

**CALIFORNIA NATIVE PLANT SOCIETY**

DRAFT 4  
11/17/99

**TIMBER HARVESTING PLAN  
HANDBOOK**

DAVID H. CHIPPING  
V.P. CONSERVATION

**WARNING! THIS DOCUMENT MAY CONTAIN UNDETECTED ERRORS IN FACT  
OR INTERPRETATION, AND SHOULD NOT BE USED AS A SOURCE IN ANY  
LEGAL ACTION.**

## PREFACE

This document is designed to help CNPS chapters review a Timber Harvesting Plan (THP). At the time of this edition, CNPS finds that the THP, while serving to reduce environmental damage, fails to adequately address environmental considerations and is part of a process that has resulted in a systemic degradation of California's fisheries and waterways, and a loss of biodiversity. Problems in the THP process were addressed by the Little Hoover Commission in 1993, which is often quoted herein. Review of this document by several Registered Professional Foresters (RPFs), indicates that they feel it to be overly antagonistic against the profession. One reviewer writes:

"While there is certainly a section on supporting RPFs who protect the resource, there is a preponderance of suggestions to castigate, challenge, document failures, prepare for lawsuits, as well as references to lack of RPF, BOF and CDF honesty and competence."

and

"Why focus so much on those that you risk the loss of opportunities for positive influence on individual RPFs, plans, policies and even the regulatory review process?"

To RPFs reading this document, CNPS does not regard the typical RPF as unethical in any way. We agree with the reviewer that the problem lies much more with the Board of Forestry, and with the weak environmental standards associated with THP's. CNPS agrees with the Little Hoover Commission that the process is flawed, and therefore an RPF working to fulfill the mandates of the process may produce results that will make the environmental community unhappy. While the THP remains as a weak agent for environmental protection, CNPS must continue to challenge the process, and that can only be accomplished through the diligent collection of evidence. We would welcome a dialog with forester associations, and a quick resolution to the problems that currently plague the process. We believe that economic and environmental goals can be balanced with hard work, and dialog such as that used by the Quincy Library Group may resolve some issues. As far as CNPS is concerned, there is no balance at this time. This working Draft has been prepared at the request of northern California chapters wishing to have some guidance in the review of Timber Harvesting Plans. This edition has received some input from reviewers. For those that have actually reviewed THPs, there may be glaring errors and omissions. Please respond to me either by mail or by e-mail with comments that are specific to section, or which are general observations about the usefulness (or lack thereof) of what I have put together. I will take all comments, rewrite once again, and then pass it outside of CNPS for further review.

David Chipping  
1530 Bayview Heights Drive  
Los Osos, CA 93402-4412  
(805) 528-0914 phone and fax  
dchippin@calpoly.edu

## TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION	1
1.1 WHAT IS A TIMBER HARVESTING PLAN (THP)	1
1.2 FIRST THINGS FIRST	2
1.3 CNPS CONCERNS IN A THP	2
1.4 THE CONTENTS OF CFPR AND PERTINENT CALIFORNIA CODE	4
1.5 THP PROCESS TIMETABLE	5
1.6 WHERE ARE THPS FILED?	5
1.7 VARIANTS OF THE THP	6
1.8 NOTICING REQUIREMENTS, OR HOW DO YOU KNOW A THP IS TO TAKE PLACE?	6
1.9 HOW IS A THP REVIEW CONDUCTED?	6
1.10 THP APPEAL BY APPLICANT, COUNTY, HEAD OF AGENCY	7
1.11 USE OF A LAW SUIT	7
CHAPTER 2: SETTING UP A CHAPTER THP REVIEW	8
2.1 PREPARATION	8
2.2 THE THP REVIEW	9
2.3 POST REVIEW MONITORING	9
CHAPTER 3: GENERAL INFORMATION	10
3.1 PREPARER QUALIFICATIONS	10
3.2 DO THE MITIGATION REQUIREMENTS JUSTIFY APPROVAL?	10
3.3 BOARD CONSIDERS TIMBER AS DOMINANT USE IN A TPZ.	10
3.4 THE THP MUST ADDRESS AND MITIGATE FOR NON-TIMBER VALUES.	10
3.5 CUMULATIVE IMPACTS SHOULD BE CONSIDERED.	10
3.6 DEPARTURES FROM CFPR MUST BE DESCRIBED AND JUSTIFIED.	11
3.7 JUSTIFYING DEPARTURES FROM CFPR	11
3.8 SPECIAL CONDITIONS REQUIRING DISAPPROVAL OF PLANS	11
3.9 TIMBER HARVESTING PLAN DECISION DELAY	12
CHAPTER 4: TECHNICAL ASSESSMENT OF THP BY BOARD OF FORESTRY	13
4.1 REVIEW TEAM	13
4.2 FOREST DISTRICTS HAVE DIFFERENT RULES	13
4.3 EROSION HAZARD ESTIMATION	13
4.4 RESOURCE CONSERVATION STANDARDS FOR MINIMUM STOCKING	13
4.5 GROUP A AND GROUP B SPECIES	14
4.6 BOARD OF FORESTRY CUMULATIVE IMPACTS ASSESSMENT	14
CHAPTER 5: SILVICULTURAL METHODS	15
5.1 DOES THE PROPOSED CUT MEET SILVICULTURAL OBJECTIVES?	15
5.2 ARE ACREAGES FOR EVENAGED MANAGEMENT CORRECTLY SIZED AND LOCATED?	15
5.3 WHAT ARE REGENERATION METHODS USED IN UNEVENAGED MANAGEMENT	16
5.4 WHAT ARE THE ALLOWABLE INTERMEDIATE TREATMENTS?	18
5.5 ARE SPECIAL PRESCRIPTIONS IN OPERATION?	18
5.6 THE RPF'S JUDGMENT AND ALTERNATIVE PRESCRIPTIONS	18
5.7 EXCEPTIONS TO CFPR REGULATION OF CUTTING	18
5.8 SPECIAL HARVESTING METHODS FOR SOUTHERN DISTRICT	18
5.9 SUSTAINED FORESTRY PLANNING AND ITS INTENTIONS	18
5.10 SPECIAL CONSIDERATIONS IN THE HIGH USE DISTRICT	19
CHAPTER 6: HARVEST METHODS AND EROSION CONTROL	20
6.1 HOW IS FELLING CONDUCTED?	20
6.2 HOW ARE TRACTOR OPERATIONS CONDUCTED?	20
6.3 WERE CONTROLS ON CABLE YARDING, AND EQUIPMENT SERVICING OBSERVED?	20
6.4 WATERBREAK STANDARDS	20
6.5 WINTER OPERATIONS	20

6.6 TRACTOR ROAD WATER CROSSINGS	21
6.7 ALTERNATIVES TO STANDARD RULES	21
CHAPTER 7: TREATMENT OF WETLANDS AND SLASH	22
7.1 PROTECTION OF BENEFICIAL USES	22
7.2 IS THERE A SENSITIVE WATERSHED WITHIN THE THP?	22
7.3 TREATMENT OF LOGGING SLASH	22
CHAPTER 8: SPECIES PROTECTION	23
8.1 WHAT DOES CFPR SAY ABOUT PLANTS?	23
8.2 ARE SNAGS AND NEST SITES PROTECTED?	24
8.3 HOW ARE "SENSITIVE SPECIES" DEALT WITH BY THE BOARD OF FORESTRY?	24
8.4 HOW ARE SPECIES LISTED UNDER ESA AND CESA DEALT WITH?	25
8.5 PROTECTION OF WILDLIFE HABITAT	26
8.6 HOW ARE LATE SUCCESSIONAL STANDS TO BE TREATED?	26
CHAPTER 9: COASTAL COMMISSION SPECIAL AREAS (CCSTA) AND SPECIAL COUNTY STANDARDS	28
9.1 THP SPECIAL PREPARATION STANDARDS.	28
9.2 SILVICULTURAL METHODS IN A CCSTA	28
9.3 LOGGING ROADS AND LANDINGS	29
9.4 COUNTY RULES	30
9.5 ARCHEOLOGICAL AND HISTORICAL CONSIDERATIONS	31
APPENDIX A CUMULATIVE IMPACTS ASSESSMENT CHECKLIST	32
APPENDIX B - TECHNICAL RULE ADDENDUM NO. 2	33

## CHAPTER 1- INTRODUCTION

### 1.1 WHAT IS A TIMBER HARVESTING PLAN (THP)?

California's total land mass is 101 million acres, with 85 million acres of forest and rangeland. Productive forests (those capable of growing at least 20 cubic feet of industrial quality wood per acre each year with continuous management) comprise about 18 percent of the total land mass, or 18.544 million acres. Of that amount, 2.013 million acres are preserved from logging permanently, such as in parks and wilderness areas. Another 8.707 million acres is owned by the federal government, with logging activities and other uses administered by the United States Forest Service. That leaves 7.824 million acres -- or 47.3 percent of the loggable land -- potentially subject to the Timber Harvest Plan process. (Little Hoover Commission, 1993, using data from 1988).

Regulation in private forest land started with the Forest Practice Act in 1943, which basically prohibited cutting trees less than 18 inches in diameter. In 1951 some stream and fisheries protection standards were added, and in 1963 the state's enforcement powers were increased to allow injunctions that would halt operations or cancel permits.

In 1973 the Z'berg-Nejedly Forest Practice Act (FPA) recognized the multiple uses of the State's forest resources but also set out the primary goal of harvesting timber. In 1976 a court ruled that timber cutting was subject to review under the California Environmental Quality Act (CEQA), and in 1979, the newly revised Timber Harvest Plan process as functionally equivalent to an Environmental Impact Report. As you will see, from the environmental point of view, the current THP process falls far short of being a CEQA document, particularly in terms of public review and accessibility.

The relationship between CEQA and the preparation of a THP has been subject to litigation. In *EPIC v. Ross Johnson* (170 Cal.App.3d 604, A024754. Court of Appeal, First District, Division 5, California. July 25, 1985), the court ruled that the provisions of CEQA apply to a THP, which is not regulated just by California Forest Practices Regulations (CFPR) and FPA. This affirmed earlier rulings (*Gallegos v. State Bd. of Forestry*, supra, 76 Cal.App.3d 945, 142 Cal.Rptr. 86; *Natural Resources Defense Council, Inc. v. Arcata Nat. Corp.*, supra, 59 Cal.App.3d 959, 131 Cal.Rptr.172.). In the NRDC ruling the court stated that FPA and CEQA supplement each other, the former being a more general statutory scheme compared to FPA's more specific scheme. However the creation of an EIR under CEQA, and a THP under FPA are functionally equivalent statutory actions. Section 21080.5 of CEQA only exempts a THP from preparing an EIR (affirmed in *Seghesio v. County of Napa*, (135 Cal.App.3d 371, 185 Cal.Rptr. 224 Civ. 49970. Court of Appeal, First District, Division 2, California 1982), and does not provide blanket exemption of all CEQA requirements. For example, the Gallegos decision stated that the Board of Forestry must apply the same standards of response to public comment as are required by CEQA.

A THP may not be required in every case where timber is removed from private lands. Alternatives were described by the Little Hoover Commission, (1993):

(a) Modified Timber Harvest Plan -- Since July 1993, this process can be used if a timber owner has less than 100 acres and can meet 16 criteria indicating that there will be little environmental impact. Very few have been submitted, according to CDF.

(b) Non-industrial Timber Management Plan -- If an owner has less than 2,500 acres and is not in the business of manufacturing forest products, a management plan may be used. The owner must choose to use uneven-aged management methods (selectively harvesting trees) and must plan for sustained yield over time.

(c) Emergency Notice -- An emergency notice must be submitted to CDF before timber operations begin and is valid for 60 days (with a 60-day extension under certain circumstances). Emergencies that qualify for this process include the need to remove trees that are dead or dying from insects, disease or animal damage; trees that are damaged as a result of wind, snow, freezing weather, fire, flood, landslide or earthquake; trees that are dead or dying from air or water pollution; and removal of trees for the emergency construction or repair of roads.

(d) Conversion Exemption -- The conversion exemption allows someone to harvest less than three acres if they are going to convert the land to some other use. Department officials complain that this alternative is often abused by people who simply want to remove the timber but who have no intention of using the land for something else. But those who use the process claim that filing a Timber Harvest Plan is too expensive for such small areas and the

environmental effects are minimal. (note that BOF had tried to make ALL harvests on parcels of less than 3 acres exempt from FPA, but this was successfully challenged in Environmental Protection Information Center v. Board of Forestry . 43 Cal.App.4th 1011 No. A067903, Court of Appeal, First District, Division 2, California. March 18, 1996)

(e) Exemption -- An exemption is allowed when someone is harvesting Christmas trees, harvesting dead, dying or diseased trees or preparing a site for use through burning and herbicide application. Under this exemption, the owner does not have to submit a Timber Harvest Plan and a work-completion report, nor does he have to replant trees."

The number of emergency notices and exemptions totalled slightly more than 1,500 in 1989. By 1993, the number had skyrocketed to more than 8,000: 1,100 emergency notices and 6,959 exemptions. This far outstripped the 1,206 regular Timber Harvest Plans submitted for approval in 1993. In 1991 241,398 acres were covered in THPs, but exemptions totalled 1,181,028 acres. (Little Hoover Commission, 1993).

## 1.2 FIRST THINGS FIRST.

If you are going to be reviewing a Timber Harvesting Plan (THP), you will need a copy of the California Forest Practices Rules (CFPR) which implement the provisions of the Z'Berg-Negedly Forest Practices Act of 1973. A hard copy is probably the most useful, and can be obtained from David Chipping, or from CDF. It is also available on the World Wide Web, with the URL [http://ceres.ca.gov/env\\_law/fpa/reg/index.html](http://ceres.ca.gov/env_law/fpa/reg/index.html) See Chapter 2 of this handbook, which describes what a CNPS chapter might do to prepare itself for reviewing THPs.

It is critical that you understand the rules by which a THP is judged, as these provide the basis for legal challenge. This handbook will concentrate on issues of greatest interest to botanists, and will not pay as much attention to harvesting methods, program administration, and general aspects of CFPR, except where they directly affect vegetation.

Note that the Little Hoover Commission evaluation of the THP process describes it as large on process, and very poor on actual scientific review, so that it costs the property owner while doing little to protect the environment.(Little Hoover Commission, Timber Harvest Plans: A Flawed Effort to Balance Economic and Environmental Needs. Report #126, June 1994)

Reading CFPR, it is clear that the Board of Forestry is intent on maximizing timber yields, and is relatively insensitive to many other values of the forest, or at least does not provide any significant guidelines relative to protecting those values. For example, while defining scenic buffers (beauty strips), it defines a maximum width for the strips.

## 1.3 CNPS CONCERNS IN A THP

### 1.3.1 Impacts to species or communities of interest known to be present, or potentially present.

A timber operation can, especially in even aged management (clear cutting), reduce a landscape to stumps and debris. In clearing out vegetation, species other than the prime timber trees (such as redwood and Douglas fir) will be removed. The once semi-shaded forest floor is exposed to full sunlight and drying winds. Trees at the edge of cuts are subject to wind throw. Fog drip may be eliminated, rain impacts and runoff become more severe, and diurnal temperature fluctuations become more extreme. If rare plants are present, seed set may be prevented, or the habitat so altered, that the population no longer continues on the site. Replanting of a cut may involve application of herbicide to eliminate competition for the new trees.

When the THP site is known to CNPS members, plant occurrences may have been recorded to sources such as databases. CNPS must decide if the THP will impact valued populations, and if it will ask for modifications of the THP.

More commonly the site will not be familiar to CNPS volunteers. In assessing impacts to species or communities that might be present, the databases such as RareFind may provide the only information. CNPS should look at

nearby occurrences and relate them to habitats and plant communities thought to be present in the area of the THP. As neither CNPS or the Board of Forestry would know for sure if a species is present, the usual response from the Board is to notify the Forester about the potential for species presence, and to ask for avoidance in the design of the plan. This can subject the Forester to significant conflict of interest. CNPS should try to have a CDF&G representative from the THP assessment team insist on, and if possible, be present on, a pre-harvest inspection, but clearly this may not always take place. In that case, CNPS should ask for someone to be present on the inspection that is qualified to recognize plant species and their habitat. At the very least, CNPS should identify and contact the Forester to determine if he/she can recognize species of concern, and possibly provide a field identification guide. Registered notification to the Board of Forestry of the presence of species of concern, and recommendations for mitigation, should be sent by the chapter.

The Board of Forestry maintains its own list of "sensitive species", and CNPS should obtain the list from the regional office where the THP is filed. In the event that a species of concern to CNPS is not on the Board list, then CNPS should ask that it be included. The pertinent portions of CFPR are described in Chapter 8 of this handbook.

### 1.3.2 Cumulative Impacts on watershed or regional level.

CNPS should analyse the cumulative impacts of all THPs in the area, and of other landscape level alterations of the landscape on species of interest, and consider effects on sedimentation and erosion. The issue involves protection of old growth (late successional) forest, cumulative sediment impacts on streams and fisheries, degradation of water quality, and microclimate alteration. CNPS should also comment on type conversion and the cumulative loss on non-commercial species, and impacts to understory species. Relevant portions of CFPR can be examined in Appendices A and B of this Handbook. The Little Hoover Commission (1993) found that cumulative impacts analysis at the scale of watersheds was largely missing in THP review, and recommended processes such as Natural Community Conservation Plans to take a broader spatial and temporal landscape-scale view than that of the THP.

### 1.3.3 Mitigation of impacts

Mitigation for impacts recognized as significant by the Board, such as losses to a "species of concern" on the Board's list may be mandated by the Board prior to approval of the THP, or through regional "incidental take" permits if the THP is covered by a Habitat Conservation Plan, or they may be described by the Forester that designed the THP. It is important that CNPS understands the range of mitigations that are considered biologically valid by scientists before the mitigations of the THP are criticized. If possible, CNPS can provide 'dossiers' on the needs of species likely to be encountered in a THP. The Board maintains a separate list of "sensitive species", and will not require mitigation if species are not on this list.

### 1.3.4. Type conversion and loss of non-commercial species.

The Board of Forestry is under mandate to maximize the volume of the sustained yield of timber that can come from a parcel, and they or the Forester might declare a section of a THP to be understocked. This will often lead to the planting of fast growing commercial species into a landscape that they formerly did not occupy, with subsequent loss of the species that once occupied the site. This practice will lead cumulatively to a loss of biological diversity, and is a matter of concern.

### 1.3.5. Direct Impacts to wetlands through disturbance and removal of shade.

Rivers, streams, swamps, springs, seeps and bogs are part of the landscape of a forest, and may, with their attendant species, be at risk from timber operations. Impacts may be direct disturbance, or indirect by altered sunlight, heating of the water, and sedimentation. CNPS, whenever possible must identify wetlands, and address their protection in a critique of a THP.

### 1.3.6. Indirect effects.

The impacts of a THP may be felt offsite through landslide activity, earth and mud flows, increased water turbidity and related effects downhill and downstream of proposed timber operations. There is an extensive literature on the impacts of timber operations on sedimentation and landslides, and the degree of destruction to rivers and fisheries is testimony to the poor control and mitigation of past activities. CNPS may have allies in organizations dedicated to the recovery of fisheries, and in the Regional Water Quality Control Board, which is mandated under EPA to lessen

non-point source pollution. As they are also on the THP assessment team, a supportive relationship between CNPS and Water Quality is helpful. CNPS should register the indirect effects of past timber operations if a THP is to be challenged on the basis of cumulative impact

### 1.3.7. Impacts to animals.

CNPS reviewers should note the impacts of timber operations on the entire ecosystem, (not just the plants). Indirect effects on some animals, such as feral pigs, deer, and grazing cows, could have an adverse impact on plants, and impacts on plants may remove habitat for animals. [e.g. late successional forest with Northern spotted owl and Marbled murrelet.]

### 1.3.8. Accurate data and consistent management

CNPS needs to monitor the THP review and approval process for the integrity of its science, and for the validity of its conclusions. While the THP provides the equivalent of a CEQA review for a project, ESA and CESA still apply and can constrain actions. Clean Water Act standards also apply.

### 1.3.9. Increase in forest roads

A THP builds roads that then encourage off road vehicle use, and provide opportunity for the introduction of weeds and pathogens (e.g. Port Orford Cedar root disease). They also increase sedimentation and may cause landslides if poorly constructed. CNPS should be critical of road design where it will impact botanic resources and ecosystem integrity.

## 1.4 THE CONTENTS OF CFPR AND PERTINENT CALIFORNIA CODE

The following is the Table of Contents for California Forest Practice Rules (CFPR). Refer to appropriate code sections necessary to understand this Handbook's discussions.

### Title 14. California Code of Regulations

#### Chapter 4 California Forest Practice Rules

##### Introduction and Table of Contents

##### Subchapter 1: Abbreviations and Definitions

Article 1 Abbreviations and Definitions §895-895.1

##### Subchapter 2: Application of Forest Practice Rules

Article 1 Introduction §896

Article 2 Preparation and Review of Timber Harvesting Plans §898-898.2

Article 3 PRC 4555, Rule Review Procedures §900-903.2

##### Subchapter 3: Forest District Boundaries

Article 1 Districts §906-909.1

##### Subchapters 4, 5, & 6: Forest District Rules

Article 1 Introduction §911,931,951

Article 2 Ratings and Standards §912.5-912.9, 932.9,952.9

Article 3 Silvicultural Models §913-913.11,933-933.11,953.1-953.12

Article 4 Harvesting Practices and Erosion Control §914-914.9, 934-934.9, 954-954.9

Article 5 Site Preparation §915-915.4, 935-935.4, 955-955.4

Article 6 Water Course and Lake Protection §916-916.10, 936-936.10, 956-956.10

Article 7 Hazard Reduction §917-917.11, 937-937.11, 957-957.11

Article 8 Fire Protection §918-918.10, 938-938.10, 958-958.10

Article 9 Wildlife Protection Practices §919-919.16, 939-939.16, 959-959.16

Article 10 Violations of Rules Prior to Changes §920, 940, 960

Article 11 Coastal Commission Special Treatment Areas §921-921.9, 961-961.8

Article 12 Logging Roads and Landings	§923-923.8, 943-943.8, 963-963.8
Article 13 County Rules	§924-928.7
Article 14 Archaeological and Historical Resource Protection	§929-929.7, 949, 969
Article 13s County Rules (SOUTHERN DISTRICT)	§965-965.10

Subchapter 7: Administration

Article 1 Timber Operator Licenses	§1020-1030
Article 2 Timber Harvesting Plan	§1032-1052.3
Article 3 Timber Harvesting Plan Appeal Procedures	§1053-1056.6
Article 4 Timber Site Classification	§1060
Article 5 Standardized Stocking Sampling Procedures	§1070-1075
Article 6 Stocking Standards for Substantially Damaged Timberland	§1080-1080.5
Article 6.5 Non industrial Timber Management Plan Administration	§1090-1090.27
Article 6.75 Sustained Yield Plan	§1091.1-1091.14
Article 6.8 Program EIR and THP	§1092-1092.32
Article 7 Conversion of Timberland	§1100-1110

Chapter 4.5 Hearings [in Rule Counties]	§1115-1115.3
---	--------------

1.5 THP PROCESS TIMETABLE

After a THP is prepared by the Forester, it is submitted to the California Department of Forestry. The Department has ten days to examine the THP for completion. If the THP is found to be complete, it is accepted for filing. The Department then has 15 days to conduct a Pre-Harvest Inspection (a field inspection of the area to be harvested). Other government agencies such as Fish & Game, Water Quality, and Mines & Geology, may also participate in this inspection. After inspection, the Department of Forestry has 10 days to determine if the Plan conforms to all of the rules and regulations of the Forest Practice Act. If it does conform, then the plan is approved. While the whole process can sometimes be done in a shorter time, it usually takes a minimum of 45 days to get a Plan approved. It can take considerably longer if additional information is requested and extensions are granted. The typical time frame for doing all the field work, writing the plan, and getting it approved is approximately three to six months. (“Frequently Asked Questions on THPs” from CDF web page).

CNPS should note the very short written comment period of 15 days after the plan is accepted for filing. Public testimony and input may start either at the time the THP is filed, or at the end of a field inspection, but the Director has a further 10 days to consider this input. It may be possible to petition for a longer review period, but that is seldom granted.

1.6 WHERE ARE THPS FILED?

(a) For Alameda, Colusa, Contra Costa, Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Yolo and western Trinity counties:

Region Chief, California Dept. of Forestry and Fire Protection, Coast-Cascade Region  
 135 Ridgeway Ave  
 P.O. Box 670  
 Santa Rosa, CA 95401  
 6105 Airport Road, Redding, CA 96002

(b) For Butte, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Shasta, Sierra, Siskiyou, Sutter, Tehama, Yuba, and eastern Trinity counties:

Cascade Area Chief, California Dept. of Forestry and Fire Protection  
 6105 Airport Road, Redding, CA 96002

(c) For Alpine, Amador, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Merced, Monterey, San Benito, Stanislaus, Tuolumne, and Tulare counties:

Region Chief, California Dept. of Forestry and Fire Protection  
 Sierra-South Region  
 1234 East Shaw Avenue, Fresno, CA 93710

(d) For Imperial, Inyo, Los Angeles, Mono, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara and Ventura counties:

South Area Chief  
California Dept. of Forestry and Fire Protection  
2524 Mulberry Street, Riverside, CA 92501

## 1.7 VARIANTS OF THE THP

The majority of THPs are filed on commercial timberland (Timber Production Zones, or TPZs). Those in areas not zoned as TPZ, are called Non Industrial Timber Management Plans (NTMPs). A number of successive THPs can be reviewed at the same time as part of a Program Timber Harvesting Plan (PTHP), which requires an Program Timber Harvesting Plan Environmental Impact Report (PTEIR ) to be submitted and thereafter only requires a checklist to be submitted with each covered plan. The PTEIR conforms to CEQA, and requires mitigation of impacts to less than significant levels. THPs are otherwise independent of CEQA, with the THP review being the equivalent to the EIR or EA under CEQA. A "Modified THP" can be submitted if the cut area is to be less than 100 acres (Section 1051 of CFPR), provided certain limitations on cutting are in place.

## 1.8 NOTICING REQUIREMENTS, OR HOW DO YOU KNOW A THP IS TO TAKE PLACE?

Section 1037.3 CFPR states that the THP shall be open to public inspection at the CDF Regional Office. The Director, in accepting a THP for filing, must notify the planning department of the County, the Department of Fish and Game, the Regional Water Quality Control Board, the Department of Parks and Recreation, and, if appropriate, the Tahoe Regional Planning Agency or the local office that administers coastal zone policies. There are no requirements of where to place a notice of the plan, but all landowners within 300 ft. of the edge of the THP are notified by the Director in a Notice of Intent. In addition all landowners within 1000 ft of the boundary of the THP and along a Class I, II or IV watercourse, the County Clerk, and the local Ranger Unit headquarters receive a Notice of Intent. There are additional notice requirements in certain counties, particularly to schools that may be impacted by truck traffic. CNPS chapters should request to be a noticed party for all THPs in its area of interest, or locate a source for that information.

## 1.9 HOW IS A THP REVIEW CONDUCTED?

The Director has an Interdisciplinary Review Team (IRT) in place, consisting of representatives from the County (if so requested), the Department of Fish and Game, the Regional Water Quality Control Board, the Department of Parks and Recreation (If DPR lands borders the THP), and, if appropriate, the Tahoe Regional Planning Agency or the local office that administers coastal zone policies. If archeological issues are raised, a member of the Native American Heritage Commission will be included. The IRT is chaired by a representative of the Department of Forestry. The public may be present, but the degree of participation may limited by the chair. The THP is given to the IRT either before it is filed, or within 5 days after filing. If an IRT member does not concur with the chair, they can submit a separate written explanation to the Director, and the chair must explain the way in which he/she dealt with the same issues. The IRT can ask for or dismiss the need for a pre-harvest inspection. The IRT report must be received by the director within about 5 days. CNPS should note that there is no public representation on the IRT, or any opportunity for CNPS to give input. This exclusion of public input, and the fast processing of a THP were unsuccessfully challenged in *Lexington Hills Association v. State of California* (Court of Appeals of California, Sixth Appellate District, 200 Cal. App.3d 415,1988)

If a checklist THP is submitted, subsequent to the acceptance of a Program Timber Harvesting Plan (PTHP) and a Program Timber Harvesting Plan Environmental Impact Report (PTEIR ), there may be little or no review opportunity, as details of the plan are not described. The Environmental Protection and Information Center (EPIC) has noted that the California Department of Fish and Game, Water Quality Control Board and State Board of Equalization opposed the checklist due to their inability to review impacts and evaluate taxation on the sale.

The Little Hoover Commission (1993) found fault both with the agency review process as it currently operated, and in the general attitude of CDF in their interpretation of environmental review.

"One conclusion that can be drawn from the statistics is that CDF is operating true to the directive of the Z'berg-Nejedly Forest Practices Act to allow harvesting. The Timber Harvest Plan process is not blocking logging operations, though it may be making them more complicated or costly. Instead the process apparently is designed to allow harvesting while requiring measures to minimize damage to the environment -- a different standard than prohibiting harvesting to prevent damage to the environment."

In 1989 1,587 THPs were received for review, and in 1993 there were 1,206 plans. In 1993 CDF had a staff of 100 for THP review, but the Dept. of Fish and Game had just 12 staff to review endangered species and streambed impacts. As a result, only 20% of submitted plans were reviewed, presumably where databases indicated the species of concern may be present. The California Division of Mines and Geology has a staff of five, California State Parks has 1 staff position, and the Regional Quality Control Boards have 10 staff positions. It should be very evident that there would be little or no field checking by agency staff under such heavy work load, and it has caused the Little Hoover Commission to severely critique the review process as being heavy on "paperwork compliance" and poor on true review. Interestingly, the Commission also found that CDF, with its relatively large staff " ...complains that the increasing complexity of plans and required considerations during review have made it difficult to do a thorough, timely and accurate job." The plans themselves are getting fatter, expanding from 0.25 inches to 1.3 inches between 1989 and 1993. Perhaps the situation is best summed up by Dean Cromwell, Executive Director to CDF, in testimony to the Little Hoover Commission (1993):

"The bottom line is that each timber harvesting plan must have a record that supports the decision to approve or deny. To this end, most of CDF's staff time is spent in preparing a defensible record of decision rather than in doing field inspections."

#### 1.10 THP APPEAL BY APPLICANT, COUNTY, HEAD OF AGENCY

A THP decision can be appealed by the applicant, who can argue in a public meeting about required mitigation and restrictions, the County in a meeting where public input can be accepted, by agency heads (Department of Fish and Game, Regional Water Quality Control Board), but cannot be appealed directly by the public. CNPS would have to act through these entities that can legally appeal the plan. Only a PTEIR (see Section 1.6) would allow comment through the CEQA process. However, if a THP is approved that clearly violates the intent of other laws, such as CESA or the Clean Water Act, the Board may be subject to law suit. It may be in the interests of a Chapter to locate legal resources and potential assets in this regard.

Little Hoover Commission (1993) considered the lack of opportunity for public appeal of a THP to be a significant flaw in the process that forces the public to litigation. Alternatives to litigation such as mediation were suggested, but appear to be seldom used.

#### 1.11 USE OF A LAW SUIT

In the face of the limited ability for the public to appeal a THP, the only recourse may be to sue the Board of Forestry and the THP applicant regarding the failure to consider important issues, or decisions that might be considered arbitrary and capricious, or in violation of the goals of FPA and CEQA. There have been a considerable number of suits. After a THP is approved, the filing party must request a hearing within 90 days, although the hearing itself may take place after the 90 days have passed. (Dakin v. Board of Forestry 17 Cal.App.4th 681, No. A058202, July 30, 1993).

## CHAPTER 2: SETTING UP A CHAPTER THP REVIEW

There is a 15 day review period, starting at the time of THP filing or after an initial field inspection by CDF of the THP, and therefore any chapter planning to review needs to have information readily available. A consistent failure of the THP process is the apparent disregard of the review period by CDF.

Little Hoover Commission (1993) notes "For purposes of efficiency and postage savings, CDF sends out mass notifications of several Timber Harvest Plans at once to persons who have asked to be notified.....one person received on December 2, 1993 a notification about eight Timber Harvest Plans that had been mailed on November 30, 1993 by the department. The plans had different filing dates (November 23, 24 and 29), resulting in three separate close-of-comment dates: December 8, 9 and 14. This meant the person had six, seven and 12 days respectively to go to a CDF regional office, obtain copies of the Timber Harvest Plans, review and assess each, and then provide pertinent comments on eight plans."

### 2.1 PREPARATION

Locate a contact within the CDF office closest to you that receives THPs to receive a notice, or to ask where notice is posted. Locate a contact person in the CDF office. Each office keeps a list of the THP submissions of the last day and the last week.

Become familiar with CFPR. Understand cutting and restocking methods and regulations.

Obtain 7.5 inch topographic maps and orthophoto maps of areas likely to be the subject of a THP.

Obtain soil maps from NRCS, locate the soil descriptions section, and understand how to use this tool in the evaluation of a THP. Visit old cuts to examine how the land has fared, and attempt to establish a correlation between soils, slopes, and slope aspect with the stability of the land.

Find a soil scientist, soils engineer or geologist who might help you interpret aerial photographs for soil stability.

Plant distributional data, available in databases such as RareFind and from the CNPS Rare Plant Program botanist, can be used to prepare a list and maps of plants. Try to establish correlation between species and soils, elevation, slope, slope aspect, rainfall and other factors that might suggest the potential presence of a species. Consider the probability of annual plants being present.

If applicable, contact the local coastal commission office, or Tahoe Regional Planning Agency, to obtain the locations of special treatment areas in your vicinity. Locate the staff members who handle THPs.

Contact your county planning department to establish a relationship with the person/office that handles THPs.

If particular habitats that might be significantly damaged by logging are present, they should be prior to evaluating individual THPs.

If mitigation states that certain plants will be avoided, question when, how, and by whom the plant will be identified. A list of potential species specific identification problems should be prepared in advance.

Anyone reviewing THPs should attempt to tour potential areas that may be subject future timber operations to validate the presence of absence of plants and habitats of interest. These will be private lands, but access can sometimes be arranged. Be aware of, and heed the trespass laws.

Identify key staff in the Regional Water Control Boards, to validate sedimentation and turbidity issues. Similarly, CNPS should develop a relationship with groups such as WAFC and Audubon Society that may have an interest in the design of a THP and the conduct of the operator. Share information with the Resource Conservation District, fisheries organizations, and county planning staff.

Prepare a dossier on previous THPs concerning the degree to which the RPF deviated from standard CFPR procedures, the response of the Board to requested deviations, and the degree to which the actual plan violated requirements. Note use of tractors on steep slopes, failure to construct water bars on roads, and improper protection

of riparian areas etc. If oversight of timber operators by the Board is to be challenged through regulation or legislation, or if individual Board staff or RPFs are to be for negligence, then well documented evidence is essential. In actuality most THPs will have been conducted to design specifications, and the problems arise from the standards under which the RPF must operate.

## 2.2 THE THP REVIEW

Review the plan using the resources described in section 2.1

Examine the THP in regard to CFPR. CNPS should attempt to validate the descriptive facts of the plan, and, if possible, check those facts in the field. Some concerns about slope may be validated from the maps, but comments regarding stocking, the presence or absence of species and many other issues will only be able to be validated in the field. If wetlands or other valued habitats are present that are not described in the THP, they should be described, and if possible, located with GPS.

Address cumulative impact issues in regard to the specific impacts and mitigation described in the plan.

If CNPS is presented with a PTHP, use the PTEIR to express all concerns, as it may be the last chance for input. Subsequent THPs will probably be "checklist" THPs, which will provide no opportunity to comment, especially as they will contain little specific information.

## 2.3 POST REVIEW MONITORING

After planned timber operations take place, check the site for violations of the THP, and for practices allowed under the THP that have caused damage. In particular, document damage to plant resources that CNPS had commented on earlier. Document the results with care. If the RPF did a good job, note the fact in any communication to the Board. CNPS should praise the work of the RPFs that protect the resource, and challenge the practices of those that damage vegetation and watershed. Remember that RPFs are doing a needed job (and we all use wood), and most will do it well. Problems are often caused by failures of CFPR and the soft regulations of the Board concerning impacts and allowable deviations. Note that the Little Hoover Commission (1993) castigated the THP process for being too much driven by procedure, and too little by adequate plan monitoring.

If violations of a THP are found, it is handled through the administrative procedures of FPA. Large violations may or may not trigger a requirement that a THP be refiled. In *T.R.E.E.S. v. Cal. Dept. Forestry and Louisiana-Pacific Corporation*, (233 Cal.App.3d 1175, No. A050630, Court of Appeal, First District, Division 2, California, Aug. 30, 1991.), the court noted that, although the company was cutting trees in violation of the terms of the THP, there was no automatic requirement for a refile of the THP).

CNPS should contribute new information to a watershed-scale database to record type conversions, landslides caused by timber operations, and any other features considered under cumulative impact.

Collect evidence that could be used to challenge Board policies, the actions of the regional CDF office, or which might be used to illustrate a systemic failure to protect non timber assets. Use photos where possible.

## CHAPTER 3: GENERAL INFORMATION

### 3.1 FORESTER (RPF) QUALIFICATIONS

Section 896 (CFPR) states that plans must be produced by a Registered Professional Forester (RPF). Section 897 (CFPR) recognizes a large subjective element in resource evaluation by the RPF. It states "Due to the variety of individual circumstances of timber harvesting in California and the subsequent inability to adopt site-specific standards and regulations, these rules use judgmental terms in describing the standards that will apply in certain situations. By necessity, the Forester (RPF) shall exercise professional judgment in applying these judgmental terms and in determining which of a range of feasible (see definition 14 CCR 895.1) silvicultural systems, operating methods and procedures contained in the rules shall be proposed in the plan to substantially lessen significant adverse impacts in the environment from timber harvesting." The RPF will be "judgmental" regarding biological resources, and therefore the THP should be examined with care in view of potential lack of expertise regarding flora on the part of the RPF.

An RPF may use a THP filing checklist put together by the California Licensed Forester's Association and the Professional Foresters Examining Committee (an offshoot of the Board of Forestry). This can be downloaded from (<http://www.clfa.org/>), and could complement this document.

### 3.2 DO THE MITIGATION REQUIREMENTS JUSTIFY APPROVAL?

The THP replaces the EIR process under CEQA. Section 896 states that no THP shall be approved which fails to adopt feasible mitigation measures or alternatives from the range of measures set out or provided for in these rules which would substantially lessen or avoid significant adverse impacts which the activity may have on the environment. Section 897 states that persons who prepare plans shall consider the range of feasible silvicultural system, operating methods and procedures to seek to avoid or substantially lessen significant adverse effects. Section 898 notes that on TPZ lands, the "harvesting per se" of trees shall not be presumed to have a significant adverse impact on the environment. If the Forester indicates that significant adverse impacts will occur, the Forester shall explain in the plan why any alternatives or additional mitigation measures that would significantly reduce the impact are not feasible.

### 3.3 BOARD CONSIDERS TIMBER AS DOMINANT USE IN A TPZ.

The Timberland Productivity Act restricts use of lands zoned Timberland Production Zone to growing and harvesting timber. The goal of forest management on a specific ownership shall be the production or maintenance of forests which are healthy and naturally diverse, with a mixture of trees and under-story plants, in which trees are grown primarily for the production of high quality timber products and which meet the following objectives: A THP is meant to "achieve a balance between growth and harvest" (Section 897 (b) (1) (A)).

### 3.4 THE THP MUST ADDRESS AND MITIGATE FOR NON-TIMBER VALUES.

Section 897(b)(1)(B&C) (CFPR) requires that a THP should maintain functional wildlife habitat in sufficient condition for continued use by the existing wildlife community within the planning watershed; should retain or recruit late and diverse seral stage habitat components for wildlife concentrated in the watercourse and lake zones and as appropriate to provide for functional connectivity between habitats; should maintain growing stock, genetic diversity, and soil productivity.

### 3.5 NOTE THAT CUMULATIVE IMPACTS SHOULD BE CONSIDERED.

Section 897 (CFPR) notes that individual THPs shall be considered in the context of the larger forest and planning watershed in which they are located, so that biological diversity and watershed integrity are maintained within larger planning units and adverse cumulative impacts, including impacts on the quality and beneficial uses of water are reduced. These will be addressed in Chapter 4 , and are laid down in Board Technical Rule Addendum Number 2, Forest Practice Cumulative Impacts Assessment Process (see Appendix A and B of this Handbook). The Little Hoover Commission (1993) notes that the Technical Rule Addendum Number 2, while addressing cumulative impacts in the areas of watershed resources, soil productivity and biological resources, also stresses that " No actual measurements are intended." Little Hoover Commission continues "The result is that cumulative assessments are

merely guesswork that neither accurately define an existing baseline of information nor credibly predict the outcome after harvesting." The Commission did not seem to like the idea of cumulative impacts analysis being produced for each THP, due to fears of too much boilerplate and repetition in reports, and suggested other mechanisms such as the Natural Communities Conservation Program as the tool. In *East Bay Municipal Utility District v CDF and Georgia Pacific Corporation*, (43 Cal.App.4th 1113, No. A064890., Court of Appeal, First District, Division 4, California, 1996) the court ruled that CDF did not have to produce numerical sedimentation data to justify its assessment of cumulative impacts, and that stated methods for minimizing sediment impacts met the standard. On the other hand, in *Friends of the Old Trees v. Cal. Dept Forestry and L. Van Alstyne* ( Cal.App.4th 1383, No. A070588, Court of Appeal, First District, Division 5, California, Feb. 25, 1997), the court stated that the frontloading of a THP with mitigations to minimize impacts did not constitute a reason to forego cumulative impacts assessment.

### 3.6 DEPARTURES FROM CFPR MUST BE DESCRIBED AND JUSTIFIED.

The RPF can suggest that rules be modified for a particular THP, if by doing so the intent of the rules is maintained, and when the application of the rules would cause greater harm. The RPF must explain and justify in writing each proposed deviation, and demonstrate with results.

In defining an alternative to CFPR, the Director must reject that alternative if two agencies listed in 4582.6 of the PRC and 14 CCR 1037.3 have submitted written comments which lead the Director to the conclusion that the proposed alternative will not meet the intent of the Act and rules, and the agencies participated in the review of the plan, including any on-the-ground inspection.

### 3.7 JUSTIFYING DEPARTURES FROM CFPR

Section 898.1 (CFPR) states that "the Director shall not approve the plan unless the Director also determines that the benefits of the THP outweigh any significant, unavoidable adverse impacts." If the Director makes such a determination and approves the THP, the Notice of Conformance shall include an explanation of the basis for finding that the THP's benefits outweigh any unavoidable significant adverse impacts. The Director shall give consideration to the Legislature's objectives in enacting the Timberland Productivity Act of 1982 ("TPA") and the objectives of the TPA including sustained forest productivity. The TPA-associated benefits to be weighed against any significant avoidable adverse impacts shall include, but not be limited to:

(1) Ensuring consistency with the restriction of the use of TPZ lands to growing and harvesting timber and compatible uses; (2) Making cumulative progress toward: (a) realizing the productive potential of the forest resources of the state and (b) providing a favorable climate for long-term investment in forest resources, thereby discouraging the premature and unnecessary conversion of timberland to urban and other uses; and (3) Ensuring consistency with the Legislature's declaration that timber operations may reasonably be expected to and will occur on lands zoned TPZ.

In determining whether the public benefits of the THP outweigh any unavoidable significant adverse impacts pursuant to (g) above, the Director may request information as needed to evaluate potential job loss, negative economic impacts on the community, business closings, loss of property by owners, probable conversion to other uses, estate taxes and other factors as appropriate.

### 3.8 SPECIAL CONDITIONS REQUIRING DISAPPROVAL OF PLANS

Section 898.2 (CFPR) states that the Director shall disapprove a plan as not conforming to the rules of the Board if any one of the following conditions exist:

(a) Boundaries of the area to be harvested are not clearly delineated in the plan.

(b) Public acquisition of the parcel, for purposes which would be impaired by timber harvesting, is legislatively authorized, funded and imminent.

(c) There is evidence that the information contained in the plan is incorrect, incomplete or misleading in a material way, or is insufficient to evaluate significant environmental effects. The sufficiency of the information provided in a THP to evaluate significant environmental effects shall be judged in light of what is reasonable and necessary.

(d) Implementation of the plan as proposed would result in either a "taking" or finding of jeopardy of wildlife species listed as rare, threatened or endangered, by the Fish and Game Commission or Fish and Wildlife Service, or would cause significant, long-term damage to listed species. The Director is not required to disapprove a plan which would result in a "taking" if the "taking" is incidental and is authorized by a wildlife agency acting within its authority under state or federal endangered species acts.

(CNPS should note that the issue of 'take' can be resolved for the timber owner, but seldom for the species being taken, by the application of take permits under habitat conservation plans.)

(e) Implementation of the plan would irreparably damage plant species listed as rare or endangered by the Department of Fish and Game and when the timber owner fails to comply with F&GC 1913.

(f) Implementation of the plan as proposed would result in the taking of an individual Northern Spotted Owl prohibited by the Federal Endangered Species Act.

(g) Implementation of the plan as proposed would not achieve maximum sustained production of high quality timber products as provided for by the rules of the Board, and by the intent of the Act.

### 3.9 TIMBER HARVESTING PLAN DECISION DELAY

Section 901 (CFPR) states that the Director can delay making a decision to approve or disapprove a plan which has been filed only if he or she finds that it could result in immediate, significant and long-term harm to the natural resources of the state. In relation to ascertaining harm to the natural resources of the state, the words immediate, significant and long-term are construed to mean:

(a) "Immediate"- a period of time from the present to some future date that shall not be later than the end of the third timber harvest season following commencement of timber operations under a proposed plan.

(b) "Significant"- harm or damage which is substantial and threatens the use of forest-related benefits (i.e., other beneficial uses of the air, water, soil, fish or wildlife resources).

(c) "Long-term"- harm or damage that is of such a nature and of lasting duration which cannot be corrected within 3 timber harvest seasons following commencement of timber operations under a proposed plan.

## CHAPTER 4: TECHNICAL ASSESSMENT OF THP BY BOARD OF FORESTRY

### 4.1 REVIEW TEAM

Interdisciplinary Review Teams are discussed in Section 1.8 of this document. CNPS will not be allowed to participate directly in a team, but might be able to identify team members and provide them with pertinent information. It is recommended that all communication between CNPS and the Board of Forestry, the Review Team, the RPF and the timber owner be in writing, and copied to all parties, as a challenge to either the Board or to other agencies affected by the THP could result in litigation if there is a violation of the public trust.

### 4.2 FOREST DISTRICTS HAVE DIFFERENT RULES

Section 906 (CFPR) defines the boundaries of Forest Districts. Know which district you are in, as the regulations differ. The districts are: Coast, Northern, Southern, or High Use (Counties of Ventura, Santa Barbara, Los Angeles, San Bernardino, Orange, Riverside, Imperial, San Diego, Monterey, San Luis Obispo, and those portions of Placer and El Dorado lying within the authority of the Tahoe Regional Planning Agency.) CFPR gives precise boundaries, as will any CDF office where THPs are filed. The Coastal District consists of the western Coast Ranges including Santa Cruz County, the Northern lies north of a Bay-Area to Tahoe line, and west of the Coastal, and the Southern takes in all of the rest, except for the High Use areas. There are also special county rules, and special rules in Coastal Commission Special Areas. (see Chapter 9).

### 4.3 EROSION HAZARD ESTIMATION

Erosion hazard is discussed in CFPR at Section 912.5 for the Coast, 932.5 for the Northern, 952.5 for the Southern District.

This issue will be of interest to CNPS if erosion and sedimentation are likely to damage plant populations, if changes in the soil profile are going to lessen the survival chances for a native plant species, or on general grounds of good land stewardship. This item is usually of great interest to those trying to maintain water quality and spawning grounds for fish. It is probably the most contentious issue regarding even-age management and the creation of new timber roads. You will need NRCS soil maps, aerial photographs, and get a critical evaluation of the soil conservation strategies of the THP. (see Chapter 10). You will probably need the help of a soil scientist or geologist. You will also need an evidence file of the actual performance of previous THPs in controlling this problem. Such a file may reveal a systemic understatement of erosion potential, allowing a challenge of the data and cumulative impacts analysis of the THP.

CFPR examines erosion at a very coarse scale, and states "A proposed plan shall show the estimated erosion hazard ratings of the plan area, by areas, down to 20 acres (8.1 ha) if such a breakdown will change the estimated erosion hazard of individual areas. In the Coast District the plan shall show high and extreme erosion hazard ratings, by areas, down to 10 acres (4.047 ha) if such a breakdown will change the erosion hazard of the individual areas. To estimate the erosion hazard rating of any plan or portion thereof, the RPF shall follow the procedures and requirements contained in Board Technical Rule Addendum # 1, February 1st, 1990."

### 4.4 RESOURCE CONSERVATION STANDARDS FOR MINIMUM STOCKING

Sections 912.7, 932.7, 952.7 of CFPR address the distribution of uncut trees and planted new trees at the end of the operation. TPZ lands must be restocked after a harvest. CNPS seeks to preserve the genetic mix of the forest, to avoid monoculture stands with elimination of native trees that are not of commercial interest. There will be a stocking bias toward fast growing commercial trees. (CNPS has observed deliberate sabotage of stated goals in National Forest's (not private THPs) that a diverse forest will be produced from subsequent stocking, in some cases by planting up to three different species in the same hole.) Stocking bias can shortcut the normal succession when it is associated with programs of herbicide treatment of early successional vegetation.

The resource conservation standards of CFPR may be met with Group A and/or B commercial species (see section 4.5 of this Handbook). CFPR states that:

"the percentage of the stocking requirements met with Group A species shall be no less than the percentage of the stand basal area they comprised before harvesting. The site occupancy provided by Group A species shall not be reduced relative to Group B species. When considering site occupancy, the Director considers the potential long

term effects of relative site occupancy of Group A species versus Group B species as a result of harvest. If Group A species will likely recapture the site after harvest, Group B species do not need to be reduced. The time frames for recapturing the site shall be consistent with achieving maximum sustained . The Director may prohibit the use of Group A and/or B commercial species which are non-indigenous or are not physiologically suited to the area involved."

Exceptions may be approved by the Director if the THP provides the following information and those exceptions are agreed to by the timberland owner. The RPF must provide clear and convincing evidence on how using Group A non indigenous, or Group B species to meet the resource conservation standards will meet the intent of the Forest Practice Act as described in PRC Sec. 4513. The discussion shall include at least: the management objectives of the post-harvest stand, description of the current stand, including species composition and current stocking levels within the area of Group B species, and the percentage of the post-harvest stocking to be met with Group B species. (CNPS should review these 'objectives' with care).

The Coast District allows an exemption from the stocking standards of the Act for progeny, clonal, or provenance testing. (Section 912.8 (CFPR)) This may be of concern to CNPS regarding genetic interference with local stock.

#### 4.5 GROUP A AND GROUP B COMMERCIAL SPECIES

For all districts Commercial Species means those species found in Group A and those in Group B that are found on lands where the species in Group A are now growing naturally or have grown naturally in the recorded past.

##### Coast Forest District

Group A:- Coast Redwood, Incense Cedar, Douglas Fir, Port Orford Cedar, Grand Fir, California Red Fir, Western Hemlock, White Fir, Western Redcedar, Jeffrey Pine, Bishop Pine, Ponderosa Pine, Monterey Pine, Sugar Pine, Sitka Spruce, Western White Pine

Group B: -Tanoak, Golden Chinquapin, Red Alder,Pepperwood,White Alder, Oregon White Oak, Eucalyptus , California Black Oak , Pacific Madrone.

##### Northern Forest District

Group A: - Sugar Pine , White Fir, Coast Redwood, California Red Fir, Ponderosa Pine, Noble Fir, Jeffrey Pine, Douglas Fir , Western White Pine, Incense-Cedar, Lodgepole Pine, Port Orford Cedar

Group B: -Knobcone Pine, Sierra Redwood, Digger Pine, Golden Chinquapin, California Black Oak, Foxtail Pine, Oregon White Oak, White Alder, Tanoak, Monterey Pine, Mountain Hemlock, Pacific Madrone, Brewer Spruce, California Laurel, Englemann Spruce, Western Juniper.

##### Southern Forest District

Group A: -Coulter Pine, Douglas-Fir , Jeffrey Pine , California Red Fir , Ponderosa Pine , White Fir , Sugar Pine , Incense Cedar, Lodgepole Pine, Coast Redwood, Monterey Pine, Sierra Redwood, Western White Pine , Mountain Hemlock .

Group B:- White Alder, Pacific Madrone, Cottonwood (Populus fremontii)-California Black Oak, Eucalyptus, Tanoak

#### 4.6 BOARD OF FORESTRY CUMULATIVE IMPACTS ASSESSMENT

The cumulative impacts of many THPs in a single watershed have resulted in the decimation of fish populations, siltation of streams and other issues related to erosion and hydrology. Sections 912.9, 932.9, 952.9 (CFPR) contains the checklist used by the RPF, and is placed in its entirety in Appendix A of this CNPS Handbook. It is followed in Appendix B by Board of Forestry Technical Addendum #2 (on Cumulative Impact) in its entirety. As this is a functional operating procedure for the RPF, each item should be used in the independent review of the THP. Are all of the issues addressed? Are they misinterpreted? Please note the comments on cumulative impacts in Section 3.5 of this document.

## CHAPTER 5: SILVICULTURAL METHODS

CNPS reviewers should understand different harvest methods, and consider which would be preferable for CNPS purposes. Much of this chapter is copied directly from CFPR Subchapters 4,5 & 6, Article 3, and may not apply directly to CNPS concerns. However CNPS should always review "stocking goals", which reflect the selection and density of replanted species that will repopulate the site. The Board can consider a site that is low in commercial species to be "understocked", and recommend some form of type conversion. In some areas, oak may be removed to make room for softwood. CFPR wildlife regulations hinge only on species protection, and not habitat conversion.

### 5.1 DOES THE PROPOSED CUT MEET SILVICULTURAL OBJECTIVES?

Article 3, Sections 913, 933, 953 (CFPR) has "Silvicultural Objectives" that state:

"The THP shall designate one or a combination of regeneration methods. These will be taken from (a) Regeneration methods, intermediate treatments and prescriptions described in the rules which establish standards, (b) Published yield tables or other tools, or (c) The Sustained Yield Plan: The SYP establishes the flow of forest products from managed timberlands, and shall demonstrate the achievement of maximum sustained production."

CFPR Sections 913.1, 933.1, 953.1 deal with "Evenaged Management", or clearcutting, including 'seed tree' and 'shelterwood' methods that achieve the total clearance of the original timber stock over several years. CFPR Sections 913.2, 933.2, 953.2 deal with selection cutting and other silvicultural methods.

### 5.2 ARE ACREAGES FOR EVENAGED MANAGEMENT CORRECTLY SIZED AND LOCATED?

Sections 913.1, 933.1, & 953.1 of CFPR address the size and placement of evenaged timber operations. The following section of the Handbook is a slightly modified copy of those sections.

(1) Where a regeneration step harvest of evenaged management will occur on stands younger than 50 years of age for Class I\* lands, 60 years of age for Class II\* and III\* lands, or 80 years of age for Class IV\* and V\* lands, or equivalent age of trees, based on height as determined according to the appropriate site class, the RPF preparing the THP or SYP must demonstrate how the proposed harvest will achieve maximum sustained production pursuant to Section 913.11(a) or (b) provided, however, that the Director may grant an exemption from this section based upon hardship (CNPS reviewers should take careful note of the 'hardship' of multinational corporations).[\* see Appendix C for Timber Site Classification].

(2) The regeneration harvest of evenaged management is usually limited to 20 acres for tractor yarding. Aerial or cable yarding may be allow the area to be increased to 30 acres. Tractor yarding may be increased to 30 acres where the erosion hazard rating is low and the slopes are < 30%. The RPF may propose increasing these acreage limits to a maximum of 40 acres.

(3) Evenaged regeneration units within an ownership shall be separated by a logical logging unit that is at least as large as the area being harvested or 20 acres, whichever is less, and shall be separated by at least 300 ft. in all directions.

(4) Within ownership boundaries, no logical logging unit contiguous to an evenaged management unit may be harvested using an evenaged regeneration method unless the following are met:

Coast District: The prior evenaged regeneration unit has an approved report of stocking, and the dominant and codominant trees average at least five years of age or average at least five ft. tall and three years of age from the time of establishment on the site, either by the planting or by natural regeneration. If these standards are to be met with trees that were present at the time of the harvest, there shall be an interval of not less than five years following the completion of operations before adjacent evenaged management may occur.

Northern and Southern Districts: The prior evenaged regeneration unit has an approved report of stocking, and the dominant and codominant trees average at least five feet tall, or at least five years of age from the time of establishment on the site, either by the planting or by natural regeneration. If these standards are to be met with trees that were present at the time of the harvest, there shall be an interval of not less than five years following the completion of operations before adjacent evenaged management may occur.

(5) Except for the clearcut method, all trees to be harvested or all trees to be retained shall be marked by, or under the supervision of, the RPF prior to felling operations. A sample area shall be marked prior to a preharvest inspection. The sample area shall include at least 10% of the harvest area up to a maximum of 20 acres per stand type, and must be representative of the range of conditions present in the area. CNPS should be prepared to examine marks prior to the approval of the THP, and check after the cut to ensure that the cut boundaries were respected, and that there was no timber theft.

(6) Special consideration for aesthetic enjoyment shall be given to selection of silvicultural treatments and timber operations within 200 feet of the edge of the traveled surface of any permanent road maintained by the County, or the State.

(7) Special consideration for aesthetic enjoyment and protection of adjacent stand vigor shall be given to the selection of silvicultural methods and timber operations within 200 feet of adjacent non-federal lands not zoned TPZ.

### 5.3 WHAT ARE REGENERATION METHODS USED IN UNEVENAGED MANAGEMENT [NOTE VARIATIONS BY DISTRICT] ( CFPR SECTIONS 913.2, 933.2, 953.2)

Unevenaged management is utilized to establish and maintain an unevenaged stand structure. Unevenaged management attributes include the establishment and/or maintenance of a multi-aged, balanced stand structure, promotion of growth on leave trees throughout a broad range of diameter classes, and encouragement of natural reproduction.

(a) Selection Under the selection regeneration method, the trees are removed individually or in small groups sized from .25 acres to 2.5 acres.

(1) Trees to be harvested or trees to be retained shall be marked by or under the supervision of the RPF prior to felling operations. When openings greater than .25 acres will be created, the boundaries of the small group(s) may be designated in lieu of marking individual trees within the small group areas. A sample area must be marked prior to a preharvest inspection for evaluation. The sample area shall include at least 10% of the harvest area up to a maximum of 20 acres per stand type which is representative of the range of conditions present in the area.

(2) Post harvest stand stocking levels shall be stated in the THP. The level of residual stocking shall be consistent with maximum sustained production of high quality timber products. In no case shall stocking be reduced below the following standards:

#### (A) Selection System.

1. On Site I lands at least 125 [Coast], [100 Northern & Southern] square feet per acre of basal area shall be retained.
2. On Site II and III lands at least 75 square feet per acre of basal area shall be retained.
3. On Site IV and V lands at least 50 square feet per acre of basal area shall be retained.
4. Unless the plan submitter demonstrates how the proposed harvest will achieve MSP pursuant to Section 913.11 (a) or (b), the residual stand shall contain sufficient trees to meet at least the number, size, and phenotypic quality of tree requirement specified under the seed tree method.

#### (B) Group Selection.

1. At least 80% of the stocked plots must meet the Basal Area stocking standards of 913.2(a)(2)(A), [933.2(a)(2)(A); 953.2(a)(2)(A)].
2. Not more than 20% of the stocked plots may meet stocking standards utilizing the 300 point count standard with trees that are at least 10 (ten) years old.

3. The RPF may offset up to 8 plots per 40 plots where those plot centers are initially placed within small group clearings created during the current harvest. Unless substantially damaged by fire, the RPF shall not exclude small group clearings created by previous timber harvesting from the stocking survey.

4. Unless the plan submitter demonstrates how the proposed harvest will achieve MSP pursuant to Section 913.11(a) or (b), the residual stand shall contain sufficient trees to meet at least the number, size, and phenotypic quality of tree requirements specified under the seed tree method.

(3) Within any THP, small group clearings under the selection method shall be separated by a logical logging area.

(4) Following completion of timber operations (including site preparation) not more than 20 percent of the THP area harvested by this method shall be covered by small group clearings.

(5) Exceptions to stocking standards in 913.2(a)(2), [933.2(a)(2), 953.2(a)(2)] above may be granted only when proposed by the RPF and explained and justified in the plan, but in no case will the exceptions be less than specified in 14 CCR 912.7 (b)(2), [932.7(b)(2), 952.7(b)(2)]. Exceptions may only be granted when the RPF clearly demonstrates that the existing stand will grow substantially less than both the potential site productive capacity and the proposed post harvest stand.

(b) Transition. The transition method may be used to develop an unevenaged stand from a stand that currently has an unbalanced irregular or evenaged structure. The transition method involves the removal of trees individually or in small groups from irregular or evenaged stands to create a balanced stand structure and to obtain natural reproduction.

(1) This method is used no more than twice to increase stocking and improve the balance of age classes so as to allow the residual stand to be managed by the selection or group selection method.

(2) Stands suitable for the transition method contain adequate quantity and quality of seed producing trees to provide maximum regeneration for new age classes. Stands suitable for this method have no more than 25 sq. ft. of basal area greater than the selection basal area standards. Area for determination of preharvest stocking levels shall be no greater than 20 acres in size if such a breakdown will change the stocking levels of individual areas.

(3) Trees to be harvested or trees to be retained shall be marked by or under the supervisor of the RPF before felling operations. A sample area must be marked before preharvest inspection for evaluation. The sample area shall include at least 10% of the harvest area up to a maximum of 20 acres per stand type which is representative of the range of conditions present.

(4) Immediately following the completion of timber operations on the first use of this method, the minimum basal area standards in 14 CCR 912.7(b)(2), [932.7(b)(2), 952.7(b)(2)] shall be met.

(5) Unless the plan submitter demonstrates how the proposed harvest will achieve MSP pursuant to Section 913.11(a) or (b), the residual stand shall contain sufficient trees to meet at least the number, size, and phenotypic quality of the leave tree requirements specified under the seed tree method.

(6) Following completion of timber operations (including site preparation) not more than 20 percent of the THP area harvested by this method shall be covered by small group clearings.

(7) No sooner than ten years following completion of the first entry with this method a second harvest using this method may be conducted.

(A) The standards of (1), (2), (3), (4), (5) and (6) above shall apply to the second entry.

(B) The THP submitter must provide the Director sufficient information such as growth and stand description to demonstrate that the standards of the selection method will be met for subsequent selection harvests.

(c) Within six months following completion of timber operations conducted pursuant to the selection and transition methods as described in the plan, a report of stocking shall be filed as stated in PRC Section 4587.

(d) In the absence of a Sustained Yield Plan, to maintain and improve tree species diversity, genetic material, and seed production, trees of each native commercial species where present at the time of harvest shall be retained after harvest. These leave trees shall be representative of the best phenotypes available in the preharvest stand. The RPF may propose and the Director may agree to a species specific plan in the THP which protects existing regeneration or provides for regeneration in-lieu of retaining trees.

#### 5.4 WHAT ARE THE ALLOWABLE INTERMEDIATE TREATMENTS? (SECTIONS 913.3, 933.3, 953.3)

It is a common practice to thin stands of trees in order to speed the growth and maximize the size of the remaining trees. Trees may also be removed in a 'sanitation salvage' that is meant to remove dead, dying or diseased trees. THPs under the 1995 Salvage Logging Rider were exclusively sanitation treatments. The CFPR defines the amount of basal area cross section per acre that would remain after the thinning, and these standards vary by district.

#### 5.5 ARE SPECIAL PRESCRIPTIONS IN OPERATION? (SECTIONS 913.4, 933.4, 953.4)

Certain areas may be defined as Special Treatment Areas, due to ecological, historical, or archeological reasons. CNPS should obtain a map of all such areas, with the special rules that govern them.

Some areas are considered to be "understocked", and harvests are guided to bring the area up to an acceptable stocking level. Statements about understocking might indicate that type conversion is going to be contemplated, and therefore native ecosystem integrity could be at risk (as it is not normally considered by CDF).

#### 5.6 THE RPF'S JUDGMENT AND ALTERNATIVE PRESCRIPTIONS (SECTIONS 913.6 933.6 953.6)

The RPF can assert that normally prescribed treatments may not work for a particular area, and may develop another method. In this case the THP must have a description of the stand before timber operations, a description of the management constraints (such as insects), a statement of why standard methods are not being used, an explanation of the effects of the proposed method on resource conservation such as habitat and soil conservation, and details of the harvest timetable and restocking program.

#### 5.7 EXCEPTIONS TO CFPR REGULATION OF CUTTING

The requirements of Article 3 do not apply when clearing rights of way, log landings, campsites and firebreaks, or in the harvesting of Christmas trees. (Sections 913.7, 933.7, 953.8).

#### 5.8 SPECIAL HARVESTING METHODS FOR SOUTHERN SUBDISTRICT (SECTION 913.7, 913.8)

The Southern Subdistrict of the Coastal District has special harvesting and restocking requirements. Section 953.7 requires that all non-commercial riparian vegetation found along streams and lakes and within meadows be retained and protected "insofar as practical".

Section 913.8 states that one option is to leave 40% of trees larger than 18 inch dbh uncut after the harvest. The section contains some complex allowances for trees of different size. If other methods are to be used, the crown canopy has to remain at least 50% intact. Clearcutting is allowed for eucalyptus.

An area cannot be reentered for a cut until five years are past, unless for sanitation-salvage cutting

#### 5.9 SUSTAINED FORESTRY PLANNING AND ITS INTENTS (SECTIONS 913.10, 913.11, 933.10, 933.11, 953.10, 953.11)

THP submitters are encouraged, but not required, to take measures to increase timberland productivity. When a Sustained Yield Plan or NonIndustrial Timber Management Plan has been submitted, a balance of growth and harvest is expected, and non-timber values are meant to be protected. This is also expected of the timberland owner even if a THP has not been submitted. For THPs the objectives are achieved through restocking to density standards only using Group A species, and by using seed tree retention standards.

#### 5.10 SPECIAL CONSIDERATIONS IN THE HIGH USE DISTRICT (SECTION 953.12)

Selective cutting rather than clear cutting is used, all cut trees must be tagged or marked prior to cutting, and the composition and distribution of the original stand should consider the aesthetics of the area. There is no reentry for 10 years, except for sanitation cuts.

## CHAPTER 6: HARVEST METHODS AND EROSION CONTROL

This section covers Article 4, Subchapters 4, 5 & 6 of CFPR. If CNPS finds that certain timber operators or Foresters are associated with substantial watershed damage, it would be worth bringing this to the attention of CDF. It is strongly recommended that all observations be photo-documented. Generally speaking, the RPF would have promised to reach certain standards in the THP, and there will be little to challenge to the promise unless it could be shown that either the RPF or the timber operator have a record of not performing in the field.

### 6.1 HOW ARE TREES TO BE CUT??

CFPR requires that felled trees should not destroy riparian areas, bird nesting areas, or non-target trees (except where "unavoidable"). Young commercial trees are to be protected.

### 6.2 HOW ARE TRACTOR OPERATIONS CONDUCTED?

Sections 914.2, 934.2 & 954.2 (CFPR) apply to all districts. Tractors should not operate on skid roads or slopes that are so steep as to require the use of the blade for braking. Tractor roads should be limited in number and width to the minimum necessary for removal of logs. Existing tractor roads should be used instead of constructing new tractor roads where possible. Heavy equipment should not operate on unstable areas. If such areas are unavoidable, the RPF should have developed specific measures to minimize the effect of operations on slope instability. Heavy equipment should not operate if slopes are steeper than 65%, on slopes steeper than 50% where the erosion hazard rating is high or extreme, or on slopes over 50% which lead without flattening to sufficiently dissipate water flow and trap sediment before it reaches a watercourse or lake.

In the Southern District there is an additional restriction for areas where terracing will exceed more than 50% of the surface, in which case heavy equipment should not operate if slopes are steeper than 40%, on slopes steeper than 30% where the erosion hazard rating is high or extreme, or on slopes over 30% which lead without flattening to sufficiently dissipate water flow and trap sediment before it reaches a watercourse or lake. Slope is averaged over a 20 acre site.

### 6.3 WERE CONTROLS OBSERVED ON CABLE YARDING, AND EQUIPMENT SERVICING?

Standards for these operations are provided in CFPR Sections 914.3, 934.3, 954.3, 914.5, 934.5, 954.5. This will probably not be an issue in CNPS review, except in cases where sites include plant populations of concern.

### 6.4 WATERBREAK STANDARDS

Sections 914.6, 934.6, 954.6 deal with the placement and distance between waterbreaks, which are small berms to divert water from roads and skid trails. These can be easily field checked.

TABLE 6.1

Est. Hazard Rating	Trail Gradient in percent			
	10 or less	11-25	26-50	>50
Extreme	100	75	50	50
High	150	100	75	50
Moderate	200	150	100	75
Low	300	200	150	100

### 6.5 WINTER OPERATIONS (CFPR SECTIONS 914.7, 934.7, 954.7)

Unless a winter operating plan is submitted, there are to be no heavy equipment operations in the winter, with the exception of aerial methods. If a plan is submitted it should address the erosion hazard, use of erosion control and other details, or if a plan is not submitted, the RPF can provide similar information to achieve the ends of minimizing erosion. Winter may be defined differently in some counties (see Chapter 9 of this Handbook).

#### 6.6 TRACTOR ROAD WATER CROSSINGS (SECTIONS 914.8, 934.8, 954.8)

A THP should minimize the number of crossings, and crossing structures should not impede fish. Any temporary structures should be removed prior to rainy season.

#### 6.7 ALTERNATIVES TO STANDARD RULES (SECTIONS 914.9, 934.9, 954.9)

Alternatives to standard rules may be applied by the RPF if he/she fully identifies and mitigates against losses from lowered water quality, and for impacts to residual timber and to soil productivity. These sections do not mention mitigation of impacts to sensitive species as a justification for deviating from standard rules

## CHAPTER 7: TREATMENT OF WETLANDS AND SLASH

CNPS often is interested in wetlands that could be impacted by a THP. Note that CFPR may encourage operators to enter wet meadows (see Chapter 8, this Handbook and Sections 939.15 , 959.15 of CFPR), as policy permits removal of trees from meadows to maintain wildlife habitat in the meadow. In the Northern and Southern Districts, all trees within meadows and wet areas may be clearcut and these are exempted from stocking provisions in order to attain or retain these areas for wildlife and livestock. With available information it is unclear if the balance between meadow and forest, which should be maintained by fire, is maintained best through cutting or from the removal of cattle. Regretably, the decline in fisheries and water quality in some areas strongly suggests a systemic failure of the Board and CFPR to adequately address the impacts of timber operations on rivers.

### 7.1 PROTECTION OF BENEFICIAL USES (CFPR SECTIONS 916, 936, 956 )

Water quality, restorability for fisheries, the biological needs of fish and wildlife species in riparian habitats, and sensitive near-stream conditions are meant to be protected by CFPR. Discharges into waterways that are deleterious to fish are meant to be prevented, and if some siltation is expected from operations, operations should be deferred until equipment is available to remove that siltation from the waterway. Operations are meant to stay out of wetlands, except for necessary crossings. Riparian and wetland vegetation is meant to be protected. In fish-bearing streams (Class I and II) only sanitation logging is allowed when canopy cover is less than 50%, and some trees of >16 inch dbh are to remain as future woody debris for the stream.

Stream protection involves assessing features such as water temperature, stream bed and flow modification, upslope stability and screening for organic and inorganic matter, bank and channel stability, and a diverse vegetation structure to provide microclimate, snags, and food. Exposures of mineral soil of greater than 800 sq. ft. are to be protected by soil erosion treatments when they are adjacent to Class I and Class II waters.

The protected area around a waterway or lake is called a Watercourse and Lake Protection Zone (WLPZ). Zone widths are given in Appendix D.

### 7.2 IS THERE A SENSITIVE WATERSHED WITHIN THE THP?

Sections 916.8, 936.8, 956.8 provide procedures for the nomination of a watershed as 'sensitive', the criteria being steepness, soil and slope instability, cumulative damage and habitat needs. CDF will consult with RWQCB, DFG, DMG and other state agencies, and decisions are open to public hearing.

### 7.3 TREATMENT OF LOGGING SLASH

CFPR sections 917, 937, 957 deal with the reduction of fire and insect risk after a timber operation through appropriate disposal of slash. Burning is restricted in the High Use District, and slash must be removed from areas close to roads and structures. Where Ips beetle is present, BOF Technical Rule Addendum No.3 deals with the treatment and removal of downed slash and other "brood material" for the beetle. This will probably not be of concern to CNPS, unless brush is piled over areas with bulbs or plants. CNPS should note that the routine application of herbicides and pesticides may have a deleterious effect on ecosystems, and is a subject of great controversy.

Sections 918, 938, 958 deal with fire prevention during the timber harvest, and this is not of concern to CNPS, unless plant requirements on or adjacent to the THP might depend on the time of year and severity of fire.

## CHAPTER 8: SPECIES PROTECTION

Most of this chapter is concerned with wildlife protection under a THP, and as such involves the preservation of habitat. To the extent that a nest site is protected by a buffer, the nest serves to protect plant life. Other conservation groups will consider this section the most important portion of the THP review, and as such CNPS should understand these issues and should seek cooperative challenges to THPs to strengthen our position. There is almost no specific language that protects plants per se in CFPR.

### 8.1 What does CFPR say about plants?

**Plants that are listed under State and Federal Endangered Species Acts as Threatened or Endangered, or under the Native Plant Protection Act as Rare, are protected to some extent. In addition CFPR protects “sensitive species” as listed by the Board of Forestry, although at this time there are no plants on this list. Key habitat areas may or may not have been designated “Special Treatment Areas”.**

**898.2 (d) (CFPR) states that one of the Special Conditions under which the Director can disapprove a THP is when “Implementation of the plan as proposed would result in either a “taking” or finding of jeopardy of wildlife species listed as rare, threatened or endangered by the Fish and Game Commission or Fish and Wildlife Service, or would cause significant, long-term damage to listed species. The Director is not required to disapprove a plan which would result in a “taking” if the “taking” is incidental and is authorized by a wildlife agency acting within its authority under state or federal endangered species acts.**

**898.2 (e) (CFPR) states another Special Condition to be “Implementation of the plan would irreparably damage plant species listed as rare or endangered by the Department of Fish and Game and when the timber owner fails to comply with F&GC 1913.”**

**CNPS should note the requirement for wildlife agency consultation, and the degree to which that agency was diligent in making that consultation may be an issue for legal challenge**

**Cumulative impacts to species are addressed in Technical Rule Addendum No. 2, which provides guidelines to addressing these impacts. It is uncertain as to the degree to which either the Foresters or the wildlife agencies actually track cumulative effects. For all Districts an entire watershed may be considered to be a “Sensitive Watershed” based on cumulative impacts that may include cumulative impacts to listed species (916.8, 936.8, 956.8 CFPR). There is an implication that as each THP should provide information on non-listed species being impacted (1034 CFPR), then such impacts should also be addressed under Cumulative Impacts assessment.**

**For all Districts, (915.3, 935.3, 955.3 CFPR), site preparation should conform to standards that minimize impacts to listed species, but exceptions are allowed if approved by California Dept. Fish & Game upon consultation.**

**1037.5 CFPR establishes Interdisciplinary Review Teams that include a member from by California Dept. Fish & Game to review THPs and to suggest mitigation to minimize impacts to listed species.**

**1038 CFPR allows exemptions to the filing of a THP provided the requirement is met that “No known sites of rare, threatened or endangered plants or animals will be disturbed, threatened or damaged.”**

**Riparian vegetation is weakly protected in the Southern District in 953.7 CFPR, stating “All noncommercial riparian vegetation found along streams and lakes and within meadows and wet areas shall be retained and protected insofar as practical.” Those last three words provide plenty of wiggle room. Riparian vegetation protection is developed for the protection of fisheries more than more any implied intrinsic botanic value. Protection standards can result in the definition of a WLPZ (Water and Lake Protection Zone) where “where additional**

**practices may be required for protection of the quality and beneficial uses of water, fish and riparian wildlife habitat, other forest resources and for controlling erosion.”**

**926.14 CFPR applies to Santa Cruz County and states “In addition to the requirements of 14 CCR 1034(w), the plan shall identify local unique plant and animal species as identified in the Santa Cruz County General Plan.”**

**1034(w) (CFPR) provides the general guideline for the preparation of a THP that documentation shall provide “information on the presence and protection of known habitat or individuals of any listed species and information on the presence and protection of non-listed species which may be significantly impacted by the timber operation.**

The Little Hoover Commission (1993) note that Dept. Fish & Game recommendations against a particular plan have been overruled by CDF on the basis that take of an endangered species would not cause jeopardy, or that consideration was not required of non-listed species. Species that were not on CDF's sensitive-species list, but were on DFG's list of species of special concern may not result in modification of the THP. This implies that CNPS may have great difficulty in getting protection for CNPS listed plants that are not on federal and state protective lists. This is a much weaker standard than exists under the California Environmental Quality Act. Similarly, proposals to prevent harvests on the basis of the cumulative erosional loading to streams have been unsuccessful due to the inability to quantify the future impact.

In *Sierra Club v. Board of Forestry and Pacific Lumber Company* (7 Cal.4th 1215, No. S026367, Supreme Court of California, In Bank, July 21, 1994), Pacific Lumber claimed it did not have to respond to Dept. Fish and Game requests for information on old-growth habitat, on the basis that the issues were not covered by CFPR. The court ruled that provisions of CEQA, namely section 21160, apply, and denied the claim. This indicates that an interested agency has the right to extend fact-finding beyond the facts explicitly sought in CFPR.

## 8.2 ARE SNAGS AND NEST SITES PROTECTED?

Sections 919.1, 939.1, 959.1 (CFPR) state that snags are to be protected unless they are within 100 feet of a ridgeline and also more than 20 feet high or more than 16 inches dbh., within 100 feet of roads or inhabited structures, or where they must be removed for pest control.

Nest sites are addressed in Sections 919.2&3, 939.2&3, 959.2&3 (CFPR). Nest sites are to be identified in pre-harvest inspection, and must be left untouched if discovered during harvest. Buffer zones for Bald Eagle and Peregrine Falcon are a minimum of 10 acres, for Golden Eagle a minimum of 8 acres, for Osprey and Northern Goshawk 5 acres, for Great Blue Heron, and Great Egret 300 feet. For non-listed species, impacts should be identified and reduced.

Sections 919.9&10, 939.9&10 deal with protection of Northern Spotted Owls in the Coast and Northern Districts. There is a 500 ft. no-operations buffer around nesting pairs or pair activity, and residual trees must be left between 500-1000 ft of the pair. 500 acres of owl habitat must remain around the nest site, and within a circle 1.3 miles from the nest there must remain 1336 acres of habitat.

Section 919.11 deals with Marbled Murrelet protection in the Coast District. No take is allowed, which means no nest sites may be cut.

## 8.3 HOW ARE "SENSITIVE SPECIES" DEALT WITH BY THE BOARD OF FORESTRY?

### 8.3.1 Petition for Sensitive Status (CFPR Sections 919.12, 939.12, 959.12)

"Sensitive Species" is defined as such by the Board of Forestry as a result of petition by public or private agencies. The petition must include information on:

- (1) Range and distribution status of the species which includes an assessment of occurrence in timberland as defined by the FPA and the rules.

- (2) Indices of population trends describing the abundance of the species.
- (3) Biotic and abiotic factors affecting the population viability or status of the species. Specific attention should be given to factors related to forest management and harvesting. This should include threats to population and habitat viability, including direct, indirect, and cumulative effects from these and other threats.
- (4) Habitat availability and trends that include, but are not limited to, an assessment of the following as appropriate:
  - (A) Dependence on general habitat conditions altered by typical forest management activities and projected time for habitat recovery.
  - (B) Dependence on special habitat elements adversely impacted by timber operations.
  - (C) Habitat continuity and juxtaposition requirements as an evaluation of sensitivity to habitat fragmentation.
- (5) Suggested feasible protective measures required to provide for species protection.
- (6) Other information specific to the species proposed that the petitioner believes to be relevant in assisting the Board to evaluate the petition.
- (7) Sources of information relied upon to complete the petition.
- (8) Recommended forest practice rules to provide guidance to RPFs, LTOs, landowners and the director on species protection.
- (9) The potential economic impacts of classifying a species sensitive.

#### 8.3.2 Board Consultation for Listing and Delisting, and Regulation Status (CFPR Sections 919.12, 939.12, 959.12)

- (a) The Board will consult with the U.S. Fish and Wildlife Service, the California Fish and Game Commission, the California Department of Fish and Game, and others as appropriate. After consultation the Board shall classify a species as sensitive after a public hearing if it finds:
  - (1) The California population requires timberland as habitat for foraging, breeding, or shelter, and
  - (2) The California population is in decline or there is a threat from timber operations, and
  - (3) Continued timber operations under the current rules of the Board will result in a loss of the California population viability.
- (b) The Board shall consult with the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and others as appropriate. After consultation and a public hearing, the Board will declassify a species as sensitive if it no longer meets the criteria for classification.
- (c) The Board shall consider, and when possible adopt, regulations using the best available scientific information to establish the feasible mitigations for protection of the species at the same time such species is classified sensitive.
- (d) Where rules are not adopted for the protection of the species at the time of classification, the Board shall begin development of proposed regulations for protection of the species.

Within one year of the classification of a species as sensitive, the Board shall hold a hearing on proposed regulations to establish the protection standards for that species according to the best available scientific information.

#### 8.4 HOW ARE SPECIES LISTED UNDER ESA AND CESA DEALT WITH?

ESA and CESA listed species protection applies to a THP, although the protection for plants only listed under ESA is not greater than for other private lands. If there is some federal nexus associated with a THP, such as Federal

funds being involved for some reason, there would be a potential application of ESA to the THP. However the THP has no NEPA or CEQA review, where ESA and CESA issues may be exposed to public scrutiny or challenged. As DFG is party to the THP process, it is presumed that their staff would notify the Board of Forestry of the potential or known presence of listed species.

The role of US Fish and Wildlife Service (FWS) consultation in a THP has been clarified in *Marbled Murrelet v. Babbitt*, (U.S. 9th Circuit Court of Appeals, No. 96-15617, CV-95-03261-LCB, (1996). In that case it was argued that consultation with FWS by the THP preparer resulted in a violation of NEPA and ESA as the THPs were approved. The court affirmed that a consultation by FWS under 919.9 of CFPR was not an “agency action” that would be in itself subject to NEPA analysis. The court stated:

“In this case, CDF, not FWS, has the discretion to influence the private action at issue. See Cal. Pub. Res. Code S 4582.7(e); *Sierra Club v. State Board of Forestry*, 7 Cal. 4th 1215, 1220 (1994). As FWS stated in its November 20, 1992 concurrence letter, “our concurrence with [Appellants’] Plan does not constitute ‘approval’ of individual THPs. . . . [F]inal determinations regarding satisfaction of [section 919.9(e)] . . . remain with the Board and the CDF.”“

The issue of actual “take” of a federally listed species, vs. a potential for future “take” was resolved by U.S. 9th Circuit Court of Appeals *Forest Conservation Council v. Rosboro Lumber*, 50 F.3d 781 (9th Cir. 1995) 50 F.3d 781. Rosboro Lumber had not applied for an incidental take permit, and wished to cross BLM administered land to log old growth on private property. They had claimed that, as no actual past or present injury had taken place to protected spotted owl, FCC had no issue, and could not claim potential future injury as an action to be remedied by the court. 9th Circuit disagreed, finding Roseboro’s argument to be “antithetical to the general purpose of the ESA”. The court defined “imminent threat” as a form of “harm”, as defined by ESA. However the court made plain that any alteration of habitat did not constitute “take” unless there was imminent threat.

## 8.5 PROTECTION OF WILDLIFE HABITAT

Sections 939.15 & 959.15 (CFPR) address the protection of a very small subset of wildlife habitat that might be encountered under a THP.

In the Northern and Southern Districts, all trees within meadows and wet areas may be clearcut to provide wildlife habitat (see Chapter 7 of this Handbook) or retain these areas for wildlife and livestock. These areas will be shown on the THP map.

In the Southern District, where present at time of timber harvest, 400 sq. ft. basal area of oak, per 40 acres, should be retained and protected, giving preference to deciduous oaks. Oaks should be retained on areas designated by DFG as deer migration corridors, holding areas, or key ranges when consistent with good forestry practices.

## 8.6 HOW ARE LATE SUCCESSIONAL STANDS TO BE TREATED?

Late Successional Stands, or “Old Growth” are considered valuable as habitat or potential habitat for keystone species such as Northern Spotted Owl. They are discussed in Sections 919.16, 939.16, & 959.16 (CFPR). For the Coastal area, the preservation of old growth redwood forest has become a major political and ecological issue. Although it might appear from this section that the Board is recognizing the value of old growth forest, in reality it is doing very little to protect such stands except under the force of the requirements to protect individual species such as Northern Spotted Owl. The following is directly taken from CFPR.

“(a) When late succession forest stands are proposed for harvesting and such harvest will significantly reduce the amount and distribution of late succession forest stands or their functional wildlife habitat value so that it constitutes a significant adverse impact on the environment as defined in Section 895.1, the RPF shall provide habitat structure information for such stands. A statement of objectives over time shall be included for late succession forest stands on the ownership. The THP, SYP, or NTMP shall include a discussion of how the proposed harvesting will affect the existing functional wildlife habitat for species primarily associated with late succession forest stands in the plan or the planning watershed, as appropriate, including impacts on vegetation structure, connectivity, and fragmentation. The information needed to address this subsection shall include, but is not limited to:

(1) - A map(s) showing: A) late succession forest stands within the planning watershed and any other stands that provide functional wildlife habitat for species primarily associated with late succession forest stands that are on the ownership, B) those stands which are currently proposed to be harvested, and C) known stands on other ownerships.

(2) - A list of fish, wildlife and listed species known to be primarily associated with the late succession forest stands in the planning watershed(s) compiled by the RPF using the "California Wildlife Habitat Relationships System" (WHR), the California Natural Diversity Database, and local knowledge of the planning watershed.

(3) - Description of functional wildlife habitat elements that are important for fish, wildlife and listed species primarily associated with late succession forest stands within the planning watershed(s).

(4) - A description of the structural characteristics for each late succession forest stand and any other stands that provide functional wildlife habitat for species primarily associated with late succession forest stands within the planning watershed including a discussion of important functional wildlife habitat elements identified in (3). Methods used to develop the description, which may be an ocular estimate, shall also be described.

(5) - A description of the functional wildlife habitat objectives, such as anticipated long-term landscape patterns, stand structure for late succession forest stands and any other stands that provide functional wildlife habitat for species primarily associated with late succession forest stands, and a discussion of anticipated recruitment procedures for important functional wildlife habitat elements. Coordination of functional wildlife habitat objectives on landscape features among ownerships within mixed-ownership planning watersheds is encouraged.

(6) - An analysis of the long-term significant adverse effects on fish, wildlife, and listed species known to be primarily associated with late succession forests.

(b) Where timber operations will result in long-term significant adverse effects on fish, wildlife, and listed species known to be primarily associated with late succession forests in a THP, SYP, NTMP or planning watershed, feasible mitigation measures to mitigate or avoid such long-term significant adverse effects shall be described and incorporated in the THP, SYP or NTMP. Where long-term significant adverse effects cannot be avoided or mitigated, the THP, SYP, or NTMP shall identify the measures that will be taken to reduce those remaining effects and provide reasons for overriding concerns pursuant to 14 CCR Section 898.1 (g), including a discussion of the alternatives and mitigation considered.

(c) A THP, SYP, or NTMP submitter may request that the Director waive subsection (a) above. The Director, after conferring with review team agencies with jurisdiction, may waive subsection (a) above when substantial evidence is presented that would support a determination that post-harvest late succession forest stands or functional wildlife habitat will continually provide adequate structure and connectivity to avoid or mitigate long-term significant adverse effects on fish, wildlife, and listed plant species known to be primarily associated with late succession forest stands within the planning watersheds."

## **CHAPTER 9: COASTAL COMMISSION SPECIAL TREATMENT AREAS (CCSTA) AND SPECIAL COUNTY STANDARDS**

### **9.1 THP SPECIAL PREPARATION STANDARDS.**

This is covered in Subchapters 4, 5 & 6, Article 11 of CFPR. The purpose of a CCSTA is to protect natural and scenic qualities while allowing management and harvesting of timber resources within these areas. In addition to the statutes and other regulations governing timber harvesting, the following practices are required when conducting timber operations in such Special Treatment Areas. CNPS chapters can obtain a list of designated areas from the Coastal Commission. CNPS might note that CCSTA standards will not preserve ecosystem integrity, as they allow for progressive type conversion.

THP boundaries, tractor roads, skid trails, boundaries of unstable areas that extend to a watercourse and lake protection zone must be clearly identified on the ground, with paint or flagging.

Live trees with visible evidence of current use as nesting sites by hawks, owls, or waterfowl shall not be marked for cutting. There are some difference between the Coastal and Southern districts regarding which species of birds are given consideration.

Plan maps shall be at a scale of at least 4 inches to the mile (6.3 cm per km) and must show the location of and identify log landings, main skid trails, all logging roads, all watercourses, lakes, marshes and boundaries of Coastal Commission Special Treatment Areas within or contiguous to the plan area.

An initial inspection of the area in which timber operations are to be conducted shall be made within 10 days from the date of filing of the plan, or such longer period as may be mutually agreed upon by the Director and the person submitting the plan. The RPF who prepared the plan shall attend the initial inspection. The timber owner and timber operator or their agents should attend the initial inspections.

### **9.2 SILVICULTURAL METHODS IN A CCSTA**

Sections 921.3 and 961.3 (CFPR) address Coast and Southern areas. Even-aged management is not generally allowed (the CFPR states that every effort should be made not to use this method in the Coast District, and it is banned in the Southern District, except for salvage cuts). For an initial entry into an older even-aged stand, the plan must leave a well distributed timber stand after operations have been completed, and leave at least 40% (Coast); 50% (Southern) by number of those trees 18 inches or more d.b.h. and at least 50% by number of those between 12 in. d.b.h. and 18 in. d.b.h. All leave trees (those not cut) are to be undamaged thrifty coniferous trees. No conifer tree shall be cut which is more than 75 ft. (22.86 m) from a leave tree 12 in. (30.5 cm) d.b.h. or larger located within the logging area. Average top stump diameter, outside bark, shall be considered 1 in. (2.5 cm) greater than d.b.h.

For entry into uneven aged timber stands, the THP should leave at least 50% by number of those trees over 12 in. d.b.h. leave trees and established conifer regeneration shall amount to 50% of the pre-existing tree crown canopy cover. All leave trees shall be thrifty coniferous trees which are free from substantial damage caused by timber operations, and leave trees shall have the characteristics of a "countable tree" described in Sec. 4528(b) PRC. No conifer tree shall be cut which is more than 75 ft. from a 3 point countable tree within the logging area.

In redwood forest, after timber operations have been completed, at least 50% by number of those trees 12 to 18 in., 18 to 32 in. and 32 in. or larger d.b.h. must be left.

Clear cutting, although discouraged, can be used in the Coast region for sanitation cuts, in cases where wind would be a threat to leave trees, and where there is to be "stand improvement", leave trees would prevent regeneration of the principal conifer species, or in old growth stands where 70% or more of the countable trees over 36 in. d.b.h. are more than 200 years old. Single cuts are not to exceed 10 acres, but may be enlarged to not more than 15 acres with justification, and cannot come closer than 300 ft. to another clearcut. Cut boundaries should not be linear or angular. An area cut by another method cannot be reentered for a clearcut for at least 10 years (unless stocking standards are met earlier). CNPS sees this as a loophole to allow progressive removal of old growth coastal forest in 10-acre increments, particularly as the 300 ft. buffers between cuts would be prone to wind throw.

The THP should describe stocking methods, and restocking should take a single season with species that are "appropriate" to the site. "Rehabilitation Cutting" allows oaks to be removed so that commercial conifers can be introduced, and appears to be encouraged (see 921.3(d)). CFPR provides stocking standards for Coast and Southern STAs based on average residual basal area of at least 125 sq. ft. per acre on Site I lands, at least 100 sq. ft. per acre on Site II and Site III lands and at least 75 sq. ft. per acre on Site IV and V lands, or as determined by a point count method as defined in Section 921.4, 961.4 CFPR. In the Coast District STAs, basal area must be measured in stems 1 in. or larger in diameter.)

Section 921.8 and 961.8 describe the use of Buffer Zones around coastal scenic view corridors, public resources, recreation areas, and roads as designated by the Coastal Commission. They are to 200 feet but cannot be larger than 350 feet in width (a reminder that CFPR and Z'berg-Nejedly Forest Protection Act are concerned with maximizing sustainable wood production).

#### Logging Practices in a CCSTA (Sections 921.5, 961.5)

Tractor Logging is not be permitted on slopes in a Coast Special Treatment Area averaging over 50% where the Erosion Hazard Rating is high or extreme and 60% where the Erosion Hazard Rating is low or moderate, unless it can be shown from past experience on the ground that tractor logging or other types of skidding equipment will cause less disturbance than would result from a feasible alternative method. Roads are prohibited on slopes >50% throughout the Southern Special treatment area. Roads must be single lane, not to exceed 16 ft. in width and generally no more than 12 ft. wide. Waste organic material is not to be buried in the main body of road fills. Sidecast or fill material should not be placed in the watercourse protection zone unless explained in the plan. Roads should not be constructed through slide areas or areas with visible evidence of slope instability unless the alignment is the best available alternative and special design features are incorporated in the plan. Roads, landings, cuts and fills should be screened from direct view to the extent feasible. Soil disturbance, other than that incident to necessary road maintenance, whether with tractor or by cable means, should not occur under excessively wet ground conditions that could result in substantial soil compaction and erosion. Up to 10% of the trees that are proposed for cutting may be substituted one for one with those proposed to be left uncut provided that the leave tree proportion, size class, distribution and general forest appearance of the residual stand as approved in the preliminary field work is preserved. There are slight differences between the Coast and Southern areas.

All snags within the Watercourse and Lake Protection Zone and within 100 feet of meadow edges are to be left standing unless felling is required for fire, safety reasons, or sanitation-salvage operations.

Broadcast burning is prohibited on lands harvested under the commercial thinning and selection silvicultural methods in coastal zone special treatment areas.

Watercourse and lakeside vegetation is to remain standing to the degree necessary to protect scenic and natural qualities and protect the beneficial uses of water. Buffers should be at least 150 feet on each side of Class I or II waters. 961.7 Watercourse and Lake Protection [Southern, Special Treatment Area] Watercourse and lakeside vegetation shall be protected and remain standing to the degree necessary to protect scenic and natural qualities and protect the beneficial uses of water. In addition to the requirements of 14 CCR 956 through 956.8 the following standards shall apply in the Coastal Commission Special Treatment Areas. The Watercourse and Lake Protection Zone shall be 150 feet on each side of Class I watercourses and lakes, and for Class II watercourses 100 feet on each side in the Southern District, and 150 ft. in the Coast District. (for waterway classes, see Appendix D)

#### 9.3 LOGGING ROADS AND LANDINGS

This is covered in Subchapters 4, 5, & 6, Article 12 of CFPR that contain technical specifications to minimize soil disturbance and sediment production. CNPS will be interested in potential displacement of plant populations by roads, and in sedimentation problems generated from poorly sited roads. Special erosion treatment is needed where roads cross slopes of greater than 65% (or 50% in a Water Course and Lake Protection Zone), and new roads may not have a pitch of greater than 15% (for distances of less than 500 ft. a 20% pitch may be allowed). Roads are to balance cut and fill, to be one lane, and to be in-slope graded for drainage control. Road use is terminated if machinery cannot operate under its own power. In the event that sediment is seen to come from a road approved by a THP, Sections 923.4, 943.4 and 963.4 of CFPR should be checked to see if road maintenance was as required in standards.

#### 9.4 COUNTY RULES (Main points)

Certain coastal counties have specific rules which are described in Article 13 of CFPR. There do not appear to be any special rules for inland counties, or for any coastal counties north of Marin County

##### Santa Clara County

Winter is defined as October 15-April 15. The THP must be noticed to all landowners within 300 feet of the boundaries, or fronting a haul road. The Director must provide copies of the THP to the local school district and Santa Clara Valley Water District. The plan must define the likely traffic load of lumber trucks, and a map showing truck routes away from the THP area must be provided. Adjacent property lines must be flagged, log hauling cannot take place on weekends or holidays, 200 ft. visual buffers are maintained, performance bonding is required.

##### Santa Cruz County

Winter is defined as October 15-April 15. The THP preparer and the timber operator must tour the plan area together, if they are different people. The THP must be noticed to all landowners within 300 feet of the boundaries, or fronting a haul road. The Director must provide copies of the THP to the local school district, local water district and school district, and members of Board of Supervisors in district of THP. There is a pre-harvest inspection by the Forest Practice Officer for consistency with rules. Any review team member may participate in pre-harvest inspection. Fuelwood operations may not cut new roads, reconstruct old roads, take place on slopes >60%, or take place in erosion prone or unstable areas. Buffers of 500 ft. must exist around the nest of any rare or endangered bird. Log hauling cannot take place on weekends or holidays, performance bonding is required. A plan on erosion control must be provided.

##### Marin County

Winter is defined as October 1-April 15. THP maps must identify all habitable structures within 200 ft., the boundaries of the Marin County Recreation Corridor and routes showing truck routes away from the THP area. The notice of filing must be given to any school or school district on the haul road. The response of CDF to the THP, and review team recommendations must be made public, and team members can tour the plan area. All chemical used in land treatment must be identified. Any non-timber use of the land planned for the next five years must be identified. Tractor yarding on slopes >50% is prohibited. The onset of a THP must provide sufficient county notification. Adjacent property lines must be flagged, log hauling cannot take place on weekends or holidays, 200 ft. visual buffers are maintained, measured from the center of roads, but in the Marin County Recreation Corridor the buffer starts at the first trees (but is no greater than 350 ft.). Clearcutting is not allowed, and reentry to cut areas cannot take place for 10 years. Logging is to be performed by Commercial Thinning or by Selection Method. Stocking standards are higher than required for other coastal areas, requiring by Basal Area Method 125 sq. ft. per acre for Site I lands, 100 sq. ft. per acre on Site II and III lands, and at least 75 sq. ft. per acre on Site IV lands. Section 927.10 also describes stocking requirements as defined by the Point Count method. Forest roads are single lane, less than 12 ft wide, and screened. Further details on felling requirements and road requirements are given in Section 927.11. Snags are to remain within 100 ft. of water or if they are in a WLPZ.

##### San Mateo County

THP maps must identify all habitable structures within 200 ft., firebreak locations, and scenic road locations. Tractor roads on slopes >50% must be flagged, adjacent property lines must be flagged, and log hauling cannot take place on weekends or holidays. All timber proposed for cutting must be marked, and the timber operator must be bonded.

##### Monterey County

Winter is defined as October 15-April 15. The THP must be noticed to all landowners on the boundaries, or fronting a haul road, and shall supply all assessor's parcel numbers within the THP. The Director must provide copies of the THP to the Public Water Agency Representative. Log hauling cannot take place on weekends or holidays, and logging roads, tractor roads and landings must be 100 ft. from a public road. Special standards apply to the Big Sur Coast (Section 965.6), where sanitation-salvage is the only silviculture method allowed west of Highway 1, all operations must be screened, new roads are not allowed in the critical viewshed of Highway 1 if it will degrade the

viewshed, and is strongly discouraged on slopes >30%. Biological studies are required where sensitive plant and animal species are defined in the Big Sur LUP, and significant adverse impacts can cancel the THP. Within certain drainages defined by the Big Sur LUP, a qualified hydrologist or erosion control specialist must review the THP. The minimum setback on Class I and II streams is 150 feet. The timber operator must be bonded.

#### 9.5 ARCHEOLOGICAL AND HISTORICAL CONSIDERATIONS

Article 14 of CFPR states that a THP must show evidence of conducting an archeological record check, as described in Sections 929, 949, and 969. Native Americans (not further defined) must be notified, and an archeologist must do a survey of the proposed project. A Confidential Archeological Addendum to the THP is prepared. There are different procedures for covering Emergency Notices. Any 'finds' during the operation must be reported, and operations must maintain 100 ft. buffers around sites.

**APPENDIX A: CUMULATIVE IMPACTS ASSESSMENT CHECKLIST [ALL DISTRICTS]  
FROM SECTIONS 912.9, 932.9, 952.9 OF CALIFORNIA FOREST PRACTICES RULES**

(1) Do the assessment area(s) of resources that may be affected by the proposed project contain any past, present, or reasonably foreseeable probable future projects? Yes \_\_\_ No \_\_\_

If the answer is yes, identify the project(s) and affected re-source subject(s).

(2) Are there any continuing, significant adverse impacts from past land use activities that may add to the impacts of the proposed project? Yes \_\_\_ No \_\_\_ If the answer is yes, identify the activities and affected resource subject(s).

(3) Will the proposed project, as presented, in combination with past, present, and reasonably foreseeable probable future projects identified in items (1) and (2) above, have a reasonable potential to cause or add to significant cumulative impacts in any of the following resource subjects?

	YES-AFTER MITIGATION (a)	NO-AFTER MITIGATION (b)	NO REASONABLY POTENTIAL SIGNIFICANT IMPACTS
1. WATERSHED			
2. SOIL PRODUCTIVITY			
3. BIOLOGICAL			
4. RECREATION			
5. VISUAL			
6. TRAFFIC			
7. OTHER			

a) Yes, means that potential significant adverse impacts are left after application of the forest practice rules and mitigations or alternatives proposed by the plan submitter.

b) No after mitigation means that any potential for the proposed timber operation to cause significant adverse impacts has been substantially reduced or avoided by mitigation measures or alternatives proposed in the THP and application of the forest practice rules.

c) No reasonably potential significant effects means that the operations proposed under the THP do not have a reasonable potential to join with the impacts of any other project to cause cumulative impacts.

(4) If column (a) is checked in (3) above describe why the expected impacts cannot be feasibly mitigated or avoided and what mitigation measures or alternatives were considered to reach this determination impacts. If column (b) is checked in (3) above describe what mitigation measures have been selected which will substantially reduce or avoid reasonably potential significant cumulative impacts except for those mitigation measures or alternatives mandated by application of the rules of the Board of Forestry.

(5) Provide a brief description of the assessment area used for each resource subject.

(6) List and briefly describe the individuals, organizations, and records consulted in the assessment of cumulative impacts for each resource subject. Records of the information used in the assessment shall be provided to the Director upon request.

## **APPENDIX B: TECHNICAL RULE ADDENDUM NO. 2, CALIFORNIA FOREST PRACTICES RULES**

### Introduction

The purpose of this addendum is to guide the assessment of cumulative impacts as required in 14 CCR 898 and 1034 that may occur as a result of proposed timber operations. This assessment shall include evaluation of both on-site and off-site interactions of proposed project activities with the impacts of past and reasonably foreseeable future projects.

In conducting an assessment, the RPF must distinguish between on-site impacts that are mitigated by application of the Forest Practice Rules and the interactions of proposed activities (which may not be significant when considered alone) with impacts of past and reasonably foreseeable future projects.

Resource subjects to be considered in the assessment of cumulative impacts are described in the Appendix.

The RPF preparing a THP shall conduct an assessment based on information that is reasonably available before submission of the THP. RPFs are expected to submit sufficient information to support their findings if significant issues are raised during the Department's review of the THP.

Information used in the assessment of cumulative impacts may be supplemented during the THP review period. Agencies participating in plan review may provide input into the cumulative impacts assessment based upon their area of expertise. Agencies should support their recommendations with documentation.

The Department, as lead agency, shall make the final determination regarding assessment sufficiency and the presence or absence of significant cumulative impacts. This determination shall be based on a review of all sources of information provided and developed during review of the Timber Harvesting Plan.

### Identification of Resource Areas

The RPF shall establish and briefly describe the geographic assessment area within or surrounding the THP for each resource subject to be assessed and shall briefly explain the rationale for establishing the resource area. This may be a narrative description or may be shown on a map.

### Identification of Information Sources

The RPF shall list and briefly describe the individuals, organizations, and records used as sources of information in the assessment of cumulative impacts, including references for listed records and the names, affiliations, addresses, and phone numbers of specific individuals contacted. Records of information used in the assessment shall be provided to the Director upon request.

Common sources of information for cumulative effects assessment are identified below. Sources to be used will depend upon the complexity of individual situations and the amount of information available from other plans. Sources not listed below may have to be consulted based on individual circumstances. Not all sources of information need to be consulted for every THP.

#### 1. Consultation with Experts and Organizations:

- (a) County Planning Department; (b) Biologists;
- (c) Geologists;(d) Soil Scientists;
- (e) Hydrologists;(f) Federal Agencies;
- (g) State Agencies;(h) Public and private utilities

#### 2. Records Examined:

- (a) Soil Maps;(b) Geology Maps;
- (c) Aerial Photographs;(d) Natural Diversity Data Base;
- (e) THP Records;(f) Special Environmental Reports;
- (g) Basin Plans;(h) Fire History Maps;
- (i) Relevant Federal Agency Documents or Plans

As provided in Section 898 of the rules, the RPF and the plan submitter must consult information sources that are reasonably available.

#### Past and Future Activities

Past and future projects included in the cumulative impacts assessment shall be described as follows:

- A. Identify and briefly describe the location of past and reasonably foreseeable probable future projects as defined in 14 CCR 895.1 within described resource assessment areas.
- B. Identify and give the location of any known, continuing significant environmental problems caused by past projects as defined in 14 CCR 895.1.

The RPF who prepares the plan shall obtain information from plan submitters (timberland or timber owner) about past, and future land management activities and shall consider past experience, if any, in the assessment area related to impacts of the proposed operations, rates of recovery, and land uses. A poll of adjacent owners is not required to determine activities on adjacent ownerships.

#### The Addendum

In evaluating cumulative impacts, the RPF shall consider the factors set forth herein. (CNPS should use this list to evaluate the quality of the RPF's assessment.

A. WATERSHED RESOURCES - Cumulative Watershed Effects (CWEs) occur within and near bodies of water or significant wet areas, where individual impacts are combined to produce an effect that is greater than any of the individual impacts acting alone. Factors to consider in the evaluation of cumulative watershed impacts are listed below.

1. Watershed impacts shall be based on significant on-site and down-stream cumulative effects on beneficial uses of water, as defined and listed in applicable Water Quality Control Plans.

2. Watershed effects produced by timber harvest and other activities may include one or more of the following: Sediment, Water temperature, Organic debris, Chemical contamination, Peak flow.

a. Sediment Effects: Sediment-induced CWEs occur when earth materials transported by surface or mass wasting erosion enter a stream or stream system at separate locations and are then combined at a downstream location to produce a change in water quality or channel condition. The eroded materials can originate from the same or different projects. Potentially adverse changes are most likely to occur in the following locations and situations:

- Downstream areas of reduced stream gradient where sediment from a new source may be deposited in addition to sediment derived from existing or other new sources.
- Immediately downstream from where sediment from a new source is combined with sediment from other new or existing sources and the combined amount of sediment exceeds the transport capacity of the stream.

- Any location where sediment from new sources in combination with suspended sediment from existing or other new sources significantly reduces the survival of fish or other aquatic organisms or reduces the quality of waters used for domestic, agricultural, or other beneficial uses.
- Channels with relatively steep gradients which contain accumulated sediment and debris that can be mobilized by sudden new sediment inputs, such as debris flows, resulting in debris torrents and severe channel scouring.

Potentially significant adverse impacts of cumulative sediment inputs may include:

- Increased treatment needs or reduced suitability for domestic, municipal, industrial, or agricultural water use.
- Direct mortality of fish and other aquatic species.
- Reduced viability of aquatic organisms or disruption of aquatic habitats and loss of stream productivity caused by filling of pools and plugging or burying streambed gravel.
- Accelerated channel filling (aggradation) resulting in loss of streamside vegetation and stream migration that can cause accelerated bank erosion.
- Accelerated filling of downstream reservoirs, navigable channels, water diversion and transport facilities, estuaries, and harbors.
- Channel scouring by debris flows and torrents.
- Nuisance to or reduction in water related recreational activities.

Situations where sediment production potential is greatest include:

- Sites with high or extreme erosion hazard ratings.
- Sites which are tractor logged on steep slopes.
- Unstable areas.

b. Water Temperature Effect: Water temperature related CWEs are changes in water chemistry or biological properties caused by the combination of solar warmed water from two or more locations (in contrast to an individual effect that results from impacts along a single stream segment) where natural cover has been removed. Cumulative changes in water temperature are most likely to occur in the following situations:

- Where stream bottom materials are dark in color.
- Where water is shallow and has little underflow.
- Where removal of streamside canopy results in substantial, additional solar exposure or increased contact with warm air at two or more locations along a stream.
- Where removal of streamside canopy results in substantial, additional solar exposure or increased contact with warm air at two or more streams that are tributary to a larger stream.
- Where water temperature is near a biological threshold for specific species.

Significant adverse impacts of cumulative temperature increases include:

- Increases in the metabolic rate of aquatic species.
- Direct increases in metabolic rate and/or reduction of dissolved oxygen levels, either of which can cause reduced vigor and death of sensitive fish and other sensitive aquatic organisms.

- Increased growth rates of microorganisms that deplete dissolved oxygen levels or increased disease potential for organisms.

- Stream biology shifts toward warmer water ecosystems.

c. Organic Debris Effects: CWEs produced by organic debris can occur when logs, limbs, and other organic material are introduced into a stream or lake at two or more locations. Decomposition of this debris, particularly the smaller sized and less woody material, removes dissolved oxygen from the water and can cause impacts similar to those resulting from increased water temperatures. Introduction of excessive small organic debris can also increase water acidity.

Large organic debris is an important stabilizing agent that should be maintained in small to medium size, steep gradient channels, but the sudden introduction of large, unstable volumes of bigger debris (such as logs, chunks, and larger limbs produced during a logging operation) can obstruct and divert streamflow against erodible banks, block fish migration, and may cause debris torrents during periods of high flow.

Removing streamside vegetation can reduce the natural, annual inputs of litter to the stream (after decomposition of logging-related litter). This can cause both a drop in food supply, and resultant productivity, and a change in types of food available for organisms that normally dominate the lower food chain of streams with an overhanging or adjacent forest canopy.

d. Chemical Contamination Effects: Potential sources of chemical CWEs include run-off from roads treated with oil or other dust-retarding materials, direct application or run-off from pesticide treatments, contamination by equipment fuels and oils, and the introduction of nutrients released during slash burning or wildfire from two or more locations.

e. Peak Flow Effects: CWEs caused by management induced peak flow increases in streams during storm events are difficult to anticipate. Peak flow increases may result from management activities that reduce vegetative water use or produce openings where snow can accumulate (such as clear-cutting and site preparation) or that change the timing of flows by producing more efficient runoff routing (such as insloped roads). These increases, however, are likely to be small relative to natural peak flows from medium and large storms. Research to date on the effects of management activities on channel conditions indicates that channel changes during storm events are primarily the result of large sediment inputs.

3. Watercourse Condition: The watershed impacts of past upstream and on-site projects are often reflected in the condition of stream channels on the project area. Following is a list of channel characteristics and factors that may be used to describe current watershed conditions and to assist in the evaluation of potential project impacts:

- Gravel Embedded - Spaces between stream gravel filled with sand or finer sediments. Gravel are often in a tightly packed arrangement.
- Pools Filled - Former pools or apparent pool areas filled with sediments leaving few areas of deep or "quiet" water relative to stream flow or size.
- Aggrading - Stream channels filled or filling with sediment that raises the channel bottom elevation. Pools will be absent or greatly diminished and gravel may be embedded or covered by finer sediments. Streamside vegetation may be partially or completely buried, and the stream may be meandering or cutting into its banks above the level of the former streambed. Depositional areas in aggrading channels are often increasing in size and number.
- Bank Cutting - Can either be minor or severe and is indicated by areas of fresh, unvegetated soil or alluvium exposed along the stream banks, usually above the low-flow channel and often with a vertical or undercut face. Severe bank cutting is often associated with channels that are downcutting, which can lead to over-steepened banks, or aggrading, which can cause the channel to migrate against slopes that were previously above the high flow level of the stream.
- Bank Mass Wasting - Channels with landslides directly entering the stream system. Slide movement may be infrequent (single events) or frequent (continuing creep or periodic events).

- Downcutting - Incised stream channels with relatively clean, uncluttered beds cut below the level of former streamside vegetation and with eroded, often undercut or vertical, banks.
- Scoured - Stream channels that have been stripped of gravel and finer bed materials by large flow events or debris torrents. Streamside vegetation has often been swept away, and the channel has a raw, eroded appearance.
- Organic Debris - Debris in the watercourse can have either a positive or negative impact depending on the amount and stability of the material. Some stable organic debris present in the watercourse helps to form pools and retard sediment transport and downcutting in small to medium sized streams with relatively steep gradients. Large accumulations of organic debris can block fish passage, block or divert streamflow, or could be released as a debris flow.
- Stream-Side Vegetation - Stream-side vegetation and near-stream vegetation provide shade or cover to the stream, which may have an impact on water temperature, and provides root systems that stabilize streambanks and floodplains and filter sediment from flood flows.
- Recent Floods - A recent high flow event that would be considered unusual in the project area may have an impact on the current watercourse condition.

**B. SOIL PRODUCTIVITY:** Cumulative soil productivity impacts occur when the effects of two or more activities, from the same or different projects, combine to produce a significant decrease in soil biomass production potential. These impacts most often occur on-site within the project boundary, and the relative severity of productivity losses for a given level of impact generally increases as site quality declines. The primary factors influencing soil productivity that can be affected by timber operations include:

- Organic matter loss. • Soil compaction.
- Surface soil loss. • Growing space loss.

The following general guidelines may be used when evaluating soil productivity impacts. No actual measurements are intended:

1. **Organic Matter Loss:** Displacement or loss of organic matter can result in a long term loss of soil productivity. Soil surface litter and downed woody debris are the store-house of long term soil fertility, provide for soil moisture conservation, and support soil microorganisms that are critical in the nutrient cycling and uptake process. Much of the chemical and microbial activity of the forest nutrient cycle is concentrated in the narrow zone at the soil and litter interface.

Displacement of surface organic matter occurs as a result of skidding, mechanical site preparation, and other land disturbing timber operations. Actual loss of organic matter occurs as a result of burning or erosion. The effects of organic matter loss on soil productivity may be expressed in terms of the percentage displacement or loss as a result of all project activities.

2. **Surface Soil Loss:** The soil is the storehouse of current and future site fertility, and the majority of nutrients are held in the upper few inches of the soil profile. Topsoil displacement or loss can have an immediate effect on site productivity, although effects may not be obvious because of reduced brush competition and lack of side-by-side comparisons or until the new stand begins to fully occupy the available growing space.

Surface soil is primarily lost by erosion or by displacement into windrows, piles, or fills. Mass wasting is a special case of erosion with obvious extreme effects on site productivity. The impacts of surface soil loss may be evaluated by estimating the proportion of the project area affected and the depth of loss or displacement.

3. **Soil Compaction:** Compaction affects site productivity through loss of large soil pores that transmit air and water in the soil and by restricting root penetration. The risk of compaction is associated with:

- Depth of surface litter. • Soil structure.
- Soil organic matter content. • Presence and amount of coarse fragments in the soil.

- Soil texture.
- Soil moisture status.

Compaction effects may be evaluated by considering the soil conditions, as listed above, at the time of harvesting activities and the proportion of the project area subjected to compacting forces.

4. Growing Space Loss: Forest growing space is lost to roads, landings, permanent skid trails, and other permanent or non-restored areas subjected to severe disturbance and compaction.

The effects of growing space loss may be evaluated by considering the overall pattern of roads, etc., relative to feasible silvicultural systems and yarding methods.

C. BIOLOGICAL RESOURCES: Biological assessment areas will vary with the species being evaluated and its habitat. Factors to consider in the evaluation of cumulative biological impacts include:

1. Any known rare, threatened, or endangered species or species of special concern (as described in the Forest Practice Rules) that may be directly or indirectly affected by project activities.

Significant cumulative effects on listed species may be expected from the results of activities over time which combine to have a substantial effect on the species or on the habitat of the species.

2. Any significant, known wildlife or fisheries resource concerns within the immediate project area and the biological assessment area (e.g. loss of oaks creating forage problems for a local deer herd, species requiring special elements, sensitive species, and significant natural areas).

Significant cumulative effects may be expected where there is a substantial reduction in required habitat or the project will result in substantial interference with the movement of resident or migratory species.

The significance of cumulative impacts on non-listed species viability should be determined relative to the benefits to other non-listed species. For example, the manipulation of habitat results in conditions which discourage the presence of some species while encouraging the presence of others.

3. The aquatic and near-water habitat conditions on the THP and immediate surrounding area. Habitat conditions of major concern are: Pools and riffles, Large woody material in the stream, Near-water vegetation.

Much of the information needed to evaluate these factors is described in the preceding Watershed Resources section. A general discussion of their importance is given below:

a. Pools and Riffles: Pools and riffles affect overall habitat quality and fish community structure. Streams with little structural complexity offer poor habitat for fish communities as a whole, even though the channel may be stable. Structural complexity is often lower in streams with low gradients, and filling of pools can reduce stream productivity.

b. Large Woody Material: Large woody debris in the stream plays an important role in creating and maintaining habitat through the formation of pools. These pools comprise important feeding locations that provide maximum exposure to drifting food organisms in relatively quiet water. Removal of woody debris can reduce frequency and quality of pools.

c. Near-Water Vegetation: Near-water vegetation provides many habitat benefits, including: shade, nutrients, vertical diversity, migration corridors, nesting, roosting, and escape. Recruitment of large woody material is also an important element in maintaining habitat quality.

4. The biological habitat condition of the THP and immediate surrounding area. Significant factors to consider are:

- Snags/den trees
- Hardwood cover
- Downed, large woody debris
- Late seral (mature) forest characteristics.

- Multistory canopy • Late seral habitat continuity
- Road density

The following general guidelines may be used when evaluating biological habitat. The factors described are general and may not be appropriate for all situations. No actual measurement is intended. The THP preparer must also be alert to the need to consider factors which are not listed below. Each set of ground conditions are unique and the analysis conducted must reflect those conditions.

a. Snags/Den/Nest Trees: Snags, den trees, nest trees and their recruitment are required elements in the overall habitat needs of more than 160 wildlife species. Many of these species play a vital role in maintaining the overall health of timberlands. Snags of greatest value are >16" DBH and 20 ft. in height. The degree of snag recruitment over time should be considered. Den trees are partially live trees with elements of decay which provide wildlife habitat. Nest trees have importance to birds classified as a sensitive species.

b. Downed large, woody debris: Large downed logs (particularly conifers) in the upland and near- water environment in all stages of decomposition provide an important habitat for many wildlife species. Large woody debris of greatest value consists of downed logs >16" diameter at the large end and >20 feet in length.

c. Multistory canopy: Upland multistoried canopies have a marked influence on the diversity and density of wildlife species utilizing the area. More productive timberland is generally of greater value and timber site capability should be considered as a factor in an assessment. The amount of upland multistoried canopy may be evaluated by estimating the percent of the stand composed of two or more tree layers on an average per acre basis.

Near-water multistoried canopies in riparian zones that include conifer and hardwood tree species provide an important element of structural diversity to the habitat requirements of wildlife. Near-water multistoried canopy may be evaluated by estimating the percentage of ground covered by one or more vegetative canopy strata, with more emphasis placed on shrub species along Class III and IV streams (14 CCR 916.5, 936.5, or 956.5).

d. Road Density: Frequently traveled permanent and secondary roads have a significant influence on wildlife use of otherwise suitable habitat. Large declines in deer and bear use of areas adjacent to open roads are frequently noted. Road density influence on large mammal habitat may be evaluated by estimating the miles of open permanent and temporary roads, on a per-section basis, that receive some level of maintenance and are open to the public. This assessment should also account for the effects of vegetation screening and the relative importance of an area to wildlife on a seasonal basis (e.g. winter range).

e. Hardwood Cover: Hardwoods provide an important element of habitat diversity in the coniferous forest and are utilized as a source of food and/or cover by a large proportion of the state's bird and mammal species. Productivity of deer and other species has been directly related to mast crops. Hardwood cover can be estimated using the basal area per acre provided by hardwoods of all species.

f. Late Seral (Mature) Forest Characteristics: Determination of the presence or absence of mature and over-mature forest stands and their structural characteristics provides a basis from which to begin an assessment of the influence of management on associated wildlife. These characteristics include large trees as part of a multi-layered canopy and the presence of large numbers of snags and downed logs that contribute to an increased level of stand decadence. Late seral stage forest amount may be evaluated by estimating the percentage of the land base within the project and the biological assessment area occupied by areas conforming to the following definitions:

Forests not previously harvested should be at least 80 acres in size to maintain the effects of edge. This acreage is variable based on the degree of similarity in surrounding areas. The area should include a multi-layered canopy, two or more tree species with several large coniferous trees per acre (smaller subdominant trees may be either conifers or hardwoods), large conifer snags, and an abundance of large woody debris.

Previously harvested forests are in many possible stages of succession and may include remnant patches of late seral stage forest which generally conform to the definition of unharvested forests but do not meet the acreage criteria.

g. Late Seral Habitat Continuity: Projects containing areas meeting the definitions for late seral stage characteristics must be evaluated for late seral habitat continuity. The fragmentation and resultant isolation of late seral habitat types is one of the most significant factors influencing the sustainability of wildlife populations not adapted to edge environments.

This fragmentation may be evaluated by estimating the amount of the on-site project and the biological assessment area occupied by late seral stands greater than 80 acres in size (considering the mitigating influence of adjacent and similar habitat, if applicable) and less than one mile apart or connected by a corridor of similar habitat.

h. Special Habitat Elements: The loss of a key habitat element may have a profound effect on a species even though the habitat is otherwise suitable. Each species may have several key limiting factors to consider. For example, a special need for some large raptors is large decadent trees/snags with broken tops or other features. Deer may have habitat with adequate food and cover to support a healthy population size and composition but dependent on a few critical meadows suitable for fawning success. These and other key elements may need special protection.

D. RECREATIONAL RESOURCES: The recreational assessment area is generally the area that includes the logging area plus 300 ft.

E. VISUAL RESOURCES: The visual assessment area is generally the logging area that is readily visible to significant numbers of people who are no further than three miles from the timber operation. To assess visual cumulative effects:

1. Identify any Special Treatment Areas designated as such by the Board of Forestry because of their visual values.
2. Determine how far the proposed timber operation is from the nearest point that significant numbers of people can view the timber operation. At distances of greater than 3 miles from viewing points activities are not easily discernible and will be less significant.
3. Identify the manner in which the public identified in 1 and 2 above will view the proposed timber operation (from a vehicle on a public road, from a stationary public viewing point or from a pedestrian pathway).

F. VEHICULAR TRAFFIC IMPACTS:

## APPENDIX C - TIMBER SITE CLASSIFICATION

### Young Growth Redwood

Site index based on average height of dominant trees at breast height age of 100 years. Use in young growth redwood stands in which more than 20% of the stand by basal area is redwood and when sufficient dominant redwood trees are available to determine site index.

SITE CLASS	SITE INDEX- HEIGHT IN FEET @ 100 YRS
I	180 OR MORE
II	155-179
III	130-154
IV	105-153
V	LESS THAN 105

Lindquist, James L., and Marshall N. Palley. *Empirical yield tables for young-growth redwood*, Calif. Agri. Exp. Stn. Bull. 796, 47pp. 1963

### Douglas Fir

Adjusted to average height of dominant trees after Forest Research Note No. 44, Pacific Northwest Forest and Range Experiment Station, by Forest Survey, Calif. Forest and Ranch Exp. Stn. 1948 (Site index based on average height of dominant trees at age 100 years). Use in young growth redwood stands in which 20% or less of the stand by basal area is redwood or when sufficient dominant redwood trees are not available to determine site index. Use also in old growth redwood stands. In such cases, measure Douglas-fir trees for determining site index. Also use for Sitka spruce, grand fir, hemlock, bishop pine, and Monterey pine stands.

SITE CLASS	SITE INDEX- HEIGHT IN FEET @ 100 YRS
I	194 OR MORE
II	164-193
III	134-163
IV	103-133
V	LESS THAN 103

McArdle, Richard E., and Walter H. Meyer. *The yield of Douglas fir in the Pacific Northwest*. USDA Tech. Bull. 201, 74 pp. Rev. 1961.

### Mixed Conifer & True Fir

Site index based on average height of dominant trees at age 100 and 300 years). Use also for lodgepole pine stands. For old growth stands use height of dominants at age 300 years.

Dunning, Duncan. *A site classification for the mixed-conifer selection forests of the Sierra Nevada*. USDA Forest Serv. Calif. Forest and Ranch Exp. Stn. For. Res. Note 28, 21 pp. 1942

SITE CLASS	SITE INDEX- HEIGHT IN FEET @ 100 YRS
I	114 OR MORE
II	93-113
III	75-92
IV	60-74
V	LESS THAN 60

SITE CLASS	SITE INDEX- HEIGHT IN FEET @ 300 YRS
I	163 OR MORE
II	138-162
III	113-137
IV	88-112
V	LESS THAN 88

## APPENDIX D - WATER COURSE AND LAKE PROTECTION ZONE WIDTHS

Water Class Characteristics or Key Indicator Beneficial Use	1) Domestic supplies including springs, on site and/or within 100 feet downstream of the operations area and/or 2) Fish always or seasonally present onsite, includes habitat to sustain fish migration and spawning.	1) Fish always or seasonally present offsite within 1000 feet downstream and/or 2) Aquatic habitat for nonfish aquatic species. 3) Excludes Class III waters that are tributary to Class I waters.	No aquatic life present, watercourse showing evidence of being capable of sediment transport to Class I and II waters under normal high water flow conditions after completion of timber operations.	Man-made watercourses, usually downstream, established domestic, agricultural, hydroelectric supply or other beneficial use
Water Class	Class I	Class II	Class III	Class IV
Slope %	zone width/protection measure	zone width/protection measure	zone width/protection measure	zone width/protection measure
<30	75 -BDG	50-BEI	See CFH	See CFI
30-50	100-BDG	75-BEI	See CFH	See CFI
>50	150-ADG	100-BEI	See CFH	See CFI

### KEY TO PROTECTION MEASURES

"A" WLPZ shall be clearly identified on the ground by the RPF who prepared the plan, or supervised designee, with paint, flagging, or other suitable means prior to the preharvest inspection.

"B" WLPZ shall be clearly identified on the ground by an RPF, or supervised designee, with paint, flagging, or other suitable means, prior to the start of timber operations. In planning watersheds determined to contain coho salmon, chinook salmon, or steelhead, on the ground identification of the WLPZ must be completed prior to the preharvest inspection.

"C" In site-specific cases, the RPF may provide in the plan, or the director may require, that the WLPZ be clearly identified on the ground with flagging or by other suitable means prior to the start of timber operations.

"D" To ensure retention of shade canopy filter strip properties of the WLPZ and the maintenance of a multi-storied stand for protection of values described in 14 CCR 916.4(b) [936.4(b), 956.4(b)], a base mark below the cut line of residual or harvest trees within the zone shall be done in advance of the preharvest inspection by the RPF who prepared the plan, or supervised designee. Except in planning watersheds determined to contain coho salmon, chinook salmon, or steelhead, sample marking is satisfactory in those cases where the Director determines it is adequate for the plan evaluation. When sample marking has been used, all marking shall be done in advance of falling operations within the WLPZ.

"E" To ensure retention of shade canopy filter strip properties and the maintenance of wildlife values described in 14 CCR 916.4(b) [936.4(b), 956.4(b)], a base mark shall be placed below the cut line of the residual or harvest trees within the zone and shall be done in advance of timber falling operations by the RPF who prepared the plan, or supervised designee. In planning watersheds determined to contain coho salmon, chinook salmon, or steelhead, tree marking must be completed prior to the preharvest inspection. Sample marking is satisfactory in those cases where the Director determines it is adequate for the plan evaluation. When sample marking has been used, all marking shall be done in advance of falling operations.

"F" Residual or harvest tree marking within the WLPZ may be stipulated in the THP by the RPF or required by the Director in site-specific cases to ensure retention of filter strip properties or to maintain soil stability of the zone. The RPF shall state in the THP if marking was used in these zones.

"G" To protect water temperature, filter strip properties, upslope stability, and fish and wildlife values, at least 50% of the overstory and 50% of the understory canopy covering the ground and adjacent waters shall be left in a well distributed multi-storied stand composed of a diversity of species similar to that found before the start of operations. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers. Species composition may be adjusted consistent with the above standard to meet on-site conditions when agreed to in the THP by the RPF and the Director.

"H" At least 50% of the understory vegetation present before timber operations shall be left living and well distributed within the WLPZ to maintain soil stability. This percentage may be adjusted to meet on-site

conditions when agreed to in the THP by the RPF and the Director. Unless required by the Director, this shall not be construed to prohibit broadcast burning with a project type burning permit for site preparation.

"I" To protect water temperature, filter strip properties, upslope stability, and fish and wildlife values, at least 50% of the total canopy covering the ground shall be left in a well distributed multi-storied stand configuration composed of a diversity of species similar to that found before the start of operations. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers. Due to variability in Class II watercourses these percentages and species composition may be adjusted to meet on-site conditions when agreed to by the RPF and the Director in the THP.