct field observation)**

Agency Monitoring – Each timber harvesting activity conducted pursuant to approval by the California Department of Forestry (CAL FIRE) and the United States Forest Service (U.S. Forest Service) are subject to compliance monitoring conducted by CAL FIRE (on private lands) and the U.S. Forest Service (on federal lands) to evaluate compliance with CAL FIRE’s Forest Practice Rules or U.S. Forest Service best management practices (BMP) guidance documents. CAL FIRE and the U.S. Forest Service have been asked to notify the Central Valley Water Board when Agency Monitoring detects violation of CAL FIRE rules or U.S. Forest Service BMP requirements that relate to water quality protection measures.

---

<sup>1</sup> A multi-agency timber harvest monitoring workgroup (MOU Monitoring Workgroup) has developed a “Joint Report on Monitoring Terms and Authorities” that contains terms, descriptions and criteria relating to water quality related monitoring of timber operations. The descriptions in this section (with the exception of the term “Agency Monitoring”) are derived from the “Joint Report” which was developed by representatives of the participating Regional Boards, CAL FIRE and other agencies.

Implementation Monitoring - Implementation Monitoring consists of detailed visual monitoring of harvested areas and roads/landings prior to the rainy season, with emphasis placed on determining if management measures (such as erosion control measures, riparian buffers) were implemented or installed in accordance with approved timber harvest projects including Waiver eligibility criteria. Implementation Monitoring may include photo-documentation of implemented or installed management measures (photo-point monitoring). Implementation Monitoring is essential to assure that water quality protection measures are in place prior to the onset of significant precipitation. Implementation Monitoring is applied at the project scale. Implementation Monitoring is conducted by the discharger and by regulatory agencies during compliance or completion inspections. BMP implementation monitoring conducted by the U.S. Forest Service is considered to be both Agency Monitoring and Implementation Monitoring for the purposes of this Attachment.

Effectiveness Monitoring – Effectiveness Monitoring consists of monitoring subsequent to harvest to evaluate whether particular management measures are or were effective at achieving desired results. Effectiveness Monitoring may be applied at a range of spatial scales, focusing on specific management measures for multiple rainfall events or multiple years. Effectiveness Monitoring may include visual hillslope monitoring (observations outside of the stream or stream channel, i.e., on the harvested slopes) or visual instream monitoring (evaluation of instream conditions). Effectiveness Monitoring is applied at the project scale. Effectiveness Monitoring is generally conducted by the discharger and by regulatory agencies during site inspections.

Forensic Monitoring - Forensic Monitoring employs visual field detection techniques to detect significant pollution caused by failed management measures, failure to implement necessary measures, legacy timber activities, non-timber related land disturbances and natural sediment sources. Forensic Monitoring may also include photo-point monitoring to document pollution sources. Forensic Monitoring is most successful when criteria such as storm events of particular size are used to trigger field investigations for timely detection and repair of controllable sediment sources. Forensic Monitoring is typically applied at the sub-watershed or project scale. Forensic Monitoring is generally conducted by the discharger and by agencies during periodic compliance inspections.

Water Quality Compliance Monitoring – Water Quality Compliance Monitoring employs water column sampling to determine whether waste discharges (sediment, turbidity, temperature and pesticide concentrations) from timber harvesting activities are in compliance with Basin Plan standards. In most instances, it is necessary to collect pre-project data and/or establish reference or control sites to make compliance monitoring successful. Water Quality Compliance Monitoring is typically applied at the sub-watershed or project scale focusing on the effects of a single project for a period greater than the active life of the project. Water Quality Compliance Monitoring is generally required of and is the responsibility of the discharger but may be conducted by regulatory agencies in response to complaints or as follow-up to violations.

Assessment and Trend Monitoring – Assessment Monitoring is used to characterize existing water quality or related stream conditions on a watershed scale at a discrete instant or over a defined time period. Examples include monitoring to determine reference or baseline conditions, determine existing beneficial uses, provide information for cumulative watershed effects analyses in order to develop mitigation measures for

timber harvesting activities or other projects in a given watershed, and provide information to select sites for restoration and/or remedial work to improve water quality.

Trend Monitoring is used to characterize water quality conditions over time. Trend Monitoring is typically applied at a watershed scale, focusing on the combined effects of all past and present watershed management activities over a period of time. Examples of trend monitoring objectives include; characterize watershed conditions resulting from combined effects of land use activities over time, determine whether Basin Plan water quality objectives are achieved and maintained over time and, in impaired waterbodies, assist in restoration or remedial work to maximize benefits to water quality. Assessment and Trend Monitoring efforts are the most intensive and costly monitoring types and the monitoring, to be scientifically valid, must occur over a long period of time and take into account all waste sources and natural inputs in the watershed. Assessment and Trend Monitoring is usually conducted by the discharger but may, in rare instances and when funds are available, be conducted by regulatory agencies.

#### **B. Waiver Compliance Monitoring (Waiver condition monitoring)**

Waiver Compliance Monitoring is non-field monitoring submitted by the discharger to verify compliance with all applicable timber waiver criteria and conditions. Attachment A contains conditions that require dischargers (landowner for non-federal lands, Forest Supervisor or District Ranger for federal lands) enrolled in Categories 2, 3, 4, and 5 to sign and submit a "final certification" that certifies that:

- Timber harvesting activities were conducted in conformance with the approved plan or accepted notice (for private lands) and with all applicable provisions of the waiver.
- Discharges resulting from the timber harvesting activities and pesticide applications were in compliance or expected to be in compliance with all requirements of applicable water quality control plans.

### **III. MONITORING CRITERIA**

Site-specific factors must be considered when determining the type of monitoring to be required for timber harvesting activities. Site-specific determinations should focus primarily on the threat to water quality, taking into account the effectiveness of monitoring, monitoring suitability, and access. In general, the rigor and complexity of monitoring increases as the threat to water quality increases.

**A. Threat to Water Quality** – Threat to water quality is a function of site-specific characteristics that, individually or in combination, can trigger the need for increased levels of monitoring. Under each characteristic listed below, examples of conditions that correspond to an increased threat to water quality are provided.

#### **1. Distribution and Sensitivity of the Beneficial Uses of Water**

- Presence of domestic water supplies
- Presence of aquatic species (including listed species)
- Close proximity of operations to other critical beneficial uses or sensitive receptors

2. Current Water Quality Conditions
  - Existing TMDLs or 303(d) listings
  - Documented non-compliance with Basin Plan standards
  - Known or suspected watershed impacts
3. Physical Setting
  - Unstable geologic setting / steep slopes
  - Erodible soils
  - Existing landslides or active erosion sites
  - Roads or watercourse crossings in poor condition
  - Harsh climates and/or intense precipitation regimes
4. Type and Scope of Proposed Activities
  - Intense silvicultural and/or yarding methods
  - Intensity of site preparation and/or road construction
  - Winter operations and/or “alternative” or “in lieu” practices
  - Operations in or near watercourses and flood-prone areas

**B. Water Column Monitoring Suitability** – The suitability of water column monitoring is a function of various factors related to the feasibility of conducting monitoring. In some cases, monitoring that is considered necessary may be infeasible due to factors such as: lack of available and/or appropriate sampling locations, inadequate streamflow regime, difficult access, safety concerns, potential for vandalism, and potential for equipment damage or loss. In some situations, bioassessment and/or physical stream condition evaluation or monitoring may provide a better indication of potential water quality and beneficial use impacts than water column sampling. Bioassessment monitoring should be approved, by the Executive Officer, where it provides the most accurate and useable information or where water column monitoring cannot be feasibly conducted due to safety, access or other factors. Water column monitoring for sediment (the primary pollutant in timber related discharges) is complicated by the fact that sediment occurs naturally, is in runoff (discharged from) non-timber related land use activities, and may be elevated due to “legacy” timber harvesting (logging conducted prior to improved CAL FIRE and U.S. Forest Service processes).

- C. Watercourse Assessment for “High Harvest” Watersheds (development and submittal)** - A Watercourse Assessment shall be conducted at low streamflow conditions and submitted to the Central Valley Water Board when a timber harvesting activity is proposed in a Class I CalWater Planning Watershed where timber harvesting activities over the last 10 years **meet or exceed the following criteria:**
- 50 percent of the watershed area has been harvested, and even-aged management prescriptions constitute 50 percent of the harvested areas.
  - 40 percent of the watershed area has been harvested, and even-aged management prescriptions constitute 60 percent of the harvested areas.

- 30 percent of the watershed area has been harvested, and even-aged management prescriptions constitute 70 percent of the harvested areas.

The Watercourse Assessment shall be submitted to the Executive Officer with the Certification Notice or as soon as possible thereafter following the low streamflow period. The Executive Officer will evaluate the Watercourse Assessment and will determine the need for additional monitoring requirements including consideration of Water Quality Compliance and Assessment/Trend monitoring. The Watercourse Assessment shall include, at a minimum, the following:

1. A topographic based map with information required by California Board of Forestry and Fire Protection (BOF) Technical Rule Addendum No. 2 (2005 BOF Forest Practice Rules) and indicating the location of watercourse assessment monitoring locations described in 2., below. The map shall also include the locations of photo-documentation points, where required.
2. A detailed report, prepared by a qualified professional<sup>21</sup>, describing the condition of all Class I watercourses in the CalWater Planning Watershed, both upstream and downstream of the proposed timber harvest area. The report shall include, but not be limited to, the following:
  - Gravel Embeddedness – Description (based upon visual observations) of the degree gravel is embedded with sand or finer sediments. Photo-documentation required.
  - Pool Sedimentation – Description (based upon visual observations) of degree of sediment depositions in pools. Photo-documentation required.
  - Stream Channel Aggradation – Degree that stream channel has been raised by sedimentation.
  - Streambank Cutting, Mass Wasting and Stream Downcutting – Description of streambank condition(s) – Photo-documentation required.
  - Stream-Side Vegetation – Description of stream-side vegetation.
  - Recent Flood History – Description of unusually high recent flows and whether these high flows were related to timber harvesting activities.

The above watercourse conditions shall be evaluated for every Class I watercourse within the CalWater Planning Watershed area that may be impacted by the proposed timber harvesting activity. The topographic map, detailed report and required photo-documentation must be submitted at least 30 days prior to start of proposed timber harvesting activities. The Executive Officer may require development and submittal of a Watershed Assessment for any timber harvesting activity that poses a significant threat to water quality.

---

<sup>1</sup> “Qualified professional” means a person with the appropriate training and/or licensing to prepare technical reports designed to prevent or minimize the discharge of waste and to conduct site inspections.

#### **IV. MONITORING CONDITIONS**

Each discharger enrolled in the Waiver contained in Attachment A shall conduct monitoring as specified in this attachment (as described below) and as required in the Implementation, Forensic and Effectiveness Monitoring and Reporting Program Order No. R5-2014-0144.

- A. Agency Monitoring<sup>2</sup>** –Waiver Category 1 through Category 5 shall be subject to Agency Monitoring. Dischargers enrolled in Waiver Category 1 and Category 5 (for minor/exempt projects only) need only be subject to Agency Monitoring.
- B. Implementation Monitoring<sup>2</sup>** – Dischargers shall conduct Implementation Monitoring as follows: (1) all Notices of Emergency or Exemption seeking coverage under Waiver Category 2, (2) THPs, NTMPs and other plans submitted and approved by CAL FIRE seeking coverage under Waiver Category 3 or 4; and (3) timber harvest proposals approved by the U.S. Forest Service (other than Forest Stand Improvement and/or Hazard Tree Removal Projects) seeking coverage under Waiver Category 5. Implementation photo-point monitoring will be required when the conditions listed in Attachment A, Category 4, Eligibility Criteria b. for soils, unstable areas and large watercourse crossings are present. Implementation photo-point monitoring may also be required if directed, in writing, by the Executive Officer. Implementation monitoring is considered the most critical monitoring type with respect to preventing water quality impairment.
- C. Effectiveness and Forensic Monitoring<sup>2</sup>** – Dischargers shall conduct visual Forensic and Effectiveness Monitoring, **in addition to Implementation Monitoring**, for the following: (1) Waiver Category 2 Emergency Notices involving fire salvage only, (2) Waiver Category 3 and 4 THPs, NTMPs and plans and (3) Waiver Category 5 timber sales or projects. Dischargers conducting timber harvesting activities under Waiver Categories 3 and 4 (nonfederal lands) that meet all the following criteria will **not** be required to conduct Effectiveness and Forensic Monitoring:
- No constructed or re-constructed Class I, II or Class IV (with domestic use) watercourse crossings.
  - No ground based equipment operations within Class I, II or IV (with domestic use) watercourse protection zones.
  - No winter operations within any Class I, II or IV (with domestic use) watercourse protection zones or on areas classified high or extreme erosion hazard rating.
  - No road construction or re-construction within 500 feet upslope of a Class I, II or IV (with domestic use) watercourse.
  - No landing construction or re-construction within Class I, II or IV (with domestic use) watercourse protection zones.
  - No heavy equipment operations on areas classified High or Extreme Erosion Hazard Rating that have potential to impact water quality.
  - No “in-lieu” or “alternative” practices that have potential to impact water quality.
  - No ground-based equipment used on slopes over 65 percent or slopes over 50 percent classified as High or Extreme Erosion Hazard Rating.

The U.S. Forest Service shall conduct Effectiveness and Forensic monitoring when: (1) the discharger’s cumulative watershed effects analysis indicates that the project,

combined with other U.S. Forest Service projects conducted in the watershed over the past 10 years, may cause any watershed or sub-watershed to exceed a threshold of concern as determined by various models (i.e., Equivalent Roaded Acres (ERA), Surface Erosion (USLE), Mass Wasting (GEO), etc.).

**D. Water Quality Compliance Monitoring<sup>2</sup>** – Dischargers shall conduct Water Quality Compliance Monitoring **in addition to Implementation, Effectiveness and Forensic Monitoring**, upon notice by the Executive Officer, when, for example, any of the following conditions are detected or reported:

- General or widespread failure of an active project to comply with CAL FIRE Forest Practice Rules or U.S. Forest Service BMP guidance documents or Waiver Criteria and Conditions regarding implementation of management measures relating to water quality protection.
- General or widespread failure of management measures relating to water quality protection due to improper implementation, installation or inadequate maintenance.
- Identification of discharges or threatened discharges of sediment and/or pesticides or increases in water temperature resulting from timber harvesting activities covered under the Waiver that are likely to cause or contribute to a violation of the applicable water quality control plan, including water quality objectives listed in Attachment 1.

Water Quality Compliance Monitoring Programs will be developed and issued by the Executive Officer on a site-specific basis. Water Quality Compliance Monitoring may be directed by the Executive Officer as a result of staff review of a Watercourse Assessment for “High Harvest” Watersheds submitted in accordance with Part III.C of this attachment.

**E. Assessment and/or Trend Monitoring<sup>2</sup>** – Dischargers shall conduct Assessment and/or Trend Monitoring **in addition to Implementation, Effectiveness and Forensic Monitoring and either in concert with or in lieu of Water Quality Compliance Monitoring**, upon notice by the Executive Officer, when, for example, any of the following conditions occur:

- Significant and recurring violations of sediment, turbidity, temperature or pesticide water quality control plan objectives in a Class I CalWater Planning Watershed.
- Identification of an immediate and long-term threat to critical downstream beneficial uses resulting or that could result from timber harvesting activities conducted in a CalWater Planning Watershed.
- Harvesting in areas tributary to 303(d) listed waterbodies where timber harvesting activities threaten to significantly delay recovery of the waterbody.

<sup>2</sup> The Executive Officer may increase or decrease the monitoring level for specific timber harvesting proposal(s) as site conditions and risk to water quality dictates.

Assessment and/or Trend Monitoring Programs will be developed and issued by the Executive Officer on a site-specific basis. Assessment and/or Trend Monitoring may be directed by the Executive Officer as a result of staff review of a Watercourse Assessment for "High Harvest" Watersheds submitted in accordance with Part III.C of this attachment.

#### **F. General Reporting Requirements**

Submission of Monitoring Reports and Data – The discharger shall submit all required monitoring reports to the Central Valley Water Board in accordance with the reporting requirements specified in Implementation, Forensic and Effectiveness Monitoring and Reporting Program No.R5-2014-0144 and any other monitoring and reporting program issued by the Executive Officer. The discharger shall also report monitoring data and results, in a timely manner, for all water quality related monitoring conducted independent of the requirements of this Waiver.

Violation and Failure Reporting - The discharger shall report as soon as possible by telephone, but no later than 48 hours after detection of any of the following:

- Discharge(s) resulting in violation of an applicable Basin Plan requirements
- Failure of a major management measure(s) (large fill area, watercourse diversion, major road or skid trail failure within or adjacent to a watercourse protection zone)
- New landslide activity that may discharge sediment to watercourses
- Violation(s) of eligibility criteria or conditions specified in Attachment A.

A written report regarding such violation(s) and/or management measure failure(s) including planned or implemented corrective actions shall be submitted within 14 days following detection. The written report shall include all information specified in the Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-0144.

#### **V. MONITORING AND REPORTING PROGRAM ISSUANCE**

The Executive Officer shall issue, to all dischargers upon their enrollment in the Waiver, Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-0144. The Executive Officer may issue site-specific and individually developed Water Quality Compliance and Assessment/Trend watershed scale monitoring and reporting programs in accordance with these Monitoring and Reporting Conditions (Attachment B). The Executive Officer may also revise and re-issue Monitoring and Reporting Programs at any time. The discharger shall comply with all Monitoring and Reporting Programs issued under this Waiver.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ATTACHMENT C  
**IMPLEMENTATION, FORENSIC AND EFFECTIVENESS  
MONITORING AND REPORTING PROGRAM  
ORDER NO. R5-2014-0144  
FOR  
INDIVIDUAL DISCHARGERS  
UNDER  
WAIVER OF WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES RELATED TO TIMBER HARVESTING ACTIVITIES**

This Monitoring and Reporting Program (MRP) Order presents requirements for visual field monitoring of individual timber harvesting projects enrolled in the Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvesting Activities (Waiver). This MRP is issued pursuant to Water Code sections 13267 and 13269, subdivision (a). This MRP implements conditions required by the Waiver and the Monitoring and Reporting Conditions (Attachment B) of Regional Board Order R5-2014-0144 for conducting Implementation, Forensic and Effectiveness monitoring for timber harvesting activities enrolled in the Waiver under Categories 2 through 5. All timber harvesting activities enrolled under Waiver Categories 2 through 5 shall comply with this MRP Order unless a revised MRP is issued by the Executive Officer.

This Monitoring and Reporting Program has been developed to assure compliance with requirements of applicable water quality control plans (Basin Plans) and to verify the adequacy and effectiveness of the Waiver's conditions.

**INSPECTION PLAN**

The discharger shall prepare and implement an Inspection Plan for evaluating the implementation and effectiveness of management measures installed to comply with Waiver eligibility criteria and conditions for the following:

- Accepted Exemption and Emergency Notices (Category 2 only), Timber Harvesting Plans (THPs), Non-industrial Timber Management Plans (NTMPs), and other Plans approved by the Department of Forestry and Fire protection (CAL FIRE).
- Sales and projects approved by the United States Forest Service (USFS) except Forest Stand Improvement and Hazard Tree Removal projects.

The Inspection Plan shall be designed to ensure that management measures are installed and functioning prior to rain events, that the measures were effective in controlling sediment discharge sources throughout the winter period, and that no new sediment sources developed. The Inspection Plan shall include a monitoring point (inspection location) site map, for THPs and timber sale projects that exceed 100 acres in size. The site map shall include monitoring points (inspection locations) to be visited before, during and after the winter period. Monitoring points are further described as follows:

- *Visual Monitoring Points* - Visual monitoring points shall be delineated on the monitoring point site map and include roads, watercourse crossings, landings, skid trails, water

diversions, known or suspected landslides and all accessible watercourse confluences.

- *Photo-Point Monitoring Points* – Photo-point monitoring points shall be delineated on the monitoring point site map and shall be identified in the field by use of rebar, flagging or other method that will last throughout the active discharge period of the proposed project. Implementation photo-point monitoring is automatically required when conditions listed for soils, unstable areas and large watercourse crossings in Category 4, Eligibility Criteria b. are present. Forensic photo-point monitoring is required when a significant discharge of sediment is detected or when failed management measures cause or may cause the release of 10 cubic yards (or more) of sediment to watercourses. Photo-point monitoring is required when Effectiveness Monitoring indicates that there were management measure failure(s) that resulted in a significant discharge of sediment to a Class I or Class II watercourse. Effectiveness photo-point monitoring shall include photos of streambed conditions immediately downstream of areas where significant discharges of sediment occurred. Monitoring points for Category 3 (nonfederal lands) will be determined during the pre-harvest inspection when Regional Board staff is present.

Inspection Plans shall be maintained and updated as needed by the discharger and/or agents thereof. Inspection Plans shall be submitted to the Regional Board upon request, in writing, by the Executive Officer, and those Inspection Plans shall be made available to the public.

## SITE INSPECTIONS

**Implementation Monitoring** - Implementation monitoring site inspections conducted prior to the winter period shall be designed to assure that management measures are properly installed. A “final compliance report” or “work completion report” inspection, conducted by CAL FIRE prior to the winter period and after cessation of active harvesting and road construction, may be substituted for the required pre-winter inspection if the inspection covers the entire plan area and the report is submitted to the Regional Board before December 1.

**Forensic Monitoring** – Forensic monitoring inspections shall be conducted during the winter period and shall be designed to detect potentially significant sources of pollution such as failed management measures or natural sources. The goal of winter forensic monitoring is to locate sources of sediment production in a timely manner so that rapid corrective action may be taken where feasible and appropriate. Winter forensic monitoring may also assist in determining cause and effect relationships between hillslope activities (harvesting, road construction etc.), hydrologic triggers and instream conditions. When conducting forensic monitoring, the discharger shall also perform visual monitoring of roads, watercourse crossings, landings, skid trails, and known landslides to the extent feasible.

**Effectiveness Monitoring** – Effectiveness monitoring inspections shall be conducted following the winter period and shall be designed to determine whether hillslope conditions created by timber operations are resulting in instream conditions that visually appear to comply with water quality objectives and protect instream beneficial uses, determine whether Waiver criteria and conditions, on a programmatic scale, are adequately protecting water quality and instream beneficial uses and assist in development of waiver conditions and adaptive management

processes to assure compliance with Basin Plan requirements.

The type of monitoring to be conducted for an individual timber harvesting project (Implementation, Forensic and Effectiveness monitoring) shall be determined by the criteria listed in Waiver Attachment B, Part IV "Monitoring Conditions" or as otherwise directed, in writing, by the Executive Officer. Site inspections shall be conducted by qualified professionals<sup>1</sup>.

### INSPECTION SCHEDULE

**Implementation Monitoring** - Implementation monitoring inspections shall be initiated once the startup of timber harvesting activities begin within an area covered by a Notice or Plan (nonfederal lands) or sale or project (federal lands) and shall continue throughout the duration of the project while timber harvesting activities occur and until discharges associated with timber harvesting activities cease. Implementation inspections shall be conducted as follows:

- *Where Timber Harvesting Activities Have Not Yet Commenced*  
No inspections required.
- *Where Timber Harvesting Activities Have Commenced and No Winter Operations are planned.*  
A pre-winter Implementation inspection shall be completed **by October 15 (but not later than November 15) of each year** to assure that management measures are in place and secure prior to the winter period. Note: As indicated above, an inspection conducted by CAL FIRE may satisfy this pre-winter period inspection requirement.
- *Where Timber Harvesting Activities Have Commenced and Winter Operations are Planned*  
A pre-winter implementation inspection shall be completed **by October 15 (but not later than November 15) of each year** to assure that management measures, for areas not subject to winter operations, are in place and secure prior to the winter period. An Implementation inspection shall be completed **immediately following cessation of winter period operations**, in areas where winter operations occurred, to assure management measures are in place and secure.

**Forensic Monitoring** - Forensic monitoring inspections shall be conducted during the winter period to determine the condition of installed management measures and to detect sediment discharges resulting from failed management measures and general timber harvesting activities. Forensic monitoring shall take place at least two times during the winter period, as follows:

- **Once**, during or within 12 hours following a 24-hour storm event of at least 2 inches (of rainfall) and after 5 inches (of total precipitation) has accumulated **after November 15 and before April 1**. Inspections that cannot be conducted during or within 12 hours of

---

<sup>1</sup> "Qualified professional" means a person with the appropriate training and/or licensing to prepare technical reports designed to prevent or minimize the discharge of waste and to conduct site inspections.

such a storm event (due to worker safety, access or other uncontrollable factors) shall be conducted as soon as possible thereafter.

- **Once**, during or within 12 hours following a 24-hour storm event of at least 2 inches (of rainfall) and after 15 inches (of total precipitation) has accumulated **after November 15 and before April 1**. Inspections that cannot be conducted during or within 12 hours of such a storm event (due to worker safety, access or other uncontrollable factors) shall be conducted as soon as possible thereafter.

Additional Forensic Monitoring inspections shall be conducted if the following “observation trigger” occurs:

- A noticeable significant discharge of sediment is observed at any time in any Class I or Class II watercourse. Photo-point monitoring shall be conducted when such discharge is the result of failed water quality protection management measure(s) or lack of implementation of such measure(s).

Follow-up forensic monitoring inspections shall be conducted until corrective action is completed to repair or replace failed management measures and/or significant sediment discharges have ceased.

**Effectiveness Monitoring** - An Effectiveness monitoring inspection shall be conducted as soon as possible following the winter period to determine the effectiveness of management measures in controlling discharges of sediment and in protecting water quality. The Effectiveness monitoring inspection shall take place as follows:

- **After March 15 and before June 15** to assess the effectiveness of management measures designed to address controllable sediment discharges and to determine if any new controllable sediment sources have developed.

The Effectiveness monitoring inspection shall include visual inspection of hillslope components (roads, landings, skid trails, watercourse crossings and unstable areas). If the visual inspection of hillslope components reveals significant management measure failure(s), a visual inspection of instream components (bank composition and apparent bank stability, water clarity and instream sediment deposition) shall also be conducted.

## REPORTING

**Annual Reporting** - The discharger shall submit an Annual Monitoring Report to the Executive Officer by **July 15** for inspections covering the previous winter period for every year a timber harvesting activity is enrolled in the Waiver. An Annual Monitoring Report need not be submitted for timber harvesting activities that were started after the winter period until the following year. The Annual Monitoring Report shall, at a minimum, include the date and type of each inspection, the inspector’s name and title, the location of each inspection including the name and number of the plan, notice, sale or project, and the title and name of the person submitting the report, the inspection findings (including any photographs taken with date and time clearly delineated) and shall describe how the discharger has complied with the

IMPLEMENTATION, FORENSIC AND EFFECTIVENESS MONITORING AND REPORTING PROGRAM NO. R5-2014-0144 FOR INDIVIDUAL DISCHARGERS UNDER THE WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES RELATED TO TIMBER HARVESTING ACTIVITIES

requirements of this MRP. A discharger may submit a single Annual Monitoring Report for all timber harvesting activities conducted for the year under a CAL FIRE approved Sustained Yield Plan. The timely submittal of a USFS BMP evaluation report will satisfy the reporting requirement for implementation monitoring for federal lands.

**Violation Reporting** - The discharger shall report as soon as possible by telephone, but no later than 48 hours after detection, any violation or suspected violation of an applicable water quality control plan requirement, failure of a major management measure (large fill area, watercourse diversion, major road or skid trail failure within or adjacent to a watercourse protection zone), any new landslide activity that may discharge sediment to watercourses, and any violation of Eligibility Criteria or Conditions listed in the Waiver. A written report regarding such violation(s) or management measure failure(s) shall be submitted within 14 days following detection and shall include the following:

- Date violation(s) or failure(s) was discovered
- Name and title of person(s) discovering violation(s) or failure(s)
- Map indicating location of violation(s) or failure(s)
- Nature and extent of violation(s) or failure(s)
- Photos of site characterizing violation(s) or failure(s)
- Corrective management measures implemented to date
- Implementation schedule for additional corrective actions
- Signature and title of person preparing report

The Executive Officer may modify or rescind this MRP at any time, or may modify and issue an MRP as to a specific discharger.

Ordered by

\_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer