Final
Environmental Impact Report
for the
Soquel Demonstration State Forest
General Forest Management Plan

State Clearinghouse Number 94023033

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Chapter 1. Purpose and Format of the Final Environmental Impact Report

Under the California Environmental Quality Act (CEQA), lead agencies are required, after completion of the draft environmental impact report (draft EIR), to consult with and obtain comments from public agencies concerning the proposed project, and to provide the public with opportunities to comment on the draft EIR. The California Department of Forestry and Fire Protection (CDF), as lead agency, is also required to respond to significant environmental points raised during the review and consultation process.

This document comprises the final environmental impact report (final EIR) as required under CEQA for the Soquel Demonstration State Forest (SDSF) general forest management plan (GFMP). The final EIR consists of the draft EIR, which was circulated separately and is hereby incorporated by reference; comments on the draft EIR; responses to comments; and revisions to the draft EIR. Copies of the draft EIR and additional copies of the final EIR are available for review at the Los Gatos, Santa Cruz Central, and Aptos Libraries. Additional copies may also be purchased at the CDF office at 4750 Soquel-San Jose Road, Soquel, CA 95073.

CDF must consider the information contained in the final EIR and will need to certify the EIR prior to making a decision on the GFMP. To support its decision, CDF will prepare written findings of fact (findings) for each significant environmental impact identified in the EIR. When it makes findings on significant effects identified in an EIR, a lead agency must also adopt a program for reporting or monitoring mitigation measures that were adopted or made conditions of project approval. The purpose of the mitigation monitoring program is to ensure compliance with mitigation measures during project implementation and to provide feedback to agencies during subsequent planning processes. A draft mitigation monitoring program is provided in Appendix A of this document. The CEQA Guidelines also require a lead agency to file a Notice of Determination with the county and the state Office of Planning and Research after deciding to approve a project for which an EIR is prepared [Section 15094]. Posting the Notice of Determination starts a 30-day statute of limitations period on CEQA challenges. [Pub. Res. Code Sec. 21167(c)]

PUBLIC REVIEW OF THE DRAFT EIR

On July 21, 1995, a Notice of Availability of a draft EIR for the SDSF GFMP was distributed to interested agencies, organizations, and individuals. Copies of the draft EIR were provided to

local, state, and federal agencies; interested individuals and organizations; and public libraries in Santa Cruz County.

CDF held a public hearing on August 23, 1995, to discuss and provide opportunity for input on the draft EIR. The draft EIR was circulated for a 45-day public review period, which ended on September 5, 1995. Readers of the draft EIR were asked to submit comments in writing by the close of the review period.

COMMENTERS ON THE DRAFT EIR

A total of 20 letters were received by CDF from individuals, organizations, and state and local agencies. Additionally, eight speakers gave testimony at the public hearing. These commenters are listed below. The numbers reference the comment letter number.

State and Local Agencies

1. Antero Rivasplata, State Clearinghouse Chief, Governor's Office of Planning and Research

2. Ken Aasen, Acting Regional Manager, California Department of Fish and Game

3. Ross Johnson, Forest Practice Regulations, CDF

4. Jason Marshall, Acting Assistant Director, California Department of Conservation, Division of Mines and Geology

6. Jan Beautz, First District Supervisor, County of Santa Cruz

7. Dave Johnston, Resource Planner, County of Santa Cruz Planning Dept.

Organizations

8. Mark Morgenthaler, Citizens for Responsible Forest Management
9. Ida Hills, Sierra Club Forestry Task Force
10. Charlotte Smothers, Summit Riders Horsemen's Association

Individuals

5. Len Theiss of Felton
11. Jerald Cloyd of Santa Cruz
12. Elizabeth Herbert of Aptos
13. Lalo Fiorelli and Evy Cambridge of Soquel
14. Diane Kleiner of Los Gatos
15. Steven Singer of Santa Cruz
16. Sally Francy of Los Gatos
17. Neil and Karlan Amberose of Los Gatos
18. Donald Alley of Brookdale
19. Mark Hamlin of Los Gatos
20. Richard Eliot of Felton

Oral Comments

O1. Mark Morgenthaler
O2. Donald Alley
O3. Steven Singer
O4. Rhonda Schlosser
O5. Tim Kleiner
O6. Ida Hills
O7. Jan Beautz
O8. Mark Hamlin

RESPONSE TO COMMENTS

All comment letters received on the draft EIR were considered by CDF staff and consultants to identify individual comments. Individual comments were identified and numbered within each letter, and each comment was assigned to a resource topic. Individual comments within resource areas were then grouped, where appropriate, into a list of substantive environmental issues that had been raised. These substantive environmental issues are summarized and responded to in Chapter 2, "Substantive Environmental Issues and Responses". Although recurrence of an issue was considered grounds for considering the issue "substantive", a single comment sometimes constituted a substantive environmental issue.

- Appendix B, "Soquel Demonstration State Forest Timber Harvesting Plan Checklist", contains a draft environmental checklist to be used in subsequent environmental assessment of timber harvest planning at SDSF tiered to the program EIR.

- Appendix C, "Examples of Site-Specific Erosion and Sedimentation Control Practices", describes mitigation measures that were implemented in conjunction with the 1995 timber operations at SDSF.

Chapter 2. Substantive Environmental Issues and Responses

INTRODUCTION

Several issues were raised regarding the proposed project and the draft EIR's adequacy. This chapter discusses the most substantive issues identified through analysis of the comments. The issues discussed below are grouped into the following categories:

- scope of the EIR;
- description of the proposed project and alternatives;
- geology, soils, and water quality;
- vegetation and wildlife;
- public safety, public services, and land use;
- recreation, education, and visual resources; and
- traffic and noise.

For each category, substantive issues are stated, the comments received regarding the issue are summarized (with corresponding comment numbers shown in parentheses), and a response is given. In some cases, revisions to the draft EIR were made in response to comments; these revisions are discussed in the responses in this chapter and Chapter 3.

SCOPE OF THE EIR

1-1. Timber Revenues and Operational Costs

Summary of Comments

- How will timber revenues compare with SDSF's operational costs? (6-3, 7-26, 8-1, 8-4, 18-2, 18-3, 18-6, 20-1, O2-17, O2-18)

- Alternatives that would generate revenues in excess of operational costs conflict with Assembly Bill (AB) 1965. (9-1, 9-2)

Response

The Board's rule-making process is a certified regulatory program pursuant to CEQA. As such, all rules and regulations adopted by the Board must:

- ensure that an activity will not be approved or adopted as proposed if there are feasible alternatives or mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment;
- include guidelines for project evaluation;
- ensure lead and reviewing agency consultation;
- ensure written evaluation and responses to significant environmental issues; and
- specify detailed filing and public and agency review procedures.

As a certified regulatory program, the Board's rule-making process is presumed to achieve a level of environmental analysis equal to that of the full CEQA process; significant impacts must generally be avoided or reduced to a less-than-significant level wherever feasible. Each individual rule adoption by the Board is subject to extensive public and internal review, as part of which the Board thoroughly assesses potential significant environmental impacts and identifies feasible alternatives and mitigation measures.

The Rules give detailed guidance to the registered professional forester (RPF) and to the lead and review agencies in evaluating and mitigating the impacts of the proposed timber operations. The Rules require the RPF and involved agencies to evaluate proposed operations and determine whether, despite conformance with the Rules, significant impacts could occur. In such cases, the Rules require that operations be modified or mitigated to avoid or reduce such impacts.

As discussed below under Substantive Issue 3-3 ("Project-Level Erosion and Sediment Control"), the environmental commitments specified in the draft EIR go substantially beyond the requirements of the Rules to further ensure the avoidance of significant environmental impacts.

1-4. Reasonable Range of Alternatives

Summary of Comments

- Alternatives with intermediate activity levels should have been analyzed. (8-5, 9-1, 9-2, O1-4, O2-16, O6-2)

- The alternatives analyzed did not constitute a reasonable range. (O3-10)
- The no-project alternative appears to constitute a project. (O8-3)
- Some alternatives analyzed in the draft EIR are illegal or infeasible. (8-3, 8-6, 9-1, 18-7, 19-3, O2-15, O8-2)

Response

The State CEQA Guidelines require that the EIR analyze a reasonable range of alternatives that could feasibly achieve the project's basic objectives, and evaluate the comparative merits of the alternatives. The guidelines further require that the alternatives focus on opportunities to eliminate or substantially reduce significant adverse environmental impacts. In determining what constitutes a reasonable range of alternatives, the CEQA Guidelines emphasize that discussion of alternative need not be exhaustive and that "the key issue is whether the selection and discussion of alternatives fosters informed decision-making and informed public participation" [Section 15126(d)(5) State CEQA Guidelines].

The EIR for SDSF meets the legal requirements for a reasonable range of project alternatives. In addition to the proposed project, three alternatives (including the no project alternative) were thoroughly analyzed. The main elements of the proposed project that could affect environmental quality are timber management, public use, and natural resource enhancement. The intensities of these elements incorporated into the no-project alternative represent reasonable minimum levels suitable for analysis in the EIR; Alternative 3 is characterized by intensities that represent reasonable maximum levels. The proposed project and Alternative 2 propose intensities of these elements that are intermediate relative those of the no-project alternative and Alternative 3.

Analyzing additional alternatives with other intermediate program levels would not have resulted in the identification any impacts not already addressed, nor provided any other key information on environmental effects not disclosed by the current range of alternatives.

A no-project alternative must be analyzed, regardless of its feasibility or ability to achieve the specified project objectives, as a baseline for comparing other alternatives. The no-project alternative describes maintenance of existing environmental conditions. In the case of SDSF, the no-project alternative is characterized by custodial forest management, i.e., management consistent with levels of timber harvesting and public use that have occurred in recent years. The activity levels specified for the no-project alternative are thus consistent with existing conditions.

As discussed above under substantive issue 1-1 "Timber Revenues and Operational Costs", none of the alternatives analyzed proposes illegal or infeasible rates of timber harvesting.

1-5. Impacts of Implementing the Proposed Long-Term Increase in Harvesting Rate

Summary of Comments

- Impacts of implementing the long-term harvesting rate for the proposed project are not analyzed in the draft EIR. (8-1, 9-3, 18-7, 18-8, 18-10, 18-11, 18-34, 18-35, 20-2, O1-1, O2-2, O6-4)

Response

Under the Proposed Project, the average annual timber harvesting rate would gradually increase from approximately 750 MBF in the first decade to 1,550 MBF in the sixth and subsequent decades. The draft EIR only assessed the impacts of the short-term harvesting rate for the proposed project. Alternative 3, however, proposed an average annual harvesting rate of 2,000 MBF. The EIR has been revised to address the impacts of implementing the long-term harvesting rate for the proposed project; this assessment was based in part on the impact assessment for Alternative 3 in the draft EIR.

Changes in the timber harvesting rate over the long term could affect erosion, sedimentation, water quality, fish habitat, vegetative structure, wildlife habitat, visual resources, logging traffic, and logging-related noise. Soil disturbance could increase relative to short-term conditions because larger areas will generally be disturbed by selective harvesting during each timber sale. Approximately 7 miles of road will be constructed per decade through the first three decades, at which time SDSF's permanent road network will be complete. Following abandonment and vegetation of unneeded roads, the network will include approximately 25 miles of road (i.e., an average of 6.0 miles per square mile). The watershed remediation and fish habitat enhancement programs will be expanded relative to short-term conditions because of increased availability of timber revenues.

Public use will not change relative to short-term conditions because no changes would occur in facilities or use opportunities. Consequently, impacts on public services, land use, recreation, and visitor traffic will not change relative to short-term conditions.

In the long term, all SDSF timberlands that are fully available for timber production (i.e., lands that support timber stands, are feasible to operate logging equipment upon, are not unstable, and are not in old growth or late succession management areas) will be harvested approximately every 10-15 years. The following analysis is based on the assumption that available timberlands are harvested on a 10-year cutting cycle. If, as is likely, the cutting cycle actually implemented is longer than 10 years, proportionately more wood would be harvested per acre during each entry. For selective harvesting at the range of intensities proposed for SDSF (i.e., 10-15 MBF per acre),

harvesting less frequently would generally reduce the watershed impacts of the timber management program. Therefore, the erosion and sedimentation rates projected in this EIR are likely to be overestimated if the actual cutting cycle exceeds 10 years.

Fully available lands encompass approximately 1,475 acres; approximately 290 acres would be selectively harvested (by removing an average of 10 MBF per acre) every other year. Lands with limited availability (e.g., late succession management areas and unstable areas), encompassing 804 acres, would be harvested at the rate of approximately 160 acres every other year, with an average of 3.5 MBF removed per acre.

Erosion and sedimentation rates presented in Table 3-4 of the draft EIR represent annual rates averaged over the 10-decade planning period. The rates shown for the proposed project are based on the short-term harvesting level of 750 MBF per year, however, and do not take into account the proposed gradual increase in harvesting. Table F3-4 in this document replaces Table 3-4 from the draft EIR; Table F3-4 shows erosion and sedimentation rates during the first and sixth decades to describe both short- and long-term conditions. In Table F3-4, the first- and sixth-decade harvest levels for the proposed project are 750 and 1,550 MBF per year, respectively. Proposed harvest rates for all other alternatives analyzed in the EIR are constant over the 10 decades.

The erosion and sedimentation rates for the East Branch watershed shown in Table F3-4 were increased relative to those shown in Table 3-4 of the draft EIR as a result of correcting the watershed area (which is actually 12,240 acres rather than the 8,640 acres reported in the draft EIR). Although the total rates of erosion and sedimentation increase roughly in proportion to the watershed acreage, the percentage increases attributable to each alternative relative to the baseline (i.e., the No-Project Alternative) are not affected by the area of the watershed.

Results of the watershed analysis show that, under the proposed project, erosion and sedimentation rates in the watershed would increase by approximately 50% in the sixth decade relative to the first decade (Table F3-4). Nearly all of this increase is attributable to road construction that would occur within SDSF over the next 30 years, rather than to a gradual increase in timber harvesting under the proposed project. As a result, erosion and sedimentation would be only about 1% higher under the proposed project than under the No-Project Alternative in the both the first and sixth decades (Table F3-4). Erosion and sedimentation within SDSF are also projected to increase under the proposed project by about 1% relative to the No-Project Alternative.

Erosion and sedimentation rates are slightly higher for Alternative 2 than for the proposed project in the first decade, but slightly lower in the sixth decade because the average area disturbed each year by timber harvesting under the proposed project eventually overtakes the area harvested under Alternative 2. These rates are relatively low for Alternative 3, despite its relatively large harvest areas, because of the beneficial impacts that would result from paving the main forest road.

The projected long-term increases in sedimentation attributable to timber operations do not take into account the reduction in sedimentation that would result from watershed remediation

projects that will be implemented in conjunction with timber operations. Such projects are in addition to the mitigation measures required by the Rules to reduce erosion, which are normally adequate to avoid significant water quality impacts. (See Appendix C, which presents an excerpt from the THP for the 1995 timber operations at SDSF describing onsite and offsite mitigation measures to reduce erosion and protect watercourses.) Examples of watershed remediation projects not required by the Rules that will be implemented over the next several years include rocking at least 7 miles of the main forest roads and replacing culverts at risk of failure with larger culverts. For each THP, a registered engineering geologist will review the proposed timber operations and describe in detail feasible erosion and sedimentation control projects to be implemented in conjunction with the operations (see Appendix B, "Timber Harvesting Plan Checklist"). Sedimentation impacts will be reduced to a less-than-significant level during future timber harvesting planning by implementing projects designed to reduce the mobilization and discharge of soil into surface waters.

Although elevated sedimentation levels resulting from timber operations could adversely affect water quality and anadromous fish habitat, such impacts would also be reduced to a less-than-significant level by implementing sedimentation control measures, including those required by the Rules and the planned measures that go beyond what the Rules require. Other potential adverse impacts on water quality or fish resources (e.g., effects on stream temperature, woody debris recruitment, streamflows, channel scour, and harassment of fish by humans) occurring in the long term under the proposed project would be similar to those described in the draft EIR for Alternative 3 and would be less than significant.

Impacts of implementing the proposed project's long-term harvesting levels on vegetation, wildlife, log-truck traffic, and logging-related noise would be similar to those described in the draft EIR for Alternative 3. Potentially significant impacts would result for special-status nesting birds and for neighbors exposed to helicopter noise. These impacts would be reduced to a less-than-significant level by implementing the mitigation measures proposed for Alternative 3.

DESCRIPTION OF THE PROPOSED PROJECT AND ALTERNATIVES

2-1. CEQA Review of SDSF Recreation Master Plan

Summary of Comments

- Recreation and education facility development sites should be specified in the EIR. (7-40, 13-3, 18-45, 18-50, 19-2, 19-10, O2-9, O8-4)

Table F3-4. Projected Annual Short- and Long-Term Erosion and Sedimentation Rates for Soquel Demonstration State Forest and the East Branch Watershed
(cubic yards per year)

Alternative	Soquel Demonstration State Forest				East Branch Watershed			
	Erosion		Sedimentation		Erosion		Sedimentation	
	Decade 1	Decade 6	Decade 1	Decade 6	Decade 1	Decade 6	Decade 1	Decade 6
1	13,200	19,700	5,200	7,800	31,200	37,000	12,400	14,600
Proposed project	13,300	19,900	5,200	7,900	31,400	37,200	12,500	14,700
2	13,300	19,800	5,300	7,800	31,500	37,100	12,500	14,600
3	11,700	18,500	4,600	7,300	29,900	35,300	12,600	13,900
No future disturbance at Soquel Demonstration State Forest	11,700	11,700	4,600	4,600	31,300	31,100	12,400	12,300

- Will the forthcoming recreation master plan for SDSF undergo CEQA review? (7-20, O4-2)

Response

The locations of proposed recreation facilities do not need to be specified in the program EIR, even if the environmental impacts of such facilities could depend on their locations. Program EIRs are intended to address, at a relatively general level, the impacts of a series of closely related actions that may have site-specific considerations that are unknown or unresolvable when the program EIR is prepared. When subsequent activities (e.g., campground construction or access acquisition) are proposed, an initial study must be conducted to determine whether significant impacts not assessed in the program EIR would occur, requiring additional CEQA review.

The locations of proposed recreation facilities are expected to be specified in the forthcoming SDSF recreation master plan. Additional CEQA analysis (i.e., a negative declaration, subsequent EIR, supplemental EIR, or addendum to the program EIR) will be conducted for that document.

2-2. Harvesting in Late Succession Management Areas

Summary of Comments

- No cut-no entry buffers should be established adjacent to streams. (12-1, 14-2, 18-14, 18-58, 18-59, O1-3, O2-3, O2-16)

Response

Designating late succession management areas and watercourse and lake protection zones adjacent to streams as no cut-no entry zones is unwarranted and inconsistent with the SDSF management objectives of achieving sustained yield and demonstrating sound forest management practices. Guidelines and standards specified for these areas in the draft EIR (pages 2-4 and 2-5) and in the Rules ensure that no significant adverse environmental effects will result from such harvesting. For example, no trees with crowns that extend over the stream will be removed, unless a qualified hydrologist or wildlife biologist recommends removal of such trees to enhance riparian habitat or hydrologic function.

2-3. Planting of Conifers in Riparian Zones to Promote Recruitment of Instream Large Woody Debris

Summary of Comments

- Replacement of hardwood trees with conifers in riparian areas would adversely affect watershed function and biodiversity. (7-37, 18-7, 18-42, 18-55, O2-4)

- Removal of hardwood vegetation could adversely affect breeding of nesting birds. (18-60, 18-61, 18-62, O2-5)

Response

Conifers will be planted in riparian zones to promote long-term recruitment of large instream woody debris. In some cases, suitable planting sites will be prepared by removing exiting hardwood trees. Such removals will not be extensive; they will conform with all harvesting guidelines for late-succession management areas specified on pages 2-4 and 2-5 of the draft EIR and with the watercourse and lake protection zone standards in the Rules. Timber removals in riparian areas would be scheduled to avoid disturbance of nesting birds. The prescribed limitations ensure that no significant impacts would result from proposed hardwood removals.

GEOLOGY, SOILS, AND WATER QUALITY

3-1. Methodology for Estimating Erosion and Sedimentation Rates

Summary of Comments

- The methodology for assessing geologic impacts in the draft EIR results in the underestimation of erosion and sedimentation. (6-2, 15-1, 15-2, 18-26, 18-39, O2-6, O3-1, O3-11, O3-13)

- Modifying the Cafferata and Poole (1993) data set by removing an observation accounting for a large portion of the total harvest-area erosion observed in their analysis was inappropriate and results in underestimation of erosion. (12-2, 15-1, 18-19, 18-20, 18-31, O3-4)

- Modifications to Cafferata and Poole's results regarding the relative erosion rates for forest and nonforest lands result in underestimation of erosion attributable to timber operations. (12-4, 18-18)

- Modifications to Cafferata and Poole's results regarding annualization of erosion rates bias the erosion projections. (18-29)

- The assumption that mass movements are unrelated to human disturbance is invalid. (15-2, 18-21, 18-30, 18-32, O3-2)

- What was the basis for assuming that harvest areas would recover within five years? (5-8, 12-3, 15-1, 18-22, 18-26, 18-27, 18-28, 18-29, O3-3)

- The relatively large erosion events observed by Cafferata and Poole on areas that have not been harvested recently show that harvest areas do not recover within five years. (18-23, 18-24)

- Not all erosion occurs on lands with high or extreme erosion hazard. (7-17, 14-5)

- What was the basis for assuming that most erosion occurs during large storm events? (18-25, 18-26)

- What was the basis for assuming that few large gullies will result from future timber operations? (12-2, 18-17, 18-18, O3-3, O3-4)

Response

Erosion and sedimentation rates were projected for the East Branch watershed using a variation on the methodology developed by Lewis and Rice (1989) as applied to the East Branch watershed by Cafferata and Poole (1993). This methodology projects total erosion as the sum of critical erosion events (i.e., events exceeding 100 cubic yards per acre) and smaller events.

Revisions to Cafferata and Poole's Results. As discussed on pages 3-13 through 3-16 of the draft EIR, Cafferata and Poole's results were modified for use in the draft EIR to avoid bias and increase the reliability of projected erosion rates by removing an anomalous sample plot from the data set that accounted for approximately 90% of all surface erosion recorded at all 26 sample plots, by using more reasonable recurrence periods, and by attributing a more reasonable portion of the total erosion to nonforest areas.

The principal effect of the modifications to Cafferata and Poole's result was not to change the total amount of erosion projected for the watershed, but to redistribute the total projected erosion among harvest areas, roads, and nonforest areas. The aggregate effect of these modifications was

to reduce the projected annual erosion rate for the watershed by 15%, from Cafferata and Poole's estimate of 27,848 cubic yards per year to 24,200 cubic yards per year in the draft EIR. Because of the limited amount of empirical information used by Cafferata and Poole to project erosion, and because of the extreme year-to-year variability of erosion in the watershed, the projected rate must be considered a rough estimate of the actual average annual erosion rate. For assessing the impacts of the proposed project, however, variations in average erosion rates between the EIR alternatives are more important than the average rate for the entire watershed.

Background erosion rates (i.e., erosion attributable to past human disturbance and to the inherent instability of the watershed based on its soils, geology, and seismicity) and erosion rates attributable to proposed timber operations are both unusually high in the East Branch watershed relative to other California watersheds. Cafferata and Poole assumed that annual erosion attributable to proposed timber operations included 0.3 cubic yards per acre for harvest areas and 360 cubic yards per mile for forestry roads in use. In contrast, the draft EIR assumed that annual erosion attributable to proposed timber operations included 2.2 cubic yards per acre for harvest areas and 380 cubic yards per mile for forestry roads in use. The draft EIR attributed a substantially larger share of the total erosion in the watershed to project-related timber operations than Cafferata and Poole did, primarily because Cafferata and Poole attributed 41% of the total erosion to nonforest lands, whereas the draft EIR attributed only 10% of the total to nonforest lands. As stated in the draft EIR, this adjustment was based on Rice's (1993) estimates for erosion rates for forest and nonforest roads in north coast basins. Thus, because of the assumptions underlying the analysis in the draft EIR, more erosion is attributed to proposed timber operations than those used by Cafferata and Poole, leading to greater differences between the erosion projections for the various EIR alternatives.

The anomalous observation discussed above was removed from the data set used for the draft EIR because including it would have biased the erosion projections by attributing an unreasonably large share of the total erosion to noncritical erosion events (i.e., events accounting for less than 100 cubic yards per acre). Although the anomalous observation was classified by Cafferata and Poole as a noncritical event, the erosion volume estimated at this plot (1,039 cubic yards per acre) greatly exceeded the maximum volume for noncritical events. The large gully observed by Cafferata and Poole did not enter into the estimation of erosion rates for the draft EIR. As discussed in the draft EIR, critical erosion events are the predominant source of erosion in the East Branch watershed; had the anomalous observation not been omitted, the relative importance of noncritical erosion events would have been substantially overstated.

Recurrence periods used to annualize predicted erosion levels were revised from the periods used by Lewis and Rice to 5 years in the draft EIR. As discussed in the draft EIR, these revisions were based on the premise that the average recurrence period for storms large enough to cause extensive landsliding (approximately 5 years in the Santa Cruz Mountains) represents a more reasonable basis for annualizing erosion rates than timber-harvest reentry periods of 20-75 years, as used by Lewis and Rice. Some of the larger erosion sites observed by Cafferata and Poole had been developing over several decades, which supports the use of recurrence periods longer than 5 years. The estimated annual erosion rate is inversely related to the recurrence period; the 5-year

recurrence period represents a conservative assumption tending to overstate erosion rates attributable to timber operations.

Long-Term Average Erosion Rates in Relation to Disturbance and Recovery. The projected erosion rate for forest roads in use, shown in Table 3-3 of the draft EIR, represents an average of erosion rates for new road construction and existing roads in use. The projected rate for recently harvested areas includes erosion resulting from ground disturbance caused by tractor traffic and the dragging of logs. It represents a long-term average including years with unusually large storms and relatively dry years. No explicit assumptions were made as to the proportion of the total erosion that occurs during large storms. Although areas with high erosion hazards were assumed to have relatively high risk of having critical erosion events, all lands (including moderate- and low-erosion hazard lands) were assumed to have positive erosion rates.

The draft EIR assumed the erosion rate for harvested areas declines by 50% five years following harvest. Although this assumption is simplistic (e.g., it does not explicitly consider the interdependence of recovery period and the timing of major storm events), it results in a reasonable approximation of actual harvest-area recovery, as observed and documented in several scientific studies (Beschta 1978 and Anderson 1962). Relative to other conifer forests, harvested redwood stands recover rapidly because, unlike other conifers, the root systems of redwood trees continue to live and function as soil stabilizers after their stems have been severed. Although some sites on the watershed that were damaged by logging several decades ago are still eroding at elevated rates, other harvested areas recover in less than 5 years; the assumption of an average recovery period of 5-years is reasonable, particularly for the relatively light selection harvests proposed.

Although Cafferata and Poole did not record the year of the most recent harvest at their sample plots, their plots were randomly distributed throughout the watershed. Essentially the entire watershed has been logged since 1900, with approximately 10% of the watershed having been logged within the past 10-20 years.

Critical Erosion Risk in Relation to Disturbance. The statement on pages 3-15 and 3-16 of the draft EIR that "Erosion attributable to critical events was assumed to be unaffected by either logging disturbance or recovery from such disturbance" is incorrect. Although the Lewis and Rice methodology is based on the finding that site conditions are more important than logging history in determining critical erosion risks, the methodology recognizes that landslide risk can be affected by timber operations (e.g., by poorly designed roads or tractor traffic in unstable areas). Lewis and Rice did not explicitly include logging history as a predictor of critical-event risk because, based on statistical analysis, such variables were determined to be insignificant relative to slope, road curvature, parent rock strength, and soil hue. Logging history is implicitly included in the Lewis and Rice methodology, however, in that the erosion projections resulting from its application are based on the assumption that the landslide risk for the entire analysis area has been affected equally by past logging activities.

Likelihood of Large Gullies Resulting from Timber Operations. Although large gullies have developed at SDSF (including two located at plots observed by Cafferata and Poole) as a result of historical timber operations, gullies are unlikely to result from proposed timber operations. One principal source of gullies at SDSF is roads or skid trails that cross streams and divert their flows. Water moves down the road or trail for a distance before being discharged downhill; gullies often form in the road bed or at the point of discharge. The second principal source of gullies at SDSF is the historical use of stream channels as skid trails; skidding logs down the channels resulted in their being flattened and straightened, thus increasing the velocity and erosive power of their flows. (Spittler pers. comm.)

The current Rules address both of these sources of gullies and minimize the likelihood of large gullies resulting from timber operations. Stream channels may not be used as skid trails; skid trails and roads generally may not be constructed within watercourse and lake protection zones adjacent to streams except at prepared stream crossings [14 CCR 916.3 (c)]. Skid trails that cross streams in which water is present during the life of the crossing must have permanent structures (e.g., culverts) installed at the crossing to avoid sediment discharge [14 CCR 914.8 (b)]. Temporary crossing facilities at streams that are dry during the period of use must be removed before the beginning of the winter period [14 CCR 914.8 (d)]. Roads and landings must include an adequate number of drainage structures to minimize erosion [14 CCR 923.1 (f) and 14 CCR 914.6 (c)]. Drainage structures must be maintained to ensure their continuous functioning so as to minimize erosion [14 CCR 914.6 (h)]. Drainage structures must be installed in such a way as to minimize erosion [14 CCR 923.2 (h)]. New road construction must incorporate design features (e.g., "rolling dips") to prevent diversion of flows down the road in the event that drainage structures become blocked [14 CCR 923.3 (e)]. Conformance with these and related rules greatly reduces the likelihood of gully formation relative to historic conditions (Spittler pers. comm.).

3-2. Significance Criteria for Sediment Impacts

Summary of Comments

- Any additional discharge of sediment to surface water attributable to timber operations should be considered to be a significant adverse impact. (7-32, 15-2, 18-41, O3-9, O5-7)

Response

The draft EIR specifies (page 3-17) that impacts on erosion or sedimentation were considered significant if an alternative would result in:

- any increase in erosion that is expected in result in an appreciable increase in sediment discharge to the East Branch or its tributaries or

- changes in sedimentation that exceed by at least 5% corresponding rates projected to result under the No-Project Alternative.

The significance threshold for sedimentation was set at the 5%-increase level instead of the zero-increase level primarily because of the imprecision inherent in all landscape-level watershed models. Because of this imprecision, variations in projected sedimentation rates of less than 5% are generally statistically insignificant and, for practical purposes, indistinguishable from a no-change condition; arriving at a conclusion of a significant impact in such cases would require speculation. In addition, projected sediment increases do not take into account the effects of watershed remediation projects to remove sediment deposits at sites of severe erosion. Sedimentation attributable to timber operations under the proposed project was projected to increase by 2% relative to the No-Project Alternative over the next decade (Table 3-4, page 3-19 in the draft EIR). Proposed watershed remediation, including both all onsite and offsite mitigation measures required by the Rules and remediation projects beyond those required by the Rules, ensure that no significant increases in sediment discharge would result from proposed timber operations.

3-3. Project-Level Erosion and Sediment Control

Summary of Comments

- The Rules are inadequate to protect watershed resources in the East Branch basin and to prevent downstream flooding. (7-4, 15-3, O3-7, O3-8)
- Existing skid trails should be used only if they are stable. (7-15)
- Participation in preharvest inspections by a Regional Water Quality Control Board representative is unlikely. (7-29)
- How will improving drainage increase the stability of a landslide? (7-19)

Response

The California Porter-Cologne Act requires regional water quality control boards to set and enforce standards for non-point discharges to waters of the state, including discharges resulting from timber operations. The regional boards are authorized to issue waste discharge permits to non-point dischargers. Timber operations conducted under approved THPs have been exempted from the requirement to obtain such permits, however, on the condition that the operations conform with the regional basin plan and the Rules.

The intent of the Rules is to insure the protection of beneficial uses of watercourses and to restore, enhance, and maintain the productivity of timberlands (14 CCR 916). These operational rules have been rigorously developed and revised by experts to address a wide range of conditions affecting water quality throughout California. Because of the great diversity of conditions throughout the state's timberlands, however, the Rules inevitably are less applicable in some areas than in others. Consequently, it is possible that under certain conditions (dependent primarily on the weather and on the ability and conscientiousness of the timber operator), timber operations that fully comply with the operational rules specified in these sections could result in significant adverse impacts, such as elevated sedimentation rates affecting the beneficial uses of water. The Rules [14 CCR 916.2 (c)] take into account the impossibility of prescriptively addressing all potential conditions in a single set of rules, however, by requiring that when the measures prescribed in the Rules are inadequate to provide protection for beneficial uses, feasible protective measures shall be developed by the RPF or the Director of CDF and incorporated into the THP.

Timber operations at SDSF will go substantially beyond the standards specified or implied in the Rules to control erosion and sedimentation and protect beneficial uses of water. For example, harvesting in late-succession management areas within 300 feet of Class I streams will be restricted substantially relative to the level allowable under the Rules. A registered engineering geologist will review and approve the proposed locations of all new roads and landings and all skid trails that require predesignation or are on unstable areas to ensure that soil disturbance, landslide risk, and downstream flooding risk resulting from the timber operations are minimized. In most cases, an engineering geologist is likely to be more qualified than a water-quality specialist (e.g., a regional water quality control board staff member) in prescribing appropriate measures to minimize erosion and sedimentation.

Existing skid trails will generally be used if doing so would minimize soil disturbance, but new trail alignments would be selected if the existing trails are unstable, erodible, or close to streams.

As part of the SDSF natural resource enhancement program, suitable areas where landslide risks have been increased by past human disturbance (e.g., piling of sediments and road and skid trail construction resulting in concentrated runoff) will be treated to reduce the risk of mass movements. One type of project that could be implemented under this program is installing drainage structures to avoid concentrated discharge to slide-prone areas. Soil saturation can increase landslide risk by increasing the mass and reducing the resisting forces of unstable areas.

3-4. Ongoing Performance Monitoring Program

Summary of Comments

- SDSF needs a detailed erosion control plan. (14-2)

- SDSF should maintain records of repairs and maintenance of culverts, roads and trails. (7-16, O3-8)

- The draft EIR should require monitoring to verify the projected erosion and disturbance of the watershed. (18-5, 18-41, O2-1)

Response

The performance of watershed enhancement projects and mitigation measures will be evaluated on an ongoing basis to determine whether such actions are accomplishing their objectives of minimizing the adverse environmental impacts of watershed disturbance associated with timber operations and public use. Key elements of watershed monitoring will include roads, culverts, large sediment stores, fish populations, aquatic ecological conditions, and pool depths and volumes. Wildlife habitat monitoring will focus on changes in riparian habitat resulting from public use and timber operations. The monitoring program for SDSF is described in detail in the monitoring plan that accompanies this final EIR (Appendix A).

3-5. Sedimentation and Flooding in Amaya Basin

Summary of Comments

- Harvesting on steep slopes in Amaya Basin will result in substantial erosion and sedimentation. (6-2, 7-24, 14-5, 18-7, 18-36, O2-16, O3-5)

- Proposed road construction and harvesting at elevations below 1,000 feet above mean sea level would result in significant watershed impacts and increase flood risks for downstream residents. (15-2, 18-33, O3-6)

Response

The stream reach consisting of the lower mile of Amaya Creek has been described as the "second-most impacted stream in the [Soquel Creek] watershed" because of the high concentration of movable logs that were deposited in the channel by many landslides in 1982 (Singer and Swanson 1983). Although many of these logs were subsequently cleared, this entire reach has been assigned a poor stability rating (Cafferata and Poole 1993). Much of the creek's banks consist of older landslide deposits (Manson and Sowma-Bawcom 1992). The predominance of unstable areas in this basin indicates the need for careful planning of any activities (e.g., timber operations) resulting in soil disturbance.

Suggestions contained in comments on the draft EIR that no disturbance occur in Amaya Basin or that no disturbance occur at elevations lower than 1,000 feet above mean sea level were considered but found to excessively restrict forest management practices proposed at the programmatic level. If restrictions on timber operations beyond those specified in the draft EIR are warranted to reduce watershed disturbance or risks of downstream flooding, they will be identified and implemented through project-level timber harvesting planning based on onsite evaluations by a registered engineering geologist and a RPF.

To assist in project-level planning of timber operations in Amaya Basin, a registered engineering geologist will prepare a map delineating mass wasting hazard and surface erosion potential for the basin; risk classes will be delineated based on the presence or absence of landforms and soils predisposed toward deep-seated or shallow landslides and elevated rates of surface erosion. Opportunities for cost-effectively reducing risks of sediment discharge to and flooding of Amaya Creek will also be evaluated as part of future timber harvesting planning and implemented in conjunction with timber operations.

VEGETATION AND WILDLIFE

4-1. Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife

Summary of Comments

- Replacing hardwoods with conifers to promote recruitment of large woody debris is unwarranted. (7-33, 18-42, O2-4, O2-8, O2-19)
- Riparian areas will benefit greatest if they are not disturbed. (14-2, 18-16)
- Is the objective of replacing riparian hardwoods with conifers to increase timber production? (18-43)
- Removal of riparian hardwoods would adversely affect wildlife. (7-37, 18-51, 18-54, 18-55, 18-56, 18-57, 18-58, 18-59, 18-62, O2-3, O2-7)

Response

The objective of planting conifers in the riparian zone is to recruit large woody debris. In some areas of SDSF, fish habitat is limited by the scarcity of large, woody debris, which could be effectively produced by conifers (see page 2-11 of the draft EIR).

A scientific investigation into the role of conifers as contributors of large woody debris to streams have been conducted on small (averaging less than 10 feet wide) steelhead trout and coho salmon streams in western Oregon (Sedell et al. 1988). The authors found that alders tend to dominate riparian zones in managed forests where no mature conifers occurred, a condition similar to many riparian areas at SDSF where past logging has reduced or eliminated mature riparian conifers (Sutfin pers. comm.). Instream alder debris is typically less stationary than conifers (e.g., Douglas-firs) because the alder debris is shorter, of smaller diameter, more easily broken, and less well anchored than conifer debris (Sedell et al. 1988). Because of their shallow rooting depth, alders have low resistance to undercutting compared to the deeper-rooted conifers. Thus conifers are more desirable than hardwoods as a source of instream woody debris (Sedell et al. 1988).

The amount of timber harvesting proposed for riparian corridors at SDSF is extremely limited and would not substantially change the vegetative structure of the riparian habitats. Therefore, red-legged and yellow-legged frog habitat would not be significantly affected by proposed management activities. Although cutting of hardwoods (or conifers) in the riparian corridor could result in adverse effects on nesting birds (as described in Chapter 5 of the draft EIR), potential impacts of harvesting on nesting birds and other riparian species will be assessed site-specifically during project-level planning.

4-2. Impacts of Public Use and Related Facility Development on Riparian Habitat

Summary of Comments

- Will any new trails or other facilities be located in riparian corridors? (18-45, O2-10)
- To avoid degradation of riparian habitat, no public-use facilities should be constructed in riparian corridors. (18-47)
- Public use in riparian corridors will degrade habitat. (7-37, 18-44, 18-48, O2-9)
- The assumption that only 5% of the riparian zone would be accessible to visitors is invalid. (18-44, O2-11)

Response

Locations of any new trails to be constructed at SDSF have not yet been determined. Proposed trail alignments will be identified in the forthcoming recreation master plan; any potentially significant environmental impacts of such trails will be assessed in a separate CEQA

document for the recreation master plan. Such analysis will consider the relative benefits and adverse effects of alternative trail alignments, including trail segments within riparian corridors.

Although a relatively large proportion of visitors to SDSF are likely to visit streams (especially the East Branch), and a small proportion of such visitors could cause intentional or incidental damage to riparian vegetation, such damage would generally not substantially affect the vegetation's habitat value. To ensure that damage to riparian vegetation resulting from public use does not progressively degrade riparian habitat, however, an ongoing monitoring program will be implemented to record and evaluate such damage. SDSF staff will make records of all incidents of substantial damage they observe. A qualified wildlife biologist will periodically review such records and survey selected areas of damage. If, in the professional judgment of the wildlife biologist, such damages cumulatively constitute a significant adverse effect on wildlife, the SDSF manager will implement appropriate actions (e.g., restrictions on public use) to ensure that the source of the damage is controlled and that damaged areas are restored.

The potential for users to cause substantial adverse effects on fish though poaching or other forms of harassment was assessed in the draft EIR and determined to be less than significant in part because only 5% of stream areas was estimated to be accessible to users. In fact, the portion of stream reaches accessible to the public substantially exceeds 5%. The significance conclusion for this impact has been revised to "potentially significant" in the final EIR. This impact will be reduced to a less-than-significant level by implementing the following mitigation measures.

- Ongoing patrols of streamside areas by CDF and DFG staff will enforce existing prohibitions on fishing and will record any observed incidents of poaching or other fish harassment.

- The ongoing monitoring program will periodically assess the condition and trend of anadromous fish populations using SDSF streams.

- If substantial declines in fish populations are identified through the monitoring program that are likely be the related to human harassment (as opposed to habitat changes), public use restrictions will be implemented as appropriate to control such harassment.

4-3. Achieving Maximum Sustained Production

Summary of Comments

- Additional data on forest growth and yield are needed to comply with the requirement in the Rules to achieve maximum sustained production of high quality timber products. (3-3, 20-2, O6-1)

- The definition of sustained yield as used in the draft EIR is unclear. (7-2, 7-38)

Response

The analysis of maximum sustained production (MSP) in the draft EIR focused on changes over time in average stocking level (i.e., timber volume per acre) and corresponding stand growth rates. It showed that, for all alternatives, forestwide growth would continue to exceed harvest levels and, thus, average stocking levels and annual growth would continue to increase. The analysis concluded that proposed harvesting would not reduce SDSF's future capacity to produce timber products.

The MSP analysis in the draft EIR neglected two important considerations. First, it did not consider the proposed increase in the average annual harvesting rate (i.e., for the proposed project) from approximately 750 thousand board feet (MBF) per year in the first decade to approximately 1,550 MBF per year in the fifth and subsequent decades. Second, it did not consider the unavailability of some SDSF areas (e.g., grasslands, brushlands, streams, ponds, trails, landings, inoperable areas, old-growth management areas, roads, and unconvertible hardwood areas) for timber harvesting or the limited availability of other areas (e.g., late succession management areas, recreation sites, and unstable areas). At SDSF, 55% of the area (1,475 acres) is fully available for timber production, 30% (805 acres) has limited availability, and 15% (400 acres) is unavailable (Sutfin pers. comm.).

The Rules [14 CCR 913.11] specify that, for properties where a sustained yield plan or a nonindustrial timber management plan has not been approved, MSP will be achieved by balancing growth and harvest over time, maintaining a timber inventory capable of sustaining the long-term sustained yield (LTSY) (i.e., the harvest level projected to be sustainable after 100 years), and having the projected annual harvest level for all future rolling 10-year periods not exceed the LTSY. These results need to be demonstrated by projecting stocking conditions, growth, and harvest levels for the planning area over a 100-year period based on the best available information and accepted principles of forest management and statistics (Eng pers. comm.).

Timber inventory data used in this EIR were obtained through surveys conducted in 1991 and 1993. The 1991 survey consisted of installation of 277 variable-radius plots within the 2,681-acre ownership, for an average sampling rate of one plot per 9.7 acres. Plot centers were selected based on a predetermined rectangular grid at a spacing of 8 chains by 12.5 chains. (One chain equals 66 feet.) Three-fourths of the plots were count plots, for which only numbers of stems were tallied by species and diameter. The remaining plots were measure plots, for which heights were measured and crown positions were recorded for merchantable conifers, in addition to species and diameter data.

The 1993 survey consisted of visits to 30 of the measure plots installed in 1991, selected with probability proportional to estimated volume per acre, to assess growth. Volume growth was estimated based on measures of tree height and 5- and 10-year radial growth.

Survey results indicate that the forestwide volume of redwoods and Douglas-firs averages 28.8 MBF per acre, with an error of 7.2%, and that forestwide annual growth of these species averages 972 board-feet per acre, with an error of 7.3% (Lee 1993).

MSP was reanalyzed for the final EIR based on the following simplifying assumptions:

- stand age averages 60 years;
- all SDSF timberlands support mixed-species, mixed-age stands of redwood, Douglas-fir, and hardwood trees with an average stocking level of 30 MBF per acre;
- all SDSF timberlands are currently growing at an average rate of 1 MBF per acre per year, and will maintain this average growth rate over a wide range of stocking levels and average stand ages;
- harvesting will remove an average of 10 MBF per acre from fully-available lands and 3.5 MBF per acre from lands with limited availability each decade; and
- the forestwide harvesting level will gradually increase from 750 MBF per year in the first decade to 1,550 MBF per year in the fifth and subsequent decades.

These assumptions are highly conservative. Although timber stocking varies between stands, approximately 65% of the SDSF timberland supports stands with most trees in the 12-24 inch dbh range and 35% supports stands with smaller trees (refer to Table 5-1 in the draft EIR). In addition to the average redwood/Douglas-fir stocking rate of 28.8 MBF per acre, the contribution of hardwoods to total volume is similar to that of redwoods (Lee 1991). Approximately 550 MBF were harvested from SDSF in 1995 (Sutfin pers. comm.).

Similarly, although actual and potential growth rates vary between stands, site index (i.e., a measure of potential productivity defined in terms of the height in feet of dominant trees at stand age 50) for all SDSF timberlands is within the range of 127-170, for a weighted average of 143 (U.S. Soil Conservation Service 1980). Normally-stocked, 60-year-old young-growth redwood stands within this range of site indexes grow at an average rate of approximately 1.2- 2.2 MBF per acre (Lindquist and Palley 1963). SDSF stands will generally grow at least 1 MBF per acre per year, provided they are managed to supply adequate sunlight to young trees (Lindquist pers. comm.). In 1991, stand growth (including only redwoods and Douglas-firs) averaged approximately 1 MBF per acre (Lee 1991).

Table F5-5. Projected Distribution of SDSF Timberlands with Full and Limited Availability by Average Conifer Stocking Level over 10 Decades

Availability Class	Stocking Level (MBF/acre)	Acres by Decade									
		1	2	3	4	5	6	7	8	9	10
Full	30	1,475	645								
	40		830	1,455	955	620	620	620	620	620	620
	50			20	520	855	855	855	855	855	855
	Acres harvested	645	810	975	1,140	1,305	1,475	1,475	1,475	1,475	1,475
Acres harvested as percent of acres in class		44	55	66	77	88	100	100	100	100	100
Limited	30	805									
	36.5		300								
	40		505								
	46.5			586							
	50			219							
	53				52						
	56.5				753						
	63					257					
	66.5					548					
	73						500				
	76.5						305				
	83							714			
	86.5							91			
	89.5								123		
	93								682		
	99.5									591	
	103									214	
	109.5										805
	Acres harvested	300	286	271	257	243	214	214	214	214	214
Acres harvested as percent of acres in class		37	36	34	32	30	26	26	26	26	26

Figure F5-1. Projected Annual Conifer Growth and Harvest on SDSF Timberlands with Full or Limited Availability

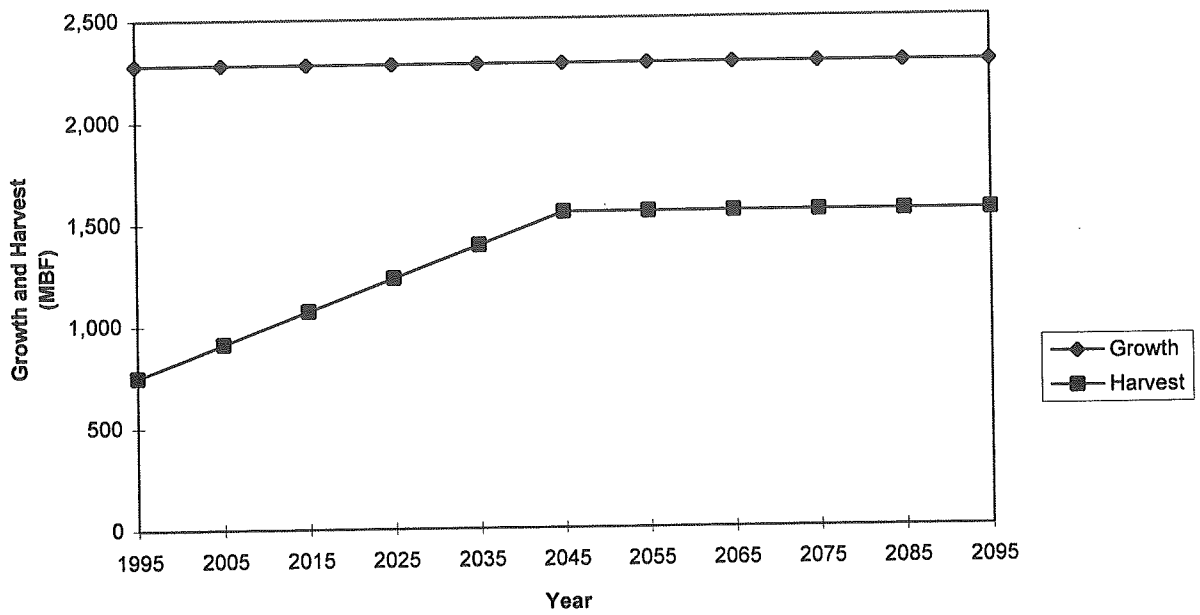
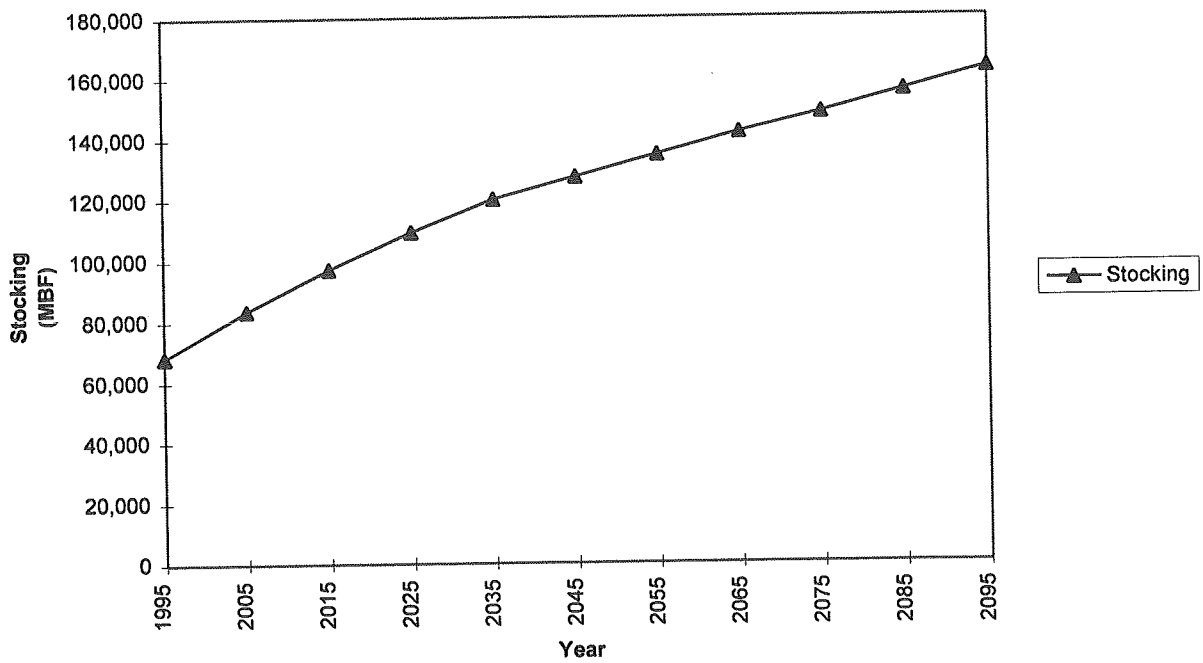


Figure F5-2. Projected Annual Conifer Stocking on SDSF Timberlands with Full or Limited Availability



The projected distribution of SDSF timberlands by average stocking level over the next 10 decades under the proposed project is shown in Table F5-5 of this final EIR. Based on the above assumptions, fully-available timberlands account for 86% of the total first-decade harvest, and lands with limited availability account for the remaining 14%. In the first decade, a total of 645 acres of fully-available land and 300 acres of less available land are harvested. The total area harvested each decade then increases through the fifth decade, when the entire 1,475 acres of fully-available land and 214 acres of less available land are harvested. From the fifth through the tenth decades, all fully-available lands are harvested (at the relatively light intensity of 10 MBF per acre) approximately once per decade.

As shown in Table F5-5 and Figures F5-1 and F5-2, the average stocking level on fully-available lands increases from 30 MBF per acre to a weighted average of 46 MBF per acre after ten decades. The average stocking level on lands with limited availability gradually increases over this period to 110 MBF per acre. Based on the stocking conditions projected for the tenth decade, the LTSY for SDSF is at least 1,757 MBF per year; this estimate is very conservative. The LTSY could be increased if more harvesting occurred in the less-available land class. This analysis shows that the proposed harvesting schedule balances harvest and growth, maintains an inventory capable of producing the LTSY, and does not exceed the LTSY in any future period.

PUBLIC SAFETY, PUBLIC SERVICES, AND LAND USES

5-1. Wildfire Risks

Summary of Comments

- No fires should be allowed in SDSF. (13-1)
- Fire protection services at SDSF are currently inadequate. (14-3, 14-4, O5-2)
- Overnight camping at SDSF will result in unacceptable fire risks. (17-1)
- Fire risks at SDSF will increase with public use levels. (19-12, O5-1, O5-3)
- Because of the potential for rapid fire spreading, prevention needs to be effective. (O5-5)

Response

Although public use is projected to increase substantially over the next 10 years, only registered campers will be allowed to use fires or smoking materials. Campground use will be

limited to 12-20 parties per year of up to 40 people each. Risks of wildfire resulting from camping will be controlled by requiring that campfires be confined to constructed, cleared fire rings. Restrictions on use of fire will be enforced by ranger patrols. SDSF staff will increase public fire safety by implementing a user education program focusing on fire prevention. No open fires will be allowed during periods of high or extreme fire danger and SDSF will be closed to public use when fire risks become excessive.

Experience at the Forest of Nisene Marks State Park confirms the relatively small effect of increasing public use on fire risk. Public use at the neighboring Forest of Nisene Marks State Park has resulted in two of the six fire starts over the last 20 years; these fires were not severe and were easily controlled (Waggoner pers. comm.). The risk of fire increases with increasing public use, but the critical elements for controlling fire risk are maintenance of roads and access points, patrols of the forest to enforce fire prevention rules and to provide early detection, and pre-planning for fire control (Waggoner pers. comm.).

Wildfire risks will also be reduced by conforming with sections of the Rules regarding fire prevention and control, including preparation of a presuppression plan addressing the need for fuel breaks, water tanks, and emergency heliports.

Existing and future closures of Highland Way due to landslides limit the ability for emergency response from Burrell Station via Highland Way; however, emergency teams from Burrell Station can access the forest via Long Ridge Road. Sources of fire suppression forces are capable of responding quickly and effectively to any fires at SDSF. Approximate fire response times to the SDSF boundary are as follows:

- 20 minutes from Corralitos Station to the main entrance on Highland Way (Thomas pers comm.),
- 15 minutes from Burrell Station to the Long Ridge access point (Tomkovic pers comm.),
- 5 minutes from Soquel Station (seasonal) to Olive Springs Road entrance (Sutfin pers comm.), and
- 10 minutes from Alma Helitack Station to SDSF.

Fire response times within SDSF also would be shortened by implementing the mitigation measure (see page 6-13 of the draft EIR) to maintain trails and clear roads.

Although the characterization of SDSF's climate as "cool and damp" is more accurate for the winter season than in other seasons, morning coastal fog, which frequently covers SDSF's lower slopes, substantially reduces fire hazards relative to inland areas.

6-1. Public Use Projections

Summary of Comments

- What was the basis for the public use projections? (5-4, 18-46, O4-1)
- The assumption that public use trends will be independent of facilities or service levels provided is invalid. (7-6)

Response

As discussed in the draft EIR (pages 1-5 through 1-6 and 7-3 through 7-5), public use levels in 2005 were projected based on:

- use trends by activity during the 1990-1994 period,
- projected regional population growth,
- expected growing public awareness of available recreation opportunities, and
- expected development of more convenient access and parking facilities.

Based on this information, these assumptions, and using professional judgment, total use of SDSF was projected for 2005 for the no-project alternative. Total use was then distributed among the activities based on the assumptions that mountain biking would account for a constant share (77% in both 1994 and 2005) of the total use, and that hiking and equestrian use would decline in relative importance as other uses (e.g., camping) increased in importance. Finally, projected use by activity was adjusted relative to the no-project alternative for the proposed project and for Alternatives 2 and 3 based on corresponding variations in facilities, public use programs, and use restrictions.

The draft EIR states that use at SDSF is expected to increase regardless of the extent of facility development, not that use and facility development are independent (page 1-5). The change in public use between 1994 and 2005 for the no-project alternative (an increase of 6,100 visitor days) is large relative to the variation in use in 2005 between the no-project alternative and the proposed project (400 visitor days) because no major differences distinguish these two alternatives with regard to either demand for or supply of public use opportunities.

TRAFFIC AND NOISE

7-1. Location of the New Access Road

Summary of Comments

- Acquisition of specific properties for new access to SDSF is speculative and thus an invalid assumption for traffic analysis in the draft EIR. (7-22, 19-16, O8-1)

Response

A new access road to SDSF is an element of the GFMP. To assess the traffic impacts of developing this road, the Noren property was identified as the most likely location for the road. The draft EIR analyzed traffic impacts based on the assumption that the road would be developed at this location. This assumption was made because, although it involves uncertainty, it facilitated the impact analysis. Although the traffic impacts associated with a new access will depend, in part, on the location of the proposed road, the traffic analysis does not critically depend on the road location. Like other planning assumptions the EIR is based upon (e.g., projected public use levels, timber harvest rates, and erosion rates), the assumed location of the road may turn out to be incorrect, which could reduce the reliability of the traffic impact assessment. CEQA, however, encourages the use of such assumptions in program EIRs, despite their uncertainty, providing that, if the assumptions are subsequently determined to be in error and, as a result of such errors, the impact assessment is substantially flawed, additional CEQA analysis will be conducted based on revised assumptions before projects with potentially significant environmental impacts are implemented.

The State CEQA Guidelines [Section 15168(c)] direct that subsequent activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared. Construction of the new access road will be evaluated, and if, based on the site-specific analysis, potentially significant environmental effects not disclosed in the program EIR are identified, subsequent CEQA analysis would be conducted for the road.

7-2. Methodology for Projecting Traffic Levels

Summary of Comments

- What was the basis for the projected traffic levels in the draft EIR? (6-1, 19-23)

- Increases in traffic under the proposed project relative to the no-project alternative appear to be underestimated. (19-25)

Response

Peak-day traffic levels at SDSF were projected for the proposed project based on the following assumptions:

- a total of 10,700 visitor days of public use will occur in 2005,
- 75% of the total use will occur during April-October,
- 65% of the nonwinter period use will occur on weekend days, and
- vehicle occupancy will average 1.8 persons per car.

Based on these assumptions, a total of 92 one-way vehicle trips (i.e., approximately 46 vehicles) would be generated by SDSF on an average nonwinter weekend day.

The direct impact on recreation-related traffic was assessed by comparing projected daily traffic levels for the proposed project or project alternative with those of the no-project alternative. The negligible increase in traffic levels under the proposed project is a result of the small (400 visitor days) increase in annual public use projected for the proposed project.

7-3. Bicycle Traffic

Summary of Comments

- The EIR should disclose how many bicyclists will enter SDSF on bicycles versus in cars. (O8-6)

- Bicycles are legal vehicles; bicycle traffic on San Jose-Soquel Road should be assessed. (19-19, O8-6)

- There is no shoulder on much of Soquel-San Jose Road; it is unsafe for bicycle traffic. (6-1, 19-19, 19-22)

Response

The trip generation analysis in the DEIR includes motorized and nonmotorized (i.e., bicycle) traffic. Although no direct information is available as to the proportion of SDSF users who currently access SDSF on bicylces *versus* in cars, few cyclists are believed to enter via roads because of the

long distance from principal points of origin to SDSF and the relative unsuitability of mountain bikes for highway travel. Under peak conditions, use of SDSF would generate approximately 90 one-way trips per day, only a small share of which would involve highway bicycle travel. SDSF's contribution to bicycle travel on Soquel-San Jose Road would have a negligible impact on public safety.

An estimated 20% of the SDSF users enter from the Forest of Nisene Marks State Park. The proposed new access road to SDSF is not expected to attract a substantial share of the current users of the Forest of Nisene Marks State Park because the new access road would be less convenient for most of these users (i.e., more distant from their principal points of origin) and because the state park is a more popular setting for mountain biking than SDSF. Even if a share of the current state park users were to use the new SDSF entrance instead of the current state park entrance, such a shift in traffic would constitute a negligible increase in the total traffic volume on Soquel-San Jose Road.

7-4. Methodology and Significance Criteria for Noise Impacts

Summary of Comments

- Noise impacts of timber operations should be assessed relative to current noise levels rather than county standards. (14-6, O1-5, O1-6)
- The noise impact assessment should consider the distance that noise can carry in the East Branch canyon. (O5-8)
- The noise impact assessment should consider the inevitability of occasional noise in areas zoned for timber production. (5-10)

Response

The ambient level (30 dBA) identified in the draft EIR is for isolated forest settings (not rural residential areas) when no wind is blowing. In comparison, a person speaking in a normal voice at 15 feet results in a sound level of 50 dBA, and an air conditioning unit at 20 feet results in a sound level of 60 dBA (see Appendix C of the draft EIR, Figure C-1). Existing noise conditions at residences nearby SDSF include occasional disturbance from aircraft, electrical generators, vehicles, chain saws, and other equipment. Therefore, the 30 dBA noise level substantially underestimates existing noise levels at nearby residences so is not used as a baseline in the draft EIR

The county noise standard used in the draft EIR applies to low-density residential developments. The significance criteria used in the draft EIR include changes from existing noise levels, public reaction to a change in noise conditions, and the duration and frequency of project-related noise. Project-related noise levels are compared to current conditions, which include

occasional timber operations and other human disturbances. Because timber operations at SDSF will be limited to a two-month period every two years and to weekdays (excluding holidays) between 7:00 a.m. and 9:00 p.m., and because timber operations have occurred in the past at SDSF and currently occur on surrounding lands, the noise impacts of proposed timber operations would be minor.

Chapter 3. Other Comments and Responses

This chapter presents the comment letters on the draft EIR, a transcription of the August 23, 1995 public hearing on the draft EIR, and responses to individual comments not responded to in the substantive issues discussions in Chapter 2. Each letter and comment have been assigned a number. Responses to comments follow each letter and are numbered corresponding to the comment they reference. For comments discussed in Chapter 2, the applicable section of Chapter 2 is referenced.

PETE WILSON, Governor

Letter 1

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH
1400 TENTH STREET
SACRAMENTO, CA 95814

September 1, 1995

GARY BRITTNER
CALIFORNIA DEPT OF FORESTRY
1416 NINTH STREET
ROOM 1540-47
SACRAMENTO, CA 94814

SEP 15

Subject: GENERAL FOREST MGMT PLAN SOQUEL DEMONSTRATION STATE FOREST SCH #: 94023033

Dear GARY BRITTNER:

The State Clearinghouse has submitted the above named draft Environmental Impact Report (EIR) to selected state agencies for review. The review period is now closed and the comments from the responding agency(ies) is(are) enclosed. On the enclosed Notice of Completion form you will note that the Clearinghouse has checked the agencies that have commented. Please review the Notice of Completion to ensure that your comment package is complete. If the comment package is not in order, please notify the State Clearinghouse immediately. Remember to refer to the project's eight-digit State Clearinghouse number so that we may respond promptly. 1-1

Please note that Section 21104 of the California Public Resources Code required that:

> "a responsible agency or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency."

Commenting agencies are also required by this section to support their comments with specific documentation.

These comments are forwarded for your use in preparing your final EIR. Should you need more information or clarification, we recommend that you contact the commenting agency(ies).

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Antero A. Rivasplata

ANTERO A. RIVASPLATA
Chief, State Clearinghouse

Enclosures
cc: Resources Agency

State of California | The Resources Agency

M E M O R A N D U M

To : Director
State Clearinghouse
Office of Planning and Research
1400 Tenth Street
Sacramento, CA; 95814

Date : 8/30/95

C 9-1-95

From : Office of the Secretary

Subject: Agency Comments

Attached are individual comments of departments, boards, or commissions within The Resources Agency requested by your State Clearinghouse Notice of Completion and Environmental Document Form on the subject item(s). Agencies responding to your request are listed below.

Attachment(s)

Resources Date:	SCH#	Department	Comment
7 22 95	94023033	CONSERVATION	COMMENT
		FISH&GAME	NO RESPONSE
		FORESTRY	NO RESPONSE
		PARKS & REC	NO RESPONSE
		STATE LANDS	NO RESPONSE

State of California

THE RESOURCES AGENCY

MEMORANDUM

To: Project Coordinator
Resources Agency

Date: August 24, 1995

Mr. Jonathan Ra
California Department of Forestry and Fire Protection
1416 Ninth Street, Room 1516-5
Sacramento, California 95814

From: Department of Conservation
Office of Governmental and Environmental Relations

Subject: General Forest Management Plan for Soquel Demonstration State Forest
SCH # 94023033

The Department of Conservation's Division of Mines and Geology (DMG) has reviewed the above referenced report prepared by Jones & Stokes, dated July 1995. DMG's review focused on the geologic issues in Section 3 of the report. DMG suggest that because this General Plan if for a state forest, some additional geological references may be appropriate so that scientists and naturalists performing research in the forest will have ready access to the published geological literature.

1. In 1992, Michael Manson and Julie Sowma-Bawcom of DMG prepared a focused geologic report on Soquel Demonstration State Forest, and it is referenced on page 9-4. DMG suggests that Julie Sowma's earlier 1990 formal publication in California DMG Special Publication 104 on the Loma Prieta Earthquake also be referenced, since it was done (together with Trinda Bedrossian as first author) especially for California Department of Forestry and Fire Protection (CDF) on Soquel Demonstration State Forest. Otherwise, future researchers might not realize that this 8-page chapter from a formal publication 142-page report exists.

2. For clarity, it would be helpful if a general geologic map were provided with the geological text on page 3-3. Fortunately, a concise page-sized illustration for this purpose was prepared by Bedrossian and Bawcom for their article in CDMG Special Publication 104. We have enclosed a cropped version ready for CDF use in this EIR, as well as two copies of the complete text (one for CDF, one for Jones & Stokes).

We appreciate the opportunity to comment on the EIR for the General Forest Management Plan for Soquel Demonstration State Forest. If you have any questions, please contact Senior Engineering Geologist Robert H. Sydnor at (916) 323-4399. If I can be of further assistance, phone me at (916) 445-8733.

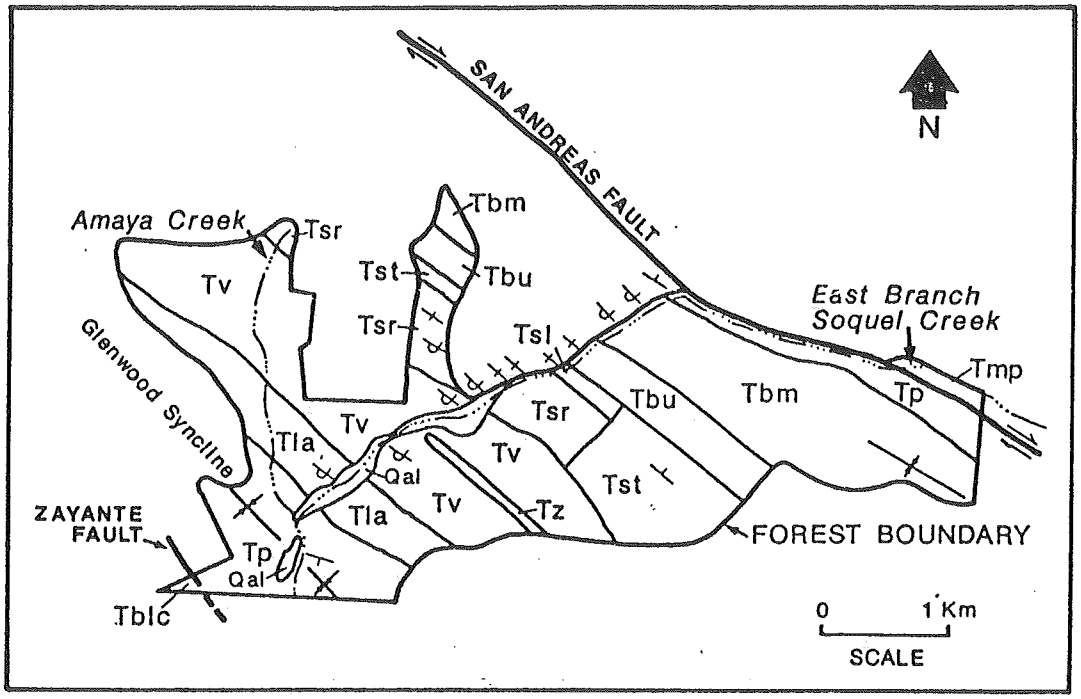
Jason R. Marshall
Acting Assistant Director (FOR)
Office of Governmental and Environmental Relations

Attachments:

cc: Robert H. Sydnor, Division of Mines and Geology
Thomas E. Spittler, California Division of Mines and Geology, Santa Rosa

General Geology of Soquel Demonstration State Forest

(after Brabb, 1989, USGS Map I-1905)



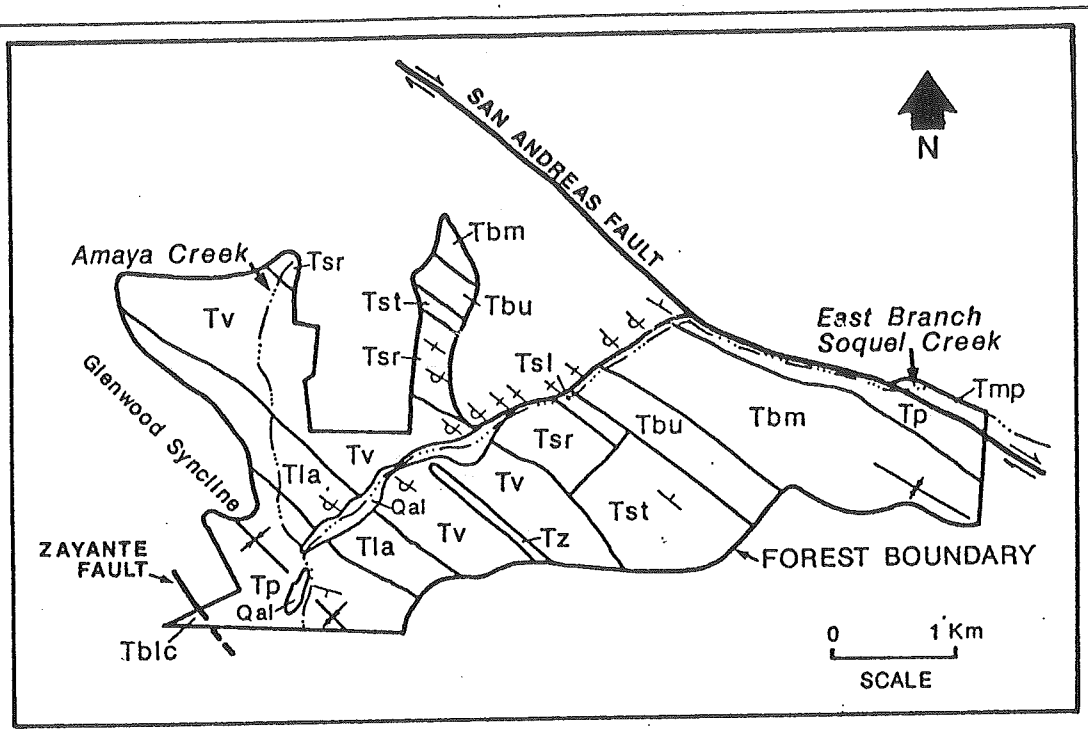
EXPLANATION

Qal	Alluvial deposits
Tp	Purisima Formation
Tla	Lambert Shale
Tv	Vaqueros Sandstone
Tz	Zayante Sandstone
Tsl	San Lorenzo Formation:
Tsr	Rices Mudstone member
Tst	Twobar Shale member
	Butano Sandstone:
Tbu	Upper sandstone member
Tbm	Middle siltstone member
Tblc	Conglomerate
Tmp	Shale of Mount Pajaro area

- Contact
- Fault, dashed where approximate
- Strike and dip of bedding
- Overturned bedding
- Vertical bedding
- Syncline

General Geology of Soquel Demonstration State Forest

(after Brabb, 1989, USGS Map I-1905)



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- Syncline

Notice of Completion

Appendix F

Mail to: State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814 916/445-0613

See NOTE below

SCH # 94023033

Project Title: General Forest Management Plan for Soquel Demonstration State Forest

Lead Agency: California Department of Forestry & Fire Protection — Contact Person: Jonathan Rae

Street Address: 1416 Ninth Street, Room 1516-5 — Phone: 916 / 653-9420

City: Sacramento — Zip: 95814 — County: Sacramento

Project Location

County: Santa Cruz — City/Nearest Community: Soquel

Cross Streets: Soquel-San Jose Road / Olive Springs Road — Total Acres: 2,681

Assessor's Parcel No.: N/A — Section: N/A — Twp.: 10S — Range: 1E — Base: Mt. Diablo

Within 2 Miles: State Hwy #: N/A — Waterways: East Branch Soquel Creek

Airports: N/A — Railways: N/A — Schools: N/A

Document Type

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Doc ☒ Draft EIR ☐ Supplement/Subsequent ☐ EIR (Prior SCH No.) ☐ Other

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other

RECEIVED JUL 19 1995 STATE CLEARING HOUSE

Local Action Type

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan ☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan ☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, Parcel Map, Tract Map, etc.) ☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other State Forest General Plan

Development Type

☐ Residential: Units ____ Acres ____
☐ Office: Sq ft ____ Acres ____ Employees ____
☐ Commercial: Sq ft ____ Acres ____ Employees ____
☐ Industrial: Sq ft ____ Acres ____ Employees ____
☒ Educational: forestry education center
☒ Recreational: campground

☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ Watts ____
☐ Waste Treatment: Type ____
☐ Hazardous Waste: Type ____
☒ Other: forest management

Project Issues Discussed in Document

☒ Aesthetic/Visual ☐ Agricultural Land ☐ Air Quality ☒ Archeological/Historical ☐ Coastal Zone ☐ Drainage/Absorption ☐ Economic/Jobs ☐ Fiscal ☒ Flood Plain/Flooding ☒ Forest Land/Fire Hazard ☒ Geologic/Seismic ☐ Minerals ☒ Noise ☐ Population/Housing Balance ☒ Public Services/Facilities ☒ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☐ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☐ Solid Waste ☐ Toxic/Hazardous ☒ Traffic/Circulation ☒ Vegetation ☒ Water Quality ☐ Water Supply/Groundwater ☒ Wetland/Riparian ☒ Wildlife ☐ Growth Inducing ☒ Landuse ☒ Cumulative Effects ☒ Other fisheries, public safety

Present Land Use/Zoning/General Plan Use

Forestry and open space, timber production zone, general forest

Project Description

Implement programs in timber management; natural resource enhancement; and public use, recreation, and education.

CLEARINGHOUSE CONTACT: Dana Lidster (916) 445-0613

STATE REVIEW BEGAN: 7-19-95

DEPT REV TO AGENCY: 8-25

AGENCY REV TO SCH: 8-30

SCH COMPLIANCE: 9-1

CMT SNT
__ X Resources
__ __ Boating
__ __ Coastal Comm
__ __ Coastal Consv
__ __ Colorado Rvr Bd
__ X Conservation
__ X Fish & Game 3
__ X Forestry
__ X Parks & Rec/OHP
__ __ Reclamation
__ __ BCDC
__ X DWR

Bus Transp Hous
__ __ Aeronautics
__ __ CHP
__ X Caltrans # 5
__ __ Trans Planning
__ __ Housing & Devel
__ __ Health & Welfare
__ __ Drinking H2O
__ __ Medical Waste

CMT SNT
State/Consumer Svcs
__ __ General Services
__ __ OLA (Schools)
Cal/EPA
__ __ ARB
__ __ CA Waste Mgmt Bd
__ __ SWRCB:--Grants
__ __ SWRCB:--Delta
__ X SWRCB:--Wtr Quality
__ __ SWRCB:--Wtr Rights
__ X Reg. WQCB # 3
__ __ DTSC/CTC
Yth/Adlt Corrections
__ __ Corrections
Independent Comm
__ __ Energy Comm
__ __ NAHC
__ __ PUC
__ __ Santa Mn Mtns
__ X State Lands Comm
__ __ Tahoe Rgl Plan
__ __ Other:

PLEASE NOTE SCH NUMBER ON ALL COMMENTS

PLEASE FORWARD LATE COMMENTS DIRECTLY TO THE LEAD AGENCY ONLY

AMD/APCD: 20 (Resources: 7/22

Notice of Completion

Appendix F

See NOTE below

SCH # 94023033

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Airports: N/A — Railways: N/A — Schools: N/A

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Implement programs in timber management; natural resource enhancement; and public use, recreation, and education.

CLEARINGHOUSE CONTACT: Dana Lidster
(916) 445-0613

STATE REVIEW BEGAN: 7-19-95
REPT REV TO AGENCY: 8-25
AGENCY REV TO SCH: 8-30
SCH COMPLIANCE: 9-1

PLEASE NOTE SCH NUMBER ON ALL COMMENTS

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AQMD/APCD: 20 (Resources: 7/22)

CNT	SNT	
	X	Resources
		Boating
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		Coastal Conev
		Colorado Rvr Bd
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	X	Fish & Game 3
	X	Forestry
	X	Parks & Rec/OHP
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		Tahoe Rgl Plan
		Other:

Response to Comment 1-1. The letter (a notice of completion for the draft EIR) indicates that the review period for state agencies is closed and that one comment letter was received. It acknowledges that CDF has complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to CEQA.

State of California

Letter 2

The Resources Agency

Memorandum

To : Mr. Jonathan Rae
California Department of Forestry
and Fire Protection
1416 Ninth Street, Room 1516-5
Sacramento, California 95814

Date: September 8, 1995

From : Department of Fish and Game

Subject : Draft Environmental Impact Report (DEIR) Soquel Demonstration State Forest Management Plan; SCH 94023033, Santa Cruz County

Department of Fish and Game personnel have reviewed the DEIR for the above-mentioned project. We offer the following comments for your consideration.

Soquel Creek, as stated in the DEIR, is very important habitat for steelhead trout rearing and spawning. Soquel Creek was also once important habitat for coho salmon. The coho is proposed to be formally listed by the State as endangered. Both species may be listed as endangered under the Federal Endangered Species Act. Alternative 2, versus the preferred project, may be the only way to ensure the continued existence of these species. Alternative 2 is also preferable in that it provides a greater level of protection to riparian habitat. Cumulative impacts to the steelhead, and other species of concern, have yet to be adequately addressed. At the very least, the impacts of the different buffer zones established with the preferred alternative and with alternative 2 must be documented and monitored. Most important is to monitor and compare both short- and long-term impacts of sediment entering the creek in the preferred alternative site versus the alternative 2 site. The buffer zones proposed for alternative 2 are similar to the minimum protective buffers required on Federal lands in Mendocino, Klamath, Shasta/Trinity, and the Six Rivers National Forests, and on existing coho streams in northern California. 2-1

Pool habitat is essential to the survival of the steelhead population. It is necessary that the stream enhancements be properly designed and placed in the stream. A fluvial geomorphologist should be consulted to insure the long-term viability of the enhancement projects. 1-2

The Department looks forward to working with the California Department of Forestry at an intricate level of detail to protect these valuable fish and wildlife resources. Let this be a true demonstration project for forestry practices in Santa Cruz County.

Thank you for the opportunity to review and comment on this project. If you have any questions regarding our comments, please contact Patricia Anderson, Fisheries Biologist, at (408) 724-7130.

Ken Aasen

Ken Aasen
Acting Regional Manager
Region 3

Response to Comment 2-1. Class II watercourses are defined as watercourses that do not support fish but do provide habitat for nonfish aquatic life, and for which fish are found within 1,000 feet downstream of the specified watercourse. Class II watercourses are of ecological concern primarily because they are channels through which water and sediment are transported to fish-bearing streams. Controlling sediment discharges to and water temperatures in Class II watercourses are the basis for the WLPZs required for Class II watercourses by the Rules. Under Alternative 2, late-succession management areas (which would impose more stringent restrictions on timber operations than the WLPZs required by the Rules) are proposed for Class II watercourses. Comment 2-1 in effect requests that late-succession management areas be established for Class II watercourses under the proposed project or, at a minimum, monitoring be implemented to determine whether such late-succession management areas would reduce aquatic-habitat impacts more than the required WLPZs.

Late-succession management areas would not be established adjacent to Class II watercourses under the proposed project because of the large number of Class II watercourses at SDSF and the extent of land on which timber harvesting would be affected; the ecological benefits resulting from reduced disturbance of streamside zones would not offset the costs resulting from reduced timber harvesting.

Monitoring of the aquatic-habitat impacts of timber operations on lands tributary to Class II watercourses will focus on hillslope monitoring to assess erosion and sedimentation associated with harvest areas, roads, skid trails, and landings and on instream monitoring of Class I watercourses downstream from their confluences with Class II watercourses.

Cumulative impacts on steelhead trout and other species of concern are unlikely to occur at the project level because no significant increase in discharge of sediment to the streams is expected to result from proposed timber operations.

Response to Comment 2-2. The EIR has been revised to require that instream habitat enhancement projects would be designed in consultation with a qualified hydrologist and that CDF would obtain all of the necessary permits and agreements in addition to submitting all plans and designs to DFG for approval prior to installation of any structures.

State of California

Letter 3

The Resources Agency

Memorandum

To: Jonathan Rea
Department of Forestry and
Fire Protection
1416 Ninth Street
Sacramento, CA 95814

Date: September 5, 1995
R 3

Telephone: ATSS (916) 453-9455
(916) 653-9455

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SEP 05 1995
BY:

From: Department of Forestry and Fire Protection

Subject: Soquel Demonstration State Forest

The following are comments on the Draft EIR for Soquel Demonstration State Forest.

2-4 Are the 300-foot late successional management areas on both sides of the stream making them 600-feet wide? 3-1

2-4 When it is stated that all woody riparian vegetation will be retained does this also mean redwoods? Redwood has been classified as riparian vegetation. 3-2

2-5 The discussion on harvest and growth levels will have to be enhanced with specific data to comply with the Forest Practice regulations i.e., 913.11. The Forest Practice regulations contain specific requirements with regard to documentation of methods and demonstrating the sustainability of proposed harvest levels over a 100-year planning interval. Such data would be subject to review as to how it was obtained, used and its accuracy. 3-3

2-9 The inventory of culverts, roads and sediment is an important part of analyzing cumulative effects. This information should be available in this document or at least in any management plan. It appears that the December 1997 completion date should be moved up. 3-4

General Comments

The EIR states that as a minimum, forest management at SDSF will comply with all natural resource protection standards specified in the California Forest Practice Act. 3-5

The Department's Forest Practice Enforcement Section would expect that future THPs will demonstrate how SDSF is planning to comply with those regulations, or refer to the EIR to show compliance with certain individual regulations. 3-5 (cont)

Ross Johnson

Ross Johnson, Chief
Forest Practice Regulations

bp

Response to Comment 3-1. Late succession management areas will be 300 feet wide on each side of the stream, resulting in a 600-foot wide buffer.

Response to Comment 3-2. Riparian vegetation is considered to include any tree with a portion of its crown extending over the stream; it includes redwoods.

Response to Comment 3-3. Refer to Substantive Issue 4-3, "Achieving Maximum Sustained Production".

Response to Comment 3-4. Although information on culvert and road conditions is important to future timber harvesting planning, such site-specific information was not needed to assess watershed impacts in the program EIR. Moving up the deadline for completing the culvert and road inventories from December 30, 1997, as specified in the draft EIR, will be infeasible because of limited staff availability. Information on unstable sediment deposits will be prioritized to ensure that each subbasin is inventoried before timber operations occur there. Refer to Substantive Issue 3-4, "Ongoing Performance Monitoring Program" and Appendix A, "Draft Mitigation Monitoring Program" to this document.

Response to Comment 3-5. Compliance with the Rules' natural resource protection standards will be documented during timber harvest planning. Refer to SDSF Timber Harvest Plan Checklist (Appendix B).

Letter 4

State of California THE RESOURCES AGENCY

MEMORANDUM

To: Project Coordinator
Resources Agency

Mr. Jonathan Ra
California Department of Forestry and Fire Protection
1416 Ninth Street, Room 1516-5
Sacramento, California 95814

Date: August 24, 1995

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BY: _____

From: Department of Conservation
Office of Governmental and Environmental Relations

Subject: General Forest Management Plan for Soquel Demonstration State Forest
SCH # 94023033

The Department of Conservation's Division of Mines and Geology (DMG) has reviewed the above referenced report prepared by Jones & Stokes, dated July 1995. DMG's review focused on the geologic issues in Section 3 of the report. DMG suggest that because this General Plan if for a state forest, some additional geological references may be appropriate so that scientists and naturalists performing research in the forest will have ready access to the published geological literature.

1. In 1992, Michael Manson and Julie Sowma-Bawcom of DMG prepared a focused geologic report on Soquel Demonstration State Forest, and it is referenced on page 9-4. DMG suggests that Julie Sowma's earlier 1990 formal publication in California DMG Special Publication 104 on the Loma Prieta Earthquake also be referenced, since it was done (together with Trinda Bedrossian as first author) especially for California Department of Forestry and Fire Protection (CDF) on Soquel Demonstration State Forest. Otherwise, future researchers might not realize that this 8-page chapter from a formal publication 142-page report exists. 4-1

2. For clarity, it would be helpful if a general geologic map were provided with the geological text on page 3-3. Fortunately, a concise page-sized illustration for this purpose was prepared by Bedrossian and Bawcom for their article in CDMG Special Publication 104. We have enclosed a cropped version ready for CDF use in this EIR, as well as two copies of the complete text (one for CDF, one for Jones & Stokes).

We appreciate the opportunity to comment on the EIR for the General Forest Management Plan for Soquel Demonstration State Forest. If you have any questions, please contact Senior Engineering Geologist Robert H. Sydnor at (916) 323-4399. If I can be of further assistance, phone me at (916) 445-8733.

Jason R. Marshall
Acting Assistant Director (For)
Office of Governmental and Environmental Relations

Attachments:

cc: Robert H. Sydnor, Division of Mines and Geology
Thomas E. Spittler, California Division of Mines and Geology, Santa Rosa

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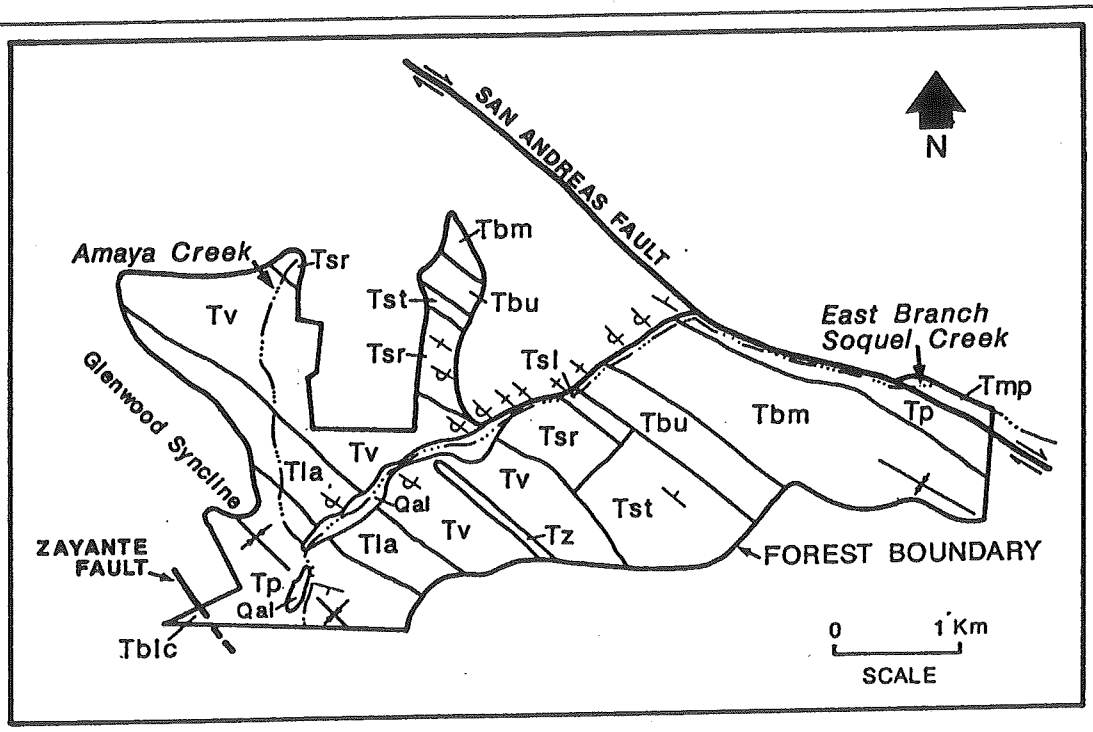
General Geology of Soquel Demonstration State Forest

(after Brabb, 1989, USGS Map I-1905)



EXPLANATION

- Qal Alluvial deposits
- Tp Purisima Formation
- Tla Lambert Shale
- Tv Vaqueros Sandstone
- Tz Zayante Sandstone
- Tsl San Lorenzo Formation:
  - Tsr Rices Mudstone member
  - Tst Twobar Shale member
  - Butano Sandstone:
  - Tbu Upper sandstone member
  - Tbm Middle siltstone member
- Tblc Conglomerate
- Tmp Shale of Mount Pajaro area

- Contact
- Fault, dashed where approximate
- Strike and dip of bedding
- Overturned bedding
- Vertical bedding
- Syncline

Response to Comments from California Department of Conservation, Division of Mines and Geology 4

Response to Comment 4-1. Chapter 2 (Proposed Project and Alternatives) and Chapter 9 (Citations) of the draft EIR have been revised to include reference to Bedrossian and Sowma's 1990 report. A general geology map has been added to the final EIR (see previous page).

Letter 5

Author: LEN THEISS at RCC-ADM
Date: 08/24/95 05:25 PM
Priority: Normal
TO: JON REA at SAC_RES_MGMT
TO: SOQUEL STATE FOREST at SAN_MATEO_SC_RU
Subject: DRAFT EIR SDSF

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---------- Message Contents ----------

Jon, I can't say that I have read in detail the Draft EIR, but I did skim it, and I have some suggestions for modification.

Page 1-2:

Under the heading of Timber Harvesting Planning, the first sentence states that timber harvesting plans will be processed under the functional equivalent process. There should be some indication that if the Board adopts new regulations, which would allow processing under this environmental document, then the functional equivalent procedure would not be utilized. 5-1

Page 1-3:

At the top of the page it is stated that an engineering geologist will certify location of skid trails. I don't believe we intend to do this except on known unstable areas. 5-2

Page 2-8, Second Paragraph:

The same comment as to the need for a licensed engineering geologist to examine the locations of all skid trails is not being proposed. We do not know in advance of actual operations the location of each and every skid trail. Nor, is it necessary to locate all skid trails. 5-3

Page 7-4, Table 7-2:

At the Public Hearing, it was brought out, "How did the author arrive at the figures given for projected land use under various alternatives?" I also have the same question. There is plenty of room on this page to state how they arrived at these numbers. 5-4

Page 8-2, Paragraph 3:

It should be pointed out that the Olive Springs Road, which extends into the forest, is used only for administrative purposes. Reading this paragraph, the public might interpret it to mean they have access to the forest, via Olive Springs Road. This particular road is utilized for administrative purposes and log operations. 5-5

Page 8-15, Paragraph 2: 5-6

Under Proposed Project, the figures should be rerun as to the capacity of log trucks, I believe that about five thousand board feet is average in the redwood region, not four thousand. 5-6 (cont.)

I only made a few notes at the Soquel Hearing. The major points that need to be considered from my standpoint are:

1. There appears to be some discrepancy between the four goals that are mentioned in the legislation and the goals stated in the EIR. I haven't researched this, but as a minimum, the legislative goals should be included in the Draft EIR. 5-7

2. Steve Singer said that the Draft EIR tells us that logging roads and skid trails return to their normal background erosion rates after five years. I don't believe that a five year return to background levels is an accurate figure. It depends upon the type of erosion you are talking about. Mass wasting may occur for decades after construction of the logging road or skid trail. Real and surface erosion may return to background levels after five years, if waterbars and culverts are adequately maintained. 5-8

3. I don't know who the speaker was, but she made reference to Page 5-4 and 5-5, and called attention to the fact that Late Successional Stage is given as twenty-four inch and greater DBH trees. I don't know where this definition came from, but I question the validity. 5-9

4. To help Nick answer the issues concerning noise pollution, I think he should respond by stating that the land is zoned TPZ, as are surrounding areas, and that while timber management noises are relatively loud, they are not continual year in and year out. When you live in a wildland area, this is one of the infrequent detriments to living in such an area. 5-10

Response to Comment 5-1. If the Board adopted a rule authorizing a new type of timber harvest plan (THP) that tiers to program EIRs for forest management, environmental compliance could be achieved for subsequent timber operations at SDSF under either CEQA or the functional-equivalent THP process. For example, if site-specific analysis indicated that significant impacts could result from proposed harvesting, CDF could elect to prepare a standard THP to achieve environmental compliance. In either case, a THP would be prepared for timber operations that meets the requirements of the Forest Practice Act and the Rules.

Response to Comment 5-2. It was stated in the draft EIR (pages 1-3, 2-5, and 2-8) that all locations for new roads, landings, and skid trails would be certified by a registered engineering geologist as part of timber harvesting planning. These statements are revised in the final EIR to require certification of locations of all roads and landings and of skid trails on unstable soils, slide areas, and areas where the Rules require that skid trails be designated before the start of timber operations. The Rules require predesignation (i.e., flagging) of skid trails on any slopes exceeding 65% and on areas having average slopes exceeding 50% where the erosion hazard rating is high or extreme [14 CCR 914.2 (f)].

Certification of skid trail locations other than on unstable soils, slide areas, and areas requiring predesignation is unwarranted because the timber operator needs to exercise judgment regarding skid trail alignments to avoid damaging standing trees. The timber operator needs to consider the position of trees after they have been felled to determine the best skid trail alignments; optimal skid trail alignments generally cannot be identified before the trees are felled. (Spittler pers. comm.)

Response to Comment 5-3. Refer to response to comment 5-2 above.

Response to Comment 5-4. Refer to Substantive Issue 6-1, " Public Use Projections".

Response to Comment 5-5. As indicated by the comment, Olive Springs road is closed to public use north of the quarry and does not provide public access to SDSF.

Response to Comment 5-6. Although the capacity of a log truck in the redwood region is approximately 5 MBF, truck loads average 4-5 MBF. Assuming an average load size of 4 MBF is a conservative assumption for the traffic analysis in that it results in an overestimate of the number of trips.

Response to Comment 5-7. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives"

Response to Comment 5-8. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment 5-9. The Rules define late succession forest stands as stands with dominant and predominant trees that meet the criteria of Wildlife Habitat Relationships (WHR) tree classes 5M, 5D, or 6; are at least 20 acres in size; and include large decadent trees, snags, and large down logs. WHR tree size class 5 includes trees with diameter at breast height (dbh) exceeding 24 inches. Canopy closure classes M and D are defined as moderate and dense, respectively. WHR class 6 includes multistoried stands with size-class 5 trees over size-class 4 (dbh = 11-24 inches) or 3 (dbh = 6-11 inches) trees. (Mayer and Laudenslayer 1988.)

Response to Comment 5-10. Refer to Substantive Issue 7-4, "Methodology and Significance Criteria for Noise Impacts".

Letter 6

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Date: September 5, 1995

To: John Rea, Resource Management, CDF

From: Jan Beautz, First District Supervisor

Phone: (408) 454-2200 ATSS 564-2200

Total Number of Pages (including transmittal page): 3

Comments: Letter to T. Sutfin regarding comments on the Environmental Impact Reprot for the Soquel Demonstration Forest.

Should you have any technical problems relative to this facsimile transmission, please call the person sending this FAX at the above number for assistance.

03982A6

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September 5, 1995

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SEP 05 1995
BY: _____

Thom Sutfin
California Department of Forestry
and Fire Protection
Soquel Demonstration State Forest
4750 Old San Jose Road
Soquel, CA 95073

Dear Mr. Sutfin:

I would like to make the following comments on the Environmental Impact Report for the Soquel Demonstration State Forest.

Access to the forest is a major issue today, even before large scale logging and recreation have begun. Highland Way, the only direct vehicular entry for the public to the eastern portion of the park, is closed for long periods of time. The report does mention the need for general access to the forest but does not seem to give significant consideration to projected traffic. I have already had complaints about traffic on private roads, specifically Comstock Mill Road. The impact of the vehicles described does not seem to match the numbers of visitors projected. There is no analysis of bike traffic or how areas which in reality are accessible--while not official access areas--will be controlled. This section needs to be expanded. 6-1

It seems to be assumed that the there will be little or no impact on erosion from the proposed project. It appears that harvesting will be allowed on slopes greater than 50% and within 300 feet of Amaya Creek. It is difficult to believe that harvesting and log removal will not result in measurable erosion and impacts on the watershed. Either levels of harvesting should be reduced or impacts identified. 6-2

Finally, I would like to say that Soquel Demonstration Forest is a unique facility with a unique mission. I feel that it is essential that every proposal be compared to the original legislation to see if the two are consistent. A significant issue regarding the level of harvesting is the question of where the proceeds go from the sale of timber. The original legislation seems clear that the revenue generated by the forest is to be used for operation of Soquel Demonstration Forest only and thus only that amount 6-3

of harvesting would be necessary. Because a siphoning off of that revenue to other funds or agencies is certain to result in a much higher level of harvesting and therefore considerably more impacts, I feel this question needs to be resolved at the earliest possible time. It would appear that the higher levels of timber production proposed in this EIR are actually to create extra revenues and thus are in violation of the original legislation, as interpreted to me by the author of that legislation. 6-3 [cont.]

Sincerely,

JANET K. BEAUTZ, Supervisor
First District

JKB:ted

00171L1

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Response to Comment 6-1. The current and historically frequent closure of Highland Way by landslides is considered as part of the environmental setting and is described on page 8-2 of the draft EIR.

Regarding the methodology used for projecting traffic levels and bicycle traffic effects, refer to Substantive Issues 7-2, "Methodology for Projecting Traffic Levels", and 7-3, "Bicycle Traffic".

Response to Comment 6-2. Refer to Substantive Issues 3-1, "Methodology for Estimating Erosion and Sedimentation Rates" and 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment 6-3. Refer to Substantive Issue 1-1, "Timber Revenues and Operational Costs".

Letter 7

PLANNING DEPARTMENT

GOVERNMENTAL CENTER

COUNTY OF SANTA CRUZ

701 OCEAN STREET SANTA CRUZ, CALIFORNIA 95060
(408) 454-2580 FAX (408) 454-2131 TDD (408) 454-2123

4 August 1995

Jon Rea
California Department of Forestry & Fire Protection
1416 Ninth Street
Sacramento, CA 95814

Re: Comments on Draft EIR, Soquel Demonstration State Forest

Dear Mr. Rea:

Thank you for forwarding the DEIR for review. County staff have reviewed the document and the following constitute the comments form the County of Santa Cruz. Where a subject has been referenced, no attempt has been made to include all the locations within the DEIR where the subject occurs. Usually, the reference noted is the first time the subject appears in the DEIR.

1. ES-1: a. Are all the objectives intended to have equal weight? 7-1
   b. There is concern over the definition of sustained yield as the phrase is not clearly defined. If, in the future, demonstration of sustained yield becomes of paramount importance, and that definition is different than it appears here, almost every assumption of this analysis could become invalid. The EIR should state how the current GFMP demonstrates sustained yield and what the parameters are for that goal. Further, if these parameters change, will further CEQA review be required and, if so, what amount of change in the definition of sustained yield will trigger the review and at what level? 7-2

2. ES-2: a. What criteria were used to determine the cutting rate? Are those criteria subject to change and, if so, what subsequent environmental review will be required? 7-3
   b. At various places throughout the DEIR it is stated that work will be performed in compliance with the California Forest Practice Rules. It seems to be inferred that if work is performed in compliance with these rules, environmental impacts will not occur. Have the potential impacts of harvests conducted under the Forest Practice Rules been examined to verify that impacts indeed will not occur, or has this been assumed since the timber harvest review process has been certified as a 'functional equivalent' of CEQA? The road construction criteria on page 3-20 are a good example. 7-4

3. ES-3: a. What criteria were used to define late-succession habitat? 7-5

4. ES-11: a. Regarding the mitigation of "...adjust services to meet changes in demand", under <u>Increased cumulative demand for police and</u> 7-6

emergency services, specifically how will services be adjusted given the severe lack of law enforcement personnel in the Santa Cruz area. What effect would this have on day to day forest operations and how might that change impacts? 7-6 [cont.]

5. ES-12: a. Under Change in offsite views....., Alternative 3, a mitigation states that clear cut sizes should be minimized. To what does this refer? Clear cuts are already pretty minimal under Santa Cruz County rules. 7-7

6. 1-2: a. 2nd para. Please clarify what type of discretionary permits are being referred to in the first sentence. CDF doesn't really have an internal discretionary process and operations on the forest are probably exempt from review by other jurisdictions. 7-8
   b. Last para. Please clarify what this means.

7. 1-3: a. 1st para. Is it intended that the objective of minimizing soil erosion is to be the primary consideration and weighted above all others? 7-9

8. 2-4: a. Figure 2-3 does not show late-succession management areas, nor does it contain referenced streams. 7-10

9. 2-5: a. What is the source of the criteria used to identify the old-growth characteristics? 7-11
   b. Does restricting tractor use to pre-designated trails refer only to yarding operations or to all tractor use? 7-12
   c. Isn't the .5 acre clearing referred to only possible under an alternative practice approval rather than as a normal allowance? 7-13

10. 2-6: a. What is the source of the 5 acre clearcut allowance noted under Timber Management, Alternative 3? 7-14

11. 2-8: a. 2nd complete para. The use of existing skid trails simply because they are already there may not always be wise. Many existing skid trails should never have been established and would be better put to bed rather than re-used. We would recommend changing this to existing skid trails that have been demonstrated to be stable and non-erosive. 7-15

12. 2-9: a. 2nd para. Culvert, road and trail maintenance will be more regular, especially in the long term, than on most timber harvests. In the spirit of SDSF's function as a demonstration and experimental forest, we suggest that keeping records of how often repairs and maintenance and repairs take place will provide valuable information regarding the efficacy of various designs on timber harvests outside the confines of SDSF. 7-16
   b. 3rd para. Even soils not generally considered highly erosive will experience sever erosion over time if subjected to substantial run-off. 7-17
   c. 5th para. Suggest substituting the phrase sediment sources for landslides in last sentence. 7-18

13. 2-10: a. 1st complete para. How will improving drainage at the toe of a landslide increase it's stability? 7-19

14. 2-12: a. What subsequent form of CEQA review is the recreation master plan to undergo, if any? 7-20

b. Last para. Is the current Badger Springs site intended to be one of the campsites? 7-21

c. Last para. What is the current status of the easement for the secondary access road? If it unlikely that this easement can be obtained, what effect will this have on the related elements of the EIR? 7-22

15. 2-13: a. Bridges for public use should be designed by a qualified civil engineer to Cal-trans or County specs rather than to Forest-Practice standards. 7-23

16. 2-14: a. We strongly recommend the adoption of the Alternative 2 criteria for the Amaya Creek drainage. Not only would this give greater protection to the drainage, but it would provide a ready made comparison with the proposed project on the rest of the forest. Over time, the results of the monitoring of the two methods could provide extremely valuable data. 7-24

17. 2-15: a. Under Alternative 3, a figure of 2.6% of the conifer inventory is proposed for harvesting. How was this figure decided upon and how does it relate to the maximum cut allowable under current the Forest Practice Rules? 7-25

18. 3-8: a. 1st para. Is this discussion assuming that the amount of money predicted from harvesting operations is for financing forest operations and furthering the goals for which the forest was founded? Would it be correct to assume that the level of cut to provide this amount of money is based solely on a review of log prices over the last decade? Given that the level of cut could substantially effect the conclusions of the DEIR, please verify that this is an accepted form of economic analysis. 7-26

19. 3-9: a. 2nd para. If they exist, please provide comparisons for the figures provided, i.e. how does this compare to a pristine area or similar areas elsewhere? 7-27

20. 3-10:a. In the last complete paragraph it is stated that in June 1984 the SWRCB conditionally certified the California Practice Rules as BMPs. What were the conditions and what bearing, if any, do they have on SDSF and this analysis? 7-28

21. 3-12:a. Top of page. The DEIR should not assume participation by SWRCB staff as providing adequate monitoring of SWRCB regulations or mitigation of any impacts, as the SWRCB does not have the staff to attend timber harvests in Santa Cruz County on anything approaching a regular basis. 7-29

b. Specific Impacts (center section). It should be acknowledged that disturbance of the duff layer and in-situ soils can cause significant erosion or exacerbate other conditions. It is for this reason, it is important to minimize tractor operation areas (see comment 9b, above). 7-30

22. 3-14:a. Please verify one of the figures used. Is it correct that 1,900 cubic yards of earth erode off of each mile of SDSF roads and 7-31

each acre of the forest (averaged, we assume) every five years or should this be the total for the entire forest? 7-31 [cont.]

23. 3-16,17: A. While we agree that high erosion rates are normal in this watershed and that normal rates of soil erosion do not, in themselves, constitute a significant impact, this reasoning breaks down if the system in question is not in equilibrium. In the Soquel watershed, a variety of events have led to a system that is unnaturally out of equilibrium with an admittedly high natural sediment input. Under current conditions, the watershed is certainly experiencing significant impacts over and above those that can reasonably be considered natural. Under these circumstances, any additional impact (i.e. sediment load), above that for the no-project alternative, should be considered significant under CEQA. This section should be rewritten to reflect this. 7-32

24. 3-29:a. How was it determined that removing existing riparian vegetation (presumably deciduous and herbaceous) and replacing it with conifers is "enhancing the riparian function"? Is this based solely on the desire to provide adequate recruitment for large, woody debris in streams? Is there information that suggests there is a shortage of this material in the watershed? How was it determined that this function is more valuable than those provided by the species which would be removed? 7-33

25. 3-30:a. Top of page. Why is the sediment load increase greater than for the proposed project? Less remediation because of less cutting? 7-34

26. 4-1: a. The status of Coho salmon has changed since the DEIR was written. 7-35

27. 5-20:a. Pond turtles are known to travel considerable distances from ponds and streams to lay eggs. More time should be spent on this analysis to verify that impacts to turtle populations will not occur. 7-36

28. 5-21:a. 1st para. Please provide more information as to why the principal expected impact on riparian vegetation will be from the limited public use of the forest rather than from harvesting operations and "enhancement of riparian function". 7-37

b. Under Criteria for Determining Significant Impacts , why is a reduction in SDSF's future capacity to produce forest products considered an impact under CEQA? 7-38

29. 5-27:a. 1st para. If there are circumstances where selective harvesting, as will be practiced at SDSF, will be incompatible with maintaining current wildlife populations in the forest, the EIR should identify those circumstances and propose mitigations. 7-39

30. 5-30:a. Under: Impact: Disturbance to Wildlife Populations... It should be acknowledged that siting of campgrounds can cause significant impacts on wildlife. This should be listed as a potentially significant impact and mitigations proposed. 7-40

31. 6-15:a. Under: Impact: Conflicts with Adjacent Land Uses. , it appears possible that an increase in visitors to the forest will result in an increase in the number of complaints. Please clarify how it was 7-41

determined that complaints will not again rise as visitor use continues to increase. 7-41 [cont.]

32. 8-16:a. Please clarify the mitigation at the bottom of the page. It is not clear whether it has been determined if this is physically possible to accomplish. 7-42

33. 8-23ff:a. Please verify the figures used for the helicopter logging. Is it correct that a large twin rotor helicopter at 500' slant distant (what's that?) produces the same amount of noise as three chain saws at 50'? Additionally, how much value will topographic shielding be for nearby residences? Finally, how much noise is generated by the helicopter when hovering or gaining or losing altitude? Is level flight the highest expected noise level? 7-43

34. 8-28:a. Under the mitigation for impacts from helicopter, we would recommend to add language specifying that the flight path of helicopters engaged in operations will not approach within .5 miles of residences. 7-44

Thank you for the opportunity to comment on this DEIR. If you have any questions, please feel free to contact me at (408)454-3097 (CALNET/ATSS 564-3097).

Sincerely,

Dave Johnston
Resource Planner III

Response to Comment 7-1. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives".

Response to Comment 7-2. Reductions in the long term sustained yield (LTSY) at SDSF or the capability of SDSF to achieve maximum sustained production (MSP) of high-quality timber products could, if large enough, result in a direct adverse effect on employment and income attributable to SDSF or an indirect adverse effect on employment and income in the regional forest products industry. Such socioeconomic effects are generally not considered significant environmental impacts under CEQA. Consequently, potential future changes in the Rules pursuant to the California Forest Practice Act regarding the need to achieve MSP of high-quality timber products per se would not require additional review of proposed activities at SDSF under CEQA. Substantial reductions in LTSY would probably be the result of changes in forest structure such as declining average age, size, and density of trees, however which could indicate adverse impacts on wildlife, vegetation, watershed condition, or aesthetics. Such environmental impacts could require additional analysis under CEQA.

Refer to Substantive Issue 4-3, "Achieving Maximum Sustained Production".

Response to Comment 7-3. Harvesting rates were developed for the proposed project by the SDSF forest manager and the Advisory Committee to meet multiple objectives including achieving a balance of forest-wide harvest and growth, rapid development of late-succession habitat in late-succession management areas, and protection of watershed and wildlife resources. Harvesting rates for Alternatives 2 and 3 were developed in part to ensure that the EIR addressed a full range of feasible harvesting levels. Criteria for determining harvesting rate, and thus the rate itself, could change in the future. If such changes could result in significant environmental impacts not assessed in the EIR, additional CEQA analysis could be required.

Response to Comment 7-4. Refer to Substantive Issues 1-3, "Adequacy of the Rules to Avoid Significant Environmental Impacts" and 3-3, " Project-Level Erosion and Sediment Control".

Response to Comment 7-5. Refer to response to comment 5-9 above.

Response to Comment 7-6. CDF recognizes the shortage of law enforcement personnel in the Santa Cruz area. The mitigation measure recommended in the EIR applies to SDSF patrols that will be performed by CDF staff and supported by local law enforcement. As part of this mitigation, SDSF will monitor the need for law enforcement and emergency services based on the frequency and severity of violations and emergency situations. If the demand for public safety services increases substantially, SDSF will respond by increasing SDSF staffing, implementing cooperative

agreements with county agencies to obtain additional services, or implementing restrictions to reduce or control public use.

Response to Comment 7-7. Clearcuts of up to 5 acres proposed under Alternative 3 would not comply with the Rules; they would require designating SDSF as an "experimental forest" pursuant to the California Forest Practice Act.

Response to Comment 7-8. The language on draft EIR page 1-2, second paragraph has been revised to remove reference to discretionary permits. The last paragraph on page 1-2 describes a general process for subsequent evaluation of project-level timber operations within late-succession habitat. Refer to the Timber Harvesting Plan Checklist in Appendix B of this document.

Response to Comment 7-9. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives".

Response to Comment 7-10. Late succession management areas include land within 300 feet of the East Branch, Amaya Creek, and Fern Gulch. All streams in the watershed assessment area referenced in the draft EIR are depicted on Figure 2-2.

Response to Comment 7-11. Old growth tree characteristics are described in Table 4 (page 52) of the GFMP.

Response to Comment 7-12. See response to comment 5-2 above. This restriction applies only to use of tractors to skid logs. Limited tractors use may occur in SDSF for other purposes, such as road clearing (where predesignation of trails is superfluous) or campground construction (where predesignation is infeasible).

Response to Comment 7-13. Removal of trees in groups up to 0.5 acre is allowable as an alternative regeneration method [14 CCR 913.8 (b) (2)]. As an alternative practice, its use must be approved by the director of CDF based on demonstration that it would provide overall resource protection at least equal to that provided by the standard practice, and that the standard practice is silviculturally infeasible or inappropriate. For example, use of the group selection system could be needed to provide sufficient sunlight to ensure adequate regeneration and growth of redwood sprouts.

Response to Comment 7-14. See response to comment 7-7 above.

Response to Comment 7-15. See Substantive Issue 3-3, "Project-Level Erosion and Sediment Control".

Response to Comment 7-16. Culvert, road, and trail maintenance will be documented as part of the Mitigation Monitoring Program. Refer to Substantive Issue 3-4, "Ongoing Performance

Monitoring Program" and the "Mitigation Monitoring Program" for SDSF (Appendix A to this document).

Response to Comment 7-17. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment 7-18. The inventory of erosion-prone areas to be completed by June 30, 1998, will include major sediment stores as well as landslides.

Response to Comment 7-19. Refer to Substantive Issue 3-3, "Project-Level Erosion and Sediment Control".

Response to Comment 7-20. Refer to Substantive Issue 2-1, "CEQA Review of SDSF Recreation Master Plan".

Response to Comment 7-21. Although Badger Springs is not considered a potential site for the proposed rustic campground, potential sites are located near this picnic area. Details regarding the location and design of the campground will be provided in the forthcoming recreation master plan.

Response to Comment 7-22. Refer to Substantive Issue 7-1, "Location of the New Access Road Is Speculative".

Response to Comment 7-23. The bridges to be constructed along the new access road will meet Caltrans specifications.

Response to Comment 7-24. Refer to Substantive Issue 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment 7-25. The harvesting rate proposed for Alternative 3 was based on the objective of maximizing timber production at SDSF subject to avoiding significant environmental impacts and complying with the Rules, including the requirement to achieve maximum sustained production.

Response to Comment 7-26. Refer to Substantive Issue 1-1, "Timber Revenues and Operational Costs".

Response to Comment 7-27. Cafferata and Poole (1993) refer to a study of a watershed in northwestern California (Rice and Lewis 1991) where projected erosion and sedimentation rates were similar to those projected for the East Branch watershed. They also state that erosion and sedimentation rates for nonforest land in the East Branch watershed were inferred from data for the Newell Creek watershed in western Santa Cruz County.

Response to Comment 7-28. The State Water Resources Control Board (SWRCB) certified the Rules as best management practices in 1984 on the condition that the Board of Forestry would make specific improvements to the Rules and would develop a monitoring program for assessing their effectiveness. Rule changes to further protect beneficial uses of water were implemented in 1992; timber operations at SDSF will meet or exceed the standards contained in the revised Rules. A statewide program for monitoring the Rules' effectiveness is still being developed. The monitoring program being implemented at SDSF is consistent with the objectives and approaches of a program that has been recommended for statewide implementation (Monitoring Study Group of the State Board of Forestry 1993); the SDSF program could constitute a pilot project for the statewide program or could contribute monitoring results to it.

Response to Comment 7-29. Refer to Substantive Issue 3-3, "Project-Level Erosion and Sedimentation Control".

Response to Comment 7-30. Tractor operations are an important source of soil disturbance. Measures to reduce erosion attributable to such disturbance include restricting tractors to slopes not exceeding 50%, using existing skid trails wherever possible, and carefully reviewing proposed locations for new roads, skid trails, and landings.

Response to Comment 7-31. Table 3-3 of the draft EIR indicates that an average of 1,900 cubic yards of soil is projected to erode every five years per mile of forestry road in use (not per acre of forest) at SDSF.

Response to Comment 7-32. Refer to Substantive Issue 3-2, "Significance Criteria for Sediment Impacts".

Response to Comment 7-33. Refer to Substantive Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment 7-34. The average annual rate of sedimentation projected for Alternative 2 is 2% greater than that for the proposed project because a larger area would be disturbed by harvesting in an average year under Alternative 2. Relatively large harvesting areas would be required under Alternative 2 because, on average, 33% less timber volume would be removed from each acre harvested under Alternative 2, compared to the proposed project.

Alternative 2 was designed to incorporate the themes of restricted timber operations in late-succession management areas adjacent to Class II and Class I streams and retention of overstory trees throughout SDSF. It focuses on protecting watershed resources by restricting disturbance, not through implementing extensive watershed restoration projects. Its relatively small watershed remediation program is a consequence of the relatively small amount of timber revenue that would be generated.

Response to Comment 7-35. Since publication of the draft EIR, the coho salmon has been listed as threatened in waters south of San Francisco Bay under the California Endangered Species Act and has also been proposed for listing as threatened under the federal Endangered Species Act.

Response to Comment 7-36. The southwestern pond turtle is highly aquatic but leaves the water to bask on rocks or logs or to deposit eggs along the streamside or in adjacent uplands up to 1,300 feet from water (Holland and Bury 1992). As described on pages 5-26 and 5-29 of the draft EIR, the southwestern pond turtle is known to occur in SDSF only along the extreme lower reach of the East Branch. The proposed 300-foot-wide area buffer areas along each side of the East Branch and other Class I streams would provide protection for some upland habitats adjacent to the species' principal habitat. Additionally, logging operations in upland areas that could directly disturb individual pond turtles would be occasional and temporary, and upland pond turtle habitat would not be degraded over the long term from timber operations. Based on the limited activity proposed along Class I streams with potential to support southwestern pond turtles, impacts of the proposed project on pond turtles are considered less than significant.

Response to Comment 7-37. Light timber harvesting in riparian areas would occur infrequently and would not result in long-term adverse effects on the riparian system. In contrast, public use of riparian areas will be ongoing and could eventually have an adverse effect on riparian habitat. (Refer to Substantive Issue 4-2, "Impacts of Public Use and Related Facility Development on Riparian Habitat".)

The primary purpose of site-specific management activity in the riparian areas would be to improve habitat conditions for fish and provide diverse vegetation structures for wildlife. (Refer to Substantive Issues 2-3, "Planting of Conifers in Riparian Zones to Promote Recruitment of Instream Large Woody Debris" and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Zone Vegetation and Wildlife".) Additionally, site-specific environmental evaluation of timber operations will occur at the project level, and mitigation would be implemented as needed to avoid significant impacts (refer to Appendix B of this final EIR).

Response to Comment 7-38. Refer to response to comment 7-2 and Substantive Issue 4-3, "Achieving Maximum Sustained Production".

Response to Comment 7-39. Proposed harvesting would not be incompatible with maintaining wildlife populations at SDSF. No substantial changes in the overall use of the forest by wildlife species is expected to occur.

Response to Comment 7-40. Refer to Substantive Issue 2-1, "CEQA Review of the SDSF Recreation Master Plan.

Response to Comment 7-41. The assumption that complaints from adjacent land owners would not substantially increase as public use increases is based on the absence of a marked trend in such complaints in recent years, despite a substantial increase in public use, and on the expectation

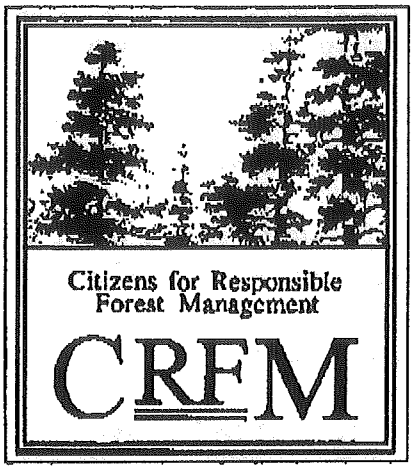
that unlawful activities will continue to be effectively discouraged and controlled. As described in response to comment 7-6, SDSF staff will monitor the need for law enforcement and forest patrol staff based on the number and frequency of violations. If the number and frequency of violations increase significantly, SDSF staff will respond to reduce conflicts with adjacent owners.

Response to Comment 7-42. No new access road will be constructed unless it provides adequate sight distance and meets all other applicable safety standards.

Response to Comment 7-43. Slant distance is the straight line distance between the helicopter and a receptor on the ground. The term "slant" is used because the straight line between a helicopter and a receptor on the ground is often slanted relative to the ground. When a helicopter is directly overhead, the slant distance is the vertical elevation of the helicopter above the ground.

Concerning the comparable sound levels for three chainsaws and a helicopter, the sound level for a helicopter is specified for a distance 10 times greater than that for chainsaws. This implies that the helicopter is 20 dB louder than the chainsaws, which equals approximately four times the level of the chainsaws. Topographic shielding will provide 5 to 10 dB of sound reduction. The reported helicopter sound level is the maximum pass-by sound level. Although no data were available for hovering, ascending, or descending helicopters, sound levels during these operations would be similar to the maximum pass-by level identified in the document.

Response to Comment 7-44. Restricting flight paths for helicopter yarding to areas at least 0.5 mile from any residence is not feasible. As discussed in the draft EIR, however, helicopter operations would occur relatively rarely (at most three sales per decade), and helicopters would operate almost entirely over SDSF between the harvest areas and landings, so flights near adjacent residences would be minimal. To minimize noise exposure to residents, landings will be located at least 0.5 mile from the nearest occupied dwelling and operations would be limited to the hours of 7:00 am to 9:00 pm. These measures exceed Federal Aviation Administration (FAA) standards for helicopters carrying external loads (14 CFR 133). Impacts of helicopter yarding on public safety and noise levels would be less than significant.



RECEIVED
CDF
RESOURCE MANAGEMENT
TIMBER OPERATOR LICENSING
SEP 05 1995

September 5, 1995

Jonathan E. Rea
California Department of
Forestry and Fire Protection
1416 Ninth Street
Sacramento, CA 95814

Dear Jonathan,

Enclosed are CRFM's concerns related to the Draft Environmental Impact Report (DEIR) and the General Forest Management Plan (GFMP) for Soquel Demonstration State Forest (SDSF). Our goal is to help assure that this project correctly implements the intentions of Assembly Bill (AB) 1965. SDSF is a beautiful and ecologically significant area. The work of CDF on this project, if properly executed, can provide a demonstration of natural resource stewardship, fiscally responsible operations management, and research into forestry practices that could improve timber management throughout the county and state. Because CDF does not have to operate under pressures to produce a profit, the forest can be managed to protect the watershed, enhance the environment, and nurture old growth redwoods. This is the hope and promise of AB1965.

CRFM's hope is that CDF will take our inputs and dare to break through established CDF and standard logging industry practices to accommodate the new requirements local communities have for environment responsibility.

AB 1965 Compliance

During the last several years, members of CRFM have attended almost every Advisory Committee Meeting and other public forums on SDSF. We have consistently pointed to AB 1965 as the enabling and controlling legislation for the SDSF forest. Our existence and growing membership is based upon community support for this legislation.

We have several attorneys in our group and we have all discussed the legal status of AB 1965 (PRC sections 4660-4664) relative to the legislation that enabled the demonstration forest system, PRC sections 4631-4658. Our unanimous conclusion, backed by the Legislative Counsel Opinion obtained last year and included herein, is that the specific legislation that enabled SDSF takes precedence over the general legislation that enables the demonstration forest system. Hence, while both pieces of legislation are California Law, if there is a conflict between the statutes or if there is a conflict between AB 1965 and Board of Forestry Policy, the specific legislation of AB

1965 takes precedence. This means that SDSF must be managed to achieve the set of goals and financial constraints legislated in AB1965.

The short-term GFMP (which limits harvest levels 750MBF) and Alternatives 1 and 2 do not appear to set forth plans whose timber harvest levels provide for more revenue than needed to cover operational expenses. These alternatives are, therefore, AB 1965 compliant. 8-1

The long-term GFMP (which alludes to harvesting 65% of growth) and Alternative 3, however, propose plans which generate large excess revenues making both plans illegal. While the negative impacts of Alternative 3 are noted in the DEIR, the impacts of the long-term GFMP are not analyzed at all! We suggest that the long-term GFMP and any reference to it be removed from the DEIR.

Keep the Original Goals

Second, given that AB 1965 is the controlling legislation in this case, the stated goals of the project should remain the goals set forth by the legislature for the project and contained in PRC 4660-4665. Rephrasing of the management goals is not needed since the goals set forth by the legislature are very clear. Adding new goals or changing old ones is misleading and leads to overlaying a project with a new agenda. If the legislature had wished CDF to set the goals for this project, they wouldn't have listed them in the statute. In this case, the goal of protecting old growth redwoods, for instance, was forgotten. 8-2

Analyze Better Alternatives

Alternative 3 plans harvest levels and activities significantly outside of the scope intended for this project and dictated by AB 1965. We assume that only three alternatives were analyzed because of financial constraints. Inclusion of Alternative 3, however, prevented other, more appropriate, alternatives from being analyzed. As a result, finer analysis of other potential alternatives was not performed. We feel, that at least one other alternative with environmental impacts between Alternative 2 and the GFMP should have been included in the analysis. 8-3

Alternative 2 was ultimately rejected because the "relatively low level of timber harvesting would reduce funding for watershed remediation, fish habitat improvements, construction and maintenance of recreation and education facilities, and overall forest administration." According to the DEIR, the GFMP harvests 750 MBF/year and generates enough revenue to accomplish all of the activities listed above. Alternative 2, however, harvests 500 MBF/year and does not generate enough revenue to accomplish many of the tasks. There are several issues raised by this conclusion. 8-4

- First, what are the real numbers? There is insufficient information in the DEIR to comment on this conclusion.
- Second, why was another alternative not considered? Another alternative might harvest 600 MBF, for instance, with increased funding for watershed remediation, fish habitat and 8-5

administration and decreased funding for recreation and education facilities? CRFM, in fact, proposed a similar alternative in the scoping meetings and in our letter of March 18, 1995: 8-5 [cont]

> "A second feasible alternative plan would be a plan that continues the level of CDF staffing but limits recreational use of the forest. AB 1965 specifically requires CDF to manage the forest to protect old growth, protect the watershed, demonstrate sustained yield timber management and provide educational and research opportunities. Its requirements regarding recreation are vague. (AB 1965 "requires special measures for [old growth redwood] protection *for the use, enjoyment and education of the public.*") This requirement does not necessarily translate into a requirement to permit camping and mountain bicycling. Hence a second alternative plan that concentrates ONLY on meeting the requirements of AB 1965 and limits recreation should be considered. Under this alternative, timber management and environmental protection would become the ONLY goals of the forest decreasing the negative effects of large scale recreational activities and decreasing further the costs of forest administration."

- And third, the definition of Alternative 2 in the DEIR may have been unnecessarily constrained. Alternative 2 in the DEIR was designed to "Emphasize Watershed and Late Succession Habitat Protection" . How could an Alternative that "Emphasized Watershed and Late Succession Habitat Protection" fail in protecting the watershed due to lack of funds while still funding educational centers and recreational facilities? Perhaps the definition of this alternative should be reviewed. Perhaps a financially more practical and environmentally sounder definition of Alternative 2 should be analyzed. 8-6

According to CEQA regulations, **feasible** alternative plans must be assessed to find the lowest impact alternative that satisfies the project objectives. PRC section 21002 forbids agencies from approving projects with significant adverse impacts when feasible alternatives or feasible mitigation measures exist.

We believe that a better set of feasible alternatives needs to be considered and/or that the existing set of alternatives needs to be redefined to be more feasible and suitable for analysis.

Sincerely,

Mark Morgenthaler
Citizens for Responsible Forest Management

ASSEMBLY BILL NO. 1965

CHAPTER 1338

An act to add Article 4 (commencing with Section 4660) to Chapter 9 of Division 4 of the Public Resources Code, relating to state forests.

(Approved by Governor September 29, 1987.
Filed with Secretary of State September 29, 1987.)

LEGISLATIVE COUNSEL'S DIGEST

AB 1965, Farr. Soquel Demonstration State Forest.

Under existing law, the Department of Forestry and Fire Protection is authorized to engage in the management, protection, and restoration of state forests in accordance with plans approved by the State Board of Forestry.

This bill would declare it the policy of the state to establish the Soquel Demonstration State Forest in Santa Cruz County. The department would be responsible for the development and establishment of the state forest and for maintenance and operations. The bill would authorize the department to permit a limited amount of commercial timber operations within the forest in order to provide funds for its maintenance and operation. The bill would require the department, in conjunction with a specified advisory committee, to adopt a general plan for the park by January 1, 1989, and would require the general plan to be approved by the advisory committee prior to adoption by the department.

The department's duties and authority under the bill would only arise if the state acquires the property comprising the demonstration forest.

The people of the State of California do enact as follows:

SECTION 1. Article 4 (commencing with Section 4660) is added to Chapter 9 of Division 4 of the Public Resources Code, to read:

Article 4. Soquel Demonstration State Forest

4660. It is hereby declared to be the policy of the state to establish and preserve an intensively managed, multifaceted research forest which is representative of forest activities as a living forest in Santa Cruz County within northern California's coastal redwood belt. The coast redwoods, as the dominant tree species in this area, are a valuable natural resource and are unique in North America for their beauty, abundance, diversity, and public accessibility, and their extreme beauty and economic value requires special measures for their protection for the use, enjoyment, and education of the public.

It is the intent of the Legislature, in establishing the Soquel Demonstration State Forest, to provide an environment that will do all of the following:

(a) Provide watershed protection for local communities and base-line monitoring and studies of the hazards, risks, and benefits of forest operations and watersheds to urban areas.

(b) Provide public education and examples illustrating compatible rural land uses, including sustained yield timber production, as well as the historic development of timbering and forestry machinery, within the context of local community protection and nearby pressures.

(c) Provide a resource for the public, environmental groups, elected officials, environmental planners, the educational community, and the media as an open environment for the inspection and study of environmental education, forestry practices, and effects thereof.

(d) Protect old growth redwood trees.

4661. The department may permit a limited amount of commercial timber operations on the property within the Soquel Demonstration State Forest in order to provide funds for the maintenance and operation of the state forest and to allow fulfillment of the objectives of Section 4660. Income from the state forest property shall sustain all costs of operation and provide income for research and educational purposes.

4662. The department is responsible for the development and establishing of the Soquel Demonstration State Forest and for ongoing maintenance and operations. The director shall appoint an advisory committee to assist the department in planning future management of the forest. The advisory committee shall include representatives of the Santa Cruz County Board of Supervisors, the Department of Parks and Recreation, the Board of Forestry, the Forest of Nicene Marks Advisory Committee, and the Department of Fish and Game.

4663. The department, in coordination with the advisory committee, shall adopt by January 1, 1989, a general plan for the state forest which reflects the long-range development and management plans to provide for the optimum use and enjoyment of the living forest, as provided in Section 4660, as well as the protection of its quality and the watershed within the Santa Cruz area. The general plan shall be approved by the advisory committee prior to adoption by the department.

4664. The duties and authority of the department pursuant to this article shall only arise if the state acquires the property comprising the Soquel Demonstration State Forest.

Jack I. Horton
Chief Deputy

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Harvey J. Foster
John T. Studebaker
Daniel A. Weitzman

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Thomas D. Whelan
Jack G. Zorman
Deputies

Sacramento, California

August 1, 1994

Honorable Henry J. Mello
313 State Capitol

Soquel Demonstration State Forest: Commercial Timber Operations - #19028

Dear Senator Mello:

QUESTION

May the Department of Forestry and Fire Protection, pursuant to Section 4661 of the Public Resources Code, allow an amount of commercial timber operations on the property within the Soquel Demonstration State Forest that exceeds the amount necessary to provide funds for the maintenance and operation of the state forest and to allow fulfillment of the objectives set forth in Section 4660 of the Public Resources Code?

OPINION

The Department of Forestry and Fire Protection may not, pursuant to Section 4661 of the Public Resources Code, allow an amount of commercial timber operations on the property within the Soquel Demonstration State Forest that exceeds the amount necessary to provide funds for the maintenance and operation of the state forest and to allow fulfillment of the objectives set forth in Section 4660 of the Public Resources Code.

ANALYSIS

Section 4660 of the Public Resources Code[1] declares that it is "the policy of the state to establish and preserve an intensively managed, multifaceted research forest which is representative of forest activities as a living forest in Santa Cruz County within northern California's coastal redwood belt." Section 4660 further states the intent of the Legislature to

[1] All section references are to the Public Resources Code, unless otherwise specified.

provide watershed protection, provide public education, provide an open environment for the inspection and study of environmental education and forestry practices, and protect old growth redwood trees.

Section 4661 authorizes the Department of Forestry and Fire Protection (hereafter the department) to allow limited commercial timber operations within the Soquel Demonstration State Forest and reads as follows:

> "4661. The department may permit a limited amount of commercial timber operations on the property within the Soquel Demonstration State Forest in order to provide funds for the maintenance and operation of the state forest and to allow fulfillment of the objectives of Section 4660. Income from the state forest property shall sustain all costs of operation and provide income for research and educational purposes."

Section 4661 thus authorizes the department to permit limited commercial timber operations within the state forest for specified purposes.

The acts of an administrative entity may not exceed the restrictions prescribed by statute (Birch v. Board of Supervisors, 191 Cal. 235, 237), and an administrative entity may act only within the scope of statutory authority, to do that which is reasonably necessary or appropriate to the interests or purposes of the statute (First Industrial Loan Co. v. Daugherty, 26 Cal. 2d 545, 550). Thus, the department is limited to actions that fall within the authority granted by Section 4661.

Section 4661 expressly grants the department the power to permit limited commercial timber operations to provide funds for the maintenance and operation of the state forest and for research and educational purposes and other purposes in fulfillment of the objectives of Section 4660. Pursuant to the doctrine of "expressio unius est exclusio alterius," the enumeration of things coming within a statute will preclude the inclusion by implication of other things (Gonzales v. Concord Gardens Mobile Home Park Ltd., 90 Cal. App. 3d 871, 874; People v. Mancha, 39 Cal. App. 3d 703, 713). Because Section 4661 enumerates the purposes for which the department may permit commercial timber operations in the state forest, the department is precluded from permitting operations for any other purposes, including operations that exceed the amount necessary to provide funds for the enumerated purposes.

Accordingly, we conclude that the department may not, pursuant to Section 4661, allow any amount of commercial timber operations on the property within the Soquel Demonstration State Forest that exceeds the amount necessary to provide funds for the

maintenance and operation of the state forest and to allow fulfillment of the objectives set forth in Section 4660.[2]

Very truly yours,

Bion M. Gregory
Legislative Counsel

By Jessica L. Steele
Jessica Steele
Deputy Legislative Counsel

JS:kg

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[2] In this regard, we also considered, pursuant to your request, whether Section 4631 conflicts with the provisions regarding the Soquel Demonstration State Forest (Art. 4 (commencing with Sec. 4660), Ch. 9, Pt. 2, Div. 4; hereafter Article 4). Section 4631 declares general policy regarding state forests, including that it is the policy of the state to acquire, among other things, areas within specified forest districts for the demonstration of economical forest management, as prescribed. It is an axiom of statutory construction that a particular or specific provision will take precedence over a conflicting general provision; and that a more recently enacted statute will govern and take precedence over an earlier enacted statute (Sec. 1859, C.C.P.; Agricultural Labor Relations Bd. v. Superior Court, 16 Cal. 3d 392, 420; Fleming v. Kent, 129 Cal. App. 3d 887, 891). Article 4 specifically relates to the Soquel Demonstration State Forest and was enacted after Section 4631. Thus, the provisions of Article 4, including Sections 4660 and 4661, take precedence over the general declaration of state policy regarding demonstration forests in Section 4631. Further, Section 4631 was enacted in 1965 (Ch. 1144, Stats. 1965) and Article 4, including Section 4661, was enacted in 1987 (Ch. 1338, Stats. 1987). Thus, it is our opinion that Section 4631 does not conflict with the provisions of Article 4.

Response to Comment 8-1. Refer to Substantive Issues 1-1, "Timber Revenues and Operational Costs" and 1-5, "Impacts of Implementing the Proposed Long-Term Increase in Harvesting Rate".

Response to Comment 8-2. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives".

Response to Comment 8-3. Refer to Substantive Issue 1-4, "Reasonable Range of Alternatives".

Response to Comment 8-4. Refer to Substantive Issue 1-1, "Timber Revenues and Operational Costs".

Response to Comment 8-5. Refer to Substantive Issue 1-4, "Reasonable Range of Alternatives".

Response to Comment 8-6. Refer to Substantive Issue 1-4, "Reasonable Range of Alternatives" and the response to comment 7-34 above.

Letter 9

SIERRA CLUB

Santa Cruz Regional Group of the Ventana Chapter

P.O. Box 604, Santa Cruz, California 95061 (408) 426-4453

Sept. 1, 1995

Mr. Jonathan Rea, Resources Agency
Dept. of Forestry & Fire Protection
1416 9th St.
Sacramento, CA 95814

Re: Draft Environmental Impact Report for Soquel Demonstration State Forest General Forest Management Plan.

There are three realities given inadequate consideration or none at all in this DEIR. The first is Assembly Bill 1965 which established the Soquel Demonstration State Forest some forty years after the legislation establishing California's other State Demonstration Forests. AB 1965 set specific goals and parameters for SDSF including education and enjoyment by the public and the requirement that the forest be economically self-sufficient with the level of timber harvesting limited to that purpose. Of the alternatives to the Management Plan which were evaluated, the no-plan alternative does not meet the legislative requirements for self-sufficiency. Alternative 3 far exceeds the restrictions placed on timber harvesting and the level of recreational use intended by the legislation. Genuine alternatives offering fine-tuning of the Master Plan would have been more appropriate. 9-1

The second inadequately considered reality is the immaturity of the trees of the Soquel Demonstration State Forest as the result of recent overcutting. Referring to Table 5-1 (P. 5-5), of the Forest's 2,681 total acres, only 31 acres (1.2%) are Late Successional with a minimal dbh greater than 24 inches. This forest is clearly in need of healing and maturing. Alternative #2 offers potential solutions to this need, but does not meet the requirements of AB 1965 for self-sufficiency. Elements of this alternative should be analized separately to evaluate the long-term financial and ecological benefits against current financial loss. In this balance, cost cutting measures in the Management Plan should be evaluated. Specifically, fish biologist Don Alley suggested at the public hearing that the fish remedation measures are not cost/results effective as against a no-cut, no-entry policy. Substantial savings could be realized by postponing construction of an educational center and special use campgrounds until there is a better balance between the demand for such facilities and the productive maturity of the forest. 9-2

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Santa Cruz Regional Group of the Ventana Chapter

P.O. Box 604, Santa Cruz, California 95061 (408) 426-4453

DEIR for SDSF - 2.

The third omission is in the time frame. P. 2-5 states that the period of the GFMP is the next 10 years with a harvest rate of 30% of confier growth, approximately 750 MBF, requiring approximately 35 years to conduct selection harvest throughout the entire forest. However, the paragraph concludes by projecting a cut of 65% of conifer growth rate in 40-60 years, more than double that in the GFMP. P. 1-2 states, "The environmental impacts of the types of actions central to the GFMP (e.g. timber harvesting and watershed remediation) are expected to be similar over an extended period and a wide range of locations. Consequently, CDF has elected to prepare a program EIR for the proposed project." I did not find anywhere a statement limiting the DEIR to the time frame covered by the GFMP. This fact should be clearly stated. If the scope of the EIR is to extend beyond that of the GFMP, a complete section would be needed to evaluate the environmental impact when the GFMP ends and the plan of timber harvesting is so substantially altered. 9-3

Yours very truly,

Ida Hills

Ida Hills, for
The Forestry Task Force

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Response to Comment 9-1. Refer to Substantive Issues 1-1, "Timber Revenues and Operational Costs", 1-2, "Consistency with Legislative Goals and Objectives", and 1-4, "Reasonable Range of Alternatives".

Response to Comment 9-2. Refer to Substantive Issues 1-1, "Timber Revenues and Operational Costs", 1-2, "Consistency with Legislative Goals and Objectives", and 1-4, "Reasonable Range of Alternatives".

Response to Comment 9-3. Refer to Substantive Issue 1-5, "Impacts of Implementing the Proposed Long-Term Increase in Harvesting Rate".

Letter 10

Jonathan E. Rea
California Department of Forestry
1416 9th Street
Sacramento, California 95814

8/15/95

Dear Mr. Rea,

I want to request that overnight horse camping be added to the EIR for the Soquel Demonstration State Forest. There are a couple of reasons why this is a good thing. 10-1

I have been riding in the SDSF for almost 4 years now. Rarely do I encounter another soul in the forest, even on the main jeep road. However, increasingly I do come across groups of bike riders. I believe that promoting balanced use of the park is important in that it promotes interaction of people who have seperate interests, but share a common bond...respect for nature. If hikers and riders aren't given equal access and rights, bikes could very well take on ownership position. I was recently admonished by a bike rider to stay off Sawpit trail because it was only open to bikes. I know that that isn't true, but one could get that impression from the well worn grooves from the bike tracks.

I also would appreciate gaining a better understanding of the ways hikers, bikers and riders can make life better for each other. For example, the standard rule is that the horse has the right of way, but maybe if I understood under which circumstances that doesn't work in reality, I could respond more appropriately when I encounter a bike or person on the trail.

I believe that riders can help keep forest management advised of the condition of the trails and of activities in the park that may not be appropriate. Volunteer mounted patrols are used in many of the local state parks. Less formally, I have enjoyed my interaction with Tom Sutfin and Rich Elliot sharing news of goings on in the park.

Manure collection areas in the campsite are used at most of the local parks that have horse camping facilities. Though one local park requires that the manure be bagged up and removed. Horse campers are willing to abide by the rules because we want to keep our privileges.

In closing, horse campers are good citizens and should be welcomed to camp in SDSF. Many non-horse owners enjoy looking at and petting these handsome animals. A mixed use campground would give others an opportunity to learn more about horses.

Thank you for your consideration,

Charlotte Smothers

Charlotte Smothers
Member of the Board, Summit Riders Horsemens Association

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Response to Comment 10-1. Whether the proposed campground would be designed to accommodate the special needs of equestrian camping has not yet been determined; such issues are expected to be resolved in the forthcoming recreation master plan.

SEP-05-1995 16:26 FROM SOQUEL STATE FOREST TO 1-916-653-8957 P.01

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Jon R&A	From Jerald Cloyd
Co. CDF	Co. n/a
Dept. Resource Mgm	Phone # (408) 462-3030
Fax # (916) 653-8957	Fax #

Soquel Demonstration State Forest
Old Soquel and San Jose Road
Soquel, California

September 4, 1995

Dear Sir,

I have one comment concerning the GFMP of July 1995. On page 2-7 column 1 forth line you mention the "removal of exotic plants and the restoration of native vegetation". I understand that non-native vegitation may displace vegetation native to this area. However, given the SDSF's goal of closely monitoring plant life in its domain, would it be scientifically fruitful to determine whether non-native vegetation might have an ecologically useful nitch in our area? Specifically, I notice that pine trees do not do well along the freeway, perhaps non-native vegetation may prosper in more extreme environments such as this. Secondly, are there uses for "exotic" vegitaiton in the areas of furniture construction or other commercial areas? Such commercial uses would motivate private property owners to monitor these trees closely for commercial use and keep them from becoming overly dominant in the area. Finally, the diversity of plant life gives a texture to the environment not found in our area should we become too uniform and "farm like" in our choices of "acceptable vegetation". I understand the dangers of powerful forms of vegetation overtaking local plant life patterns, however, a clear long term understanding of these plant's strengths and weakness in our forests and our commercial enterprises may be the best way to focus on managing this demonstration forest. 11-1

Sincerely,

Jerald W. Cloyd

Jerald W. Cloyd
PO Box 2869
Santa Cruz, cA 95063

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Response to Comment 11-1. Although conducting applied forest management research is an objective for SDSF, research on the suitability of exotic plant species for planting on environmentally severe sites (e.g., along freeways) and on potential uses of exotic tree species as alternative forest products is not within the range of study topics currently being considered.

Letter 12

Elizabeth Herbert
P. O. Box 1075
Aptos, CA 95001
September 5, 1995

Jonathan E. Rea
California Dept. of Forestry
and Fire Protection
1416 Ninth St.
Sacramento, CA 95814

fax: (916) 653-8957

Re: comments regarding draft EIR for the Soquel Demonstration State Forest general forest management plan, prepared by Jones & Stokes Associates, Inc.

Since watershed protection is the primary management goal of the SDSF, according to AB1965, I wish to draw your attention to the inadequacy of the draft EIR in that regard. On page 3-10, it is stated that the Forest Practice Rules were conditionally certified as best management practices (BMP) by the California State Water Resources Control Board in 1987. However, it is not stated that the U. S. Environmental Protection Agency has never certified them as BMP. According to page V-60 in the Option 9 FEMAT plan:

> "Although the Bureau of Land Management and the U.S. Forest Service will likely invest heavily in protecting the remaining aquatic an riparian habitat, the federal government cannot be solely responsible for ensuring the viability of migratory fish species. Unless state and private lands receive protection sufficient to prevent further degradation and to promote habitat recovery, benefits derived from federal effort will be diminished. Best management practices are tactics used to protect water quality and the beneficial uses of water including fish and water-dependent wildlife on state and private lands. Oregon and Washington both have forest practice acts and regulations that include Best Management Practices intended to protect aquatic riparian habitats. However, California Forest Practices Rules have not yet been certified as Best Management Practices under the Clean Water Act."

Therefore, if watershed protection is the primary goal, standards higher than the Forest Practice Rules must be set for the SDSF. Compared to state-of-the-art forest practices, as defined in Option 9 (FEMAT), one of the biggest shortcomings of the Forest Practice Rules is protection of the riparian corridor. The Watercourse and Lake Protection Zone (WLPZ) is small compared to the riparian protection zones defined in Option 9 rules. Tree cutting and road-building are common within the WLPZ, whereas in Option 9, protection zones are no-cut/no-entry zones. Little or no protection is given to intermittent or class III streams by the Forest Practice Rules; Option 9 recognizes the potential impacts resulting from compaction and erosion, and requires a 100 foot no-cut/no-entry buffer zone on either side of the intermittent stream. But do not take my word for it; please read pages V-29 through V-39 of Option 9, which describe the Aquatic Conservation Strategy, and the components of that strategy, including riparian reserves. The chart on page V-37 show that Option 9 has a 300 foot no-cut/no-entry zone on each side of fish-bearing stream, 200 foot no-cut/no-entry zone on each side of a permanent non-fish bearing stream, and a 100 foot no-cut/no-entry zone on each side of an intermittent stream. Also, see pages 12 - 14, which describe the reasons for setting aside reserves.

To make matters worse, the Forest Practice Rules require no actual water quality baseline measurements, and no post-harvest measurements. While it is clear that the activities allowed within the WLPZ due to road building and tree-cutting have a potential detrimental affect on the water course, it is left up to the subjective judgment of the RPF and the regulatory agencies to determine if the impact will be significant. This is not good science, especially if the RPF has a vested interest in finding that no significant impact will occur.

Considering the instability of the soils, the steepness of the slopes, the past history of clear cutting, flooding and earthquakes within the SDSF watershed, it would seem irresponsible at best for a government agency not to use the strictest accepted standards; that is, Option 9 standards rather than 12-1

correct name

Forest Practice Rules standards, which ARE NOT CERTIFIED AS BEST MANAGEMENT PRACTICES UNDER THE CLEAN WATER ACT. 12-1 [cont]

I am especially concerned with the DEIR's Chapter 3, Geology, Soils and Water Quality. I agree with Steven Singer, an erosion control specialist who spoke at the public hearing on August 23, that this chapter needs to be completely rewritten. I take issue with the way in which other scientists' data was used, but changed without justification. On page 3-15, it says, "Large gullies sometimes result from disturbances related to forest management; although such events are rare." I challenge the validity of this statement. Yet, the preparers of this DEIR decided to drop the one data point, out of the 26 collected by Cafferata and Poole, that accounted for 90 percent of the surface erosion in the sample, on the grounds that it was "anomalous." Dropping this data point totally changed the resulting average surface erosion from 45.2 cubic yards per acre to 5.6 cubic yards per acre. This is not supportable science! One does not just drop a data point from a set of randomly gathered data just because it doesn't agree with one's preconceived notions! 12-2

Also, unsupported statements like this are made: "Harvested areas were assumed to recover from disturbance after 5 years, following which the surface erosion rate was assumed to be reduced by 50%." I challenge the validity of this statement. 12-3

On page 3-16, it states: "Cafferata and Poole estimated the average annual erosion rate for nonforest lands at 4.6 cubic yards per acre, more than 16 times greater than their estimate for recently disturbed forest lands." This makes no sense, regardless of whose data you use for recently harvested forest land. According to the chart on page 3-14, the erosion rate for nonforest lands is 4.6 cubic yards per acre, but the erosion rate for recently harvested lands is listed as 5.6 cubic yards per acre (not the Cafferata and Poole data; it is the data that the DEIR preparers came up with after removing the "anomalous" data point). If you use Cafferata & Poole's data, 45.2 cubic yards per acre as the annual erosion rate for recently harvested forested land, then 4.6 is only one ninth of that, not 16 times greater! If you use 5.6 as the annual erosion rate for recently harvested forest land, then 4.6 is still less than that, not 16 times greater. 12-4

Based on the nature of the errors in this chapter, I urge you to rethink and then rewrite the whole chapter; it simply is not acceptable. I close with a quote from Option 9, PAGE V-61:

> "Current state forest practice rules do not adequately protect ecological effectiveness nor provide any margin for error to accommodate natural disturbances or uncertainties in knowledge. Thus, reliance on federal lands to supply habitat for aquatic species and fish stocks will increase. Federal lands currently provide most of the highest quality water and fish habitat within the range of the northern spotted owl. Habitat conditions on private and state lands are inadequate to provide well distributed, stabilized populations of salmonids. If measures are not taken to improve management practices on state and private lands, options for federal land management may become more limited. To succeed, the federal Aquatic Conservation Strategy should be accompanied by companion strategies for nonfederal lands. Although any aquatic conservation strategy employed on state and private lands should have the same components (Riparian Reserves, Key Watersheds, Watershed Analysis and Restoration) as the federal strategy, it is not necessary that they be identically administered."

The SDSF provides a clear opportunity to achieve model watershed and wildlife protection. Please rewrite your DEIR so that it achieves this goal.

Sincerely,

Elizabeth Hubert

cc: Mark Morgenthaler, CRFM

Attached: pages 12–14, V-29–V-39 of Option 9 (FEMAT)

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Forest Ecosystem Management:

An Ecological, Economic, and Social Assessment

Report of the Forest Ecosystem Management Assessment Team

July 1993

United States Department of Agriculture
Forest Service

United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

United States Department of the Interior
Bureau of Land Management

United States Department of the Interior
Fish and Wildlife Service

United States Department of the Interior
National Park Service

Environmental Protection Agency

U. S. DEPOSITORY
AUG 26 1993

height, would be effective to remove sediment in most situations if the buffer were measured from the edge of the floodplain.

Wildlife habitat. The Washington Department of Wildlife (1992) recommended wetland buffer widths for protection of wildlife species in that state. Roderick and Milner (1991) also prescribe wildlife protection buffer requirements for wetlands and riparian habitats in Washington. These widths vary from 100 to 600 feet depending on species and habitat usage. See appendix V-E for greater detail.

Aquatic Conservation Strategy

This conservation strategy is aimed at restoring and maintaining the ecological health of watersheds (Karr et al. 1986, Karr 1991, Naiman et al. 1992). The strategy was designed to provide a scientific basis for protecting aquatic ecosystem and enables planning for sustainable resource management. It is a region-wide strategy seeking to retain, restore, and protect those processes and landforms that contribute habitat elements to streams and promote good habitat conditions for fish and other aquatic and riparian-dependent organisms. The foundation of the conservation strategy is a refinement of the approach outlined in Thomas et al. (1993). All options under consideration, with the exception of Option 7, utilize one of three scenarios derived from this conservation strategy. These are referred to as Riparian Reserve 1, Riparian Reserve 2, and Riparian Reserve 3 and will be discussed in detail below.

An effective conservation strategy must protect aquatic ecosystem functions and processes, organized at a watershed scale, while recognizing that land ownership patterns rarely coincide with the distinct topographic boundaries of watersheds. Any conservation strategy that attempts to protect all components of the aquatic ecosystem ranging from landslides areas in the uplands to mainstem riparian forests must be extensive and comprehensive. Decision criteria for protection, monitoring and restoration must be included.

At the heart of this approach is the recognition that fish and other aquatic organisms evolved within a dynamic environment that has been constantly influenced and changed by geomorphic and ecologic disturbances. Stewardship of aquatic resources has the highest likelihood of protecting biological diversity and productivity when land use activities do not substantially alter the natural disturbance regime to which these organisms are adapted (Swanson et al. in press).

This conservation strategy employs several tactics with which to approach the goal of maintaining the "natural" disturbance regime. Land-use activities need to be limited or excluded in parts of the watershed prone to instability. The distribution of land-use activities, such as timber harvest or roads, must minimize increases in peak streamflows. Headwater riparian zones need to be protected, so that when debris slides and flows occur they contain large wood and boulders necessary for creating habitat farther downstream. Riparian zones along larger channels need protection to limit bank erosion, ensure an adequate and continuous supply of large wood to channels, and provide shade and microclimate protection. Watersheds currently containing the best habitat or with the greatest potential for recovery shall receive increased protection and be priorities for restoration programs.

Current scientific understanding of fish habitat relationships is inadequate to allow definition of specific habitat requirements for fish throughout their life cycle at the watershed level. Some general habitat needs of fish are well known, such as deep resting pools, cover, certain temperature ranges, food supply, and clean gravels for spawning (Bjornn and Reiser 1991). However, we cannot specify how these habitats and conditions should be distributed through time and space to provide for fish needs. In natural watersheds, different species and age-classes interact with multiple habitat elements in complex ways. This interaction occurs within a landscape where the quality and distribution of habitat elements change with time in relation to disturbance processes and land-use imposed changes on streams and riparian zones.

We believe that any species-specific strategy aimed at defining explicit standards for habitat elements would be insufficient for protecting even the targeted species. To succeed, any Aquatic Conservation Strategy must strive to maintain and restore ecosystem health at watershed and landscape scales. Thus, this is the approach the conservation strategy proposed here employs. This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds. We emphasize, however, that it will require time for this strategy to work. Because it is based on natural disturbance processes, it may take decades to over a century to accomplish all of its objectives. Some improvements in aquatic ecosystems, however, can be expected in 10 to 20 years. We believe that if this approach is conscientiously implemented, it will protect habitat for fish and other riparian-dependent species resources and restore currently degraded habitats.

Aquatic Conservation Strategy Objectives

Federal lands within the range of the northern spotted owl shall be managed to:

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These linages must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain in the range that maintains the biological, physical, and chemical integrity of the ecosystem, benefitting survival, growth, reproduction, and migration of individuals composing its aquatic and riparian communities.

5. Maintain and restore the sediment regime which the aquatic system evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

8. Maintain and restore the species composition and structural diversity of plant communities in riparian zones and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of large wood sufficient to sustain physical complexity and stability.

9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Quantifiable Objectives for Desired Conditions

Relationships between long-term trends in aquatic system degradation and the effects of forest management practices are well known, but quantitative relationships have been difficult to establish (Hicks et al. 1991a, Bisson et al. 1992). Due to inherent differences in stream size, storm magnitude, and geology, similar management practices may result in a different response (Hicks 1990). In addition, extended time periods and triggering climatic event may be required before the effects of land management are expressed in streams.

The wide range of natural variation of individual stream habitat variables and the complex, and little understood interplay between these (e.g., numbers of pools and pieces of large wood, percent fine sediment, and water temperature) makes it difficult to establish relevant quantitative management directives for habitat features. It is also difficult to quantify direct linkages among processes and functions outside the stream channel to in-channel conditions and biological variables.

Structural components of stream habitat must not be used as management goals in and of themselves. No target management or threshold level for these habitat variables can be uniformly applied to all streams. While this approach is appealing in its simplicity, it does not allow for natural variation among streams (Gregory et al. 1991; Rosgen 1988; Ralph et al. unpub. ms.). Furthermore, attaining the predetermined value does nothing to insure aquatic ecosystem processes are protected. These habitat parameters must be viewed collectively as part of the larger issue of watershed health and maintenance of natural physical and biological integrity (Karr 1991; Naiman et al. 1992).

An interagency effort, between the U.S. Forest Service and the Bureau of Land Management, is developing a strategy for maintaining and restoring anadromous fish habitat and watersheds. This project is establishing quantifiable objectives for desired conditions. The group is using empirical data and theoretical models to arrive at quantifiable channel, water, and riparian conditions. At the regional level, such quantifiable objectives may be appropriate to set direction for planning. However, we

believe that watershed-specific objectives are necessary to accommodate natural variability along the stream network.

Components of the Strategy

The basic components of the Aquatic Conservation Strategy are:

1. **Riparian Reserves:** Lands along streams and unstable areas where special Standards and Guidelines govern land-use.

2. **Key Watersheds:** A system of large refugia comprising watersheds that are crucial to at-risk fish species and stocks and for high quality water.

3. **Watershed analysis:** Procedures for conducting analysis that evaluate geomorphic and ecologic processes operating in specific watersheds. This should enable watershed planning that achieves Aquatic Conservation Strategy Objectives. Watershed analysis provides the basis for monitoring and restoration programs and the foundation from which Riparian Reserves can be delineated.

4. **Watershed Restoration:** A comprehensive, long-term program of watershed restoration to restore watershed health, riparian ecosystems, and fish habitats.

These components are designed to operate together to maintain and restore the productivity and resilience of riparian and aquatic ecosystems. They will not achieve the desired results if implemented alone or in some limited combination.

Each of the options developed for managing federal lands within the range of the northern spotted owl (described in chapter III), include a set of Late-Successional Reserves. Total area in Late-Successional Reserves varied from 5-9 million acres depending on the option (table V-4). While these reserves were not derived for the Aquatic Conservation Strategy, they are an important component. They confer two major benefits to fish habitat and aquatic ecosystems. First, the Standards and Guidelines under which Reserves are managed limit activity in these areas; providing increased protection for all stream types. Second, since these Reserves possess late-successional characteristics, they tend to be relatively undisturbed areas although some management may have taken place in them in the past. Some Reserves offer core areas of good stream habitat in predominantly degraded landscapes that will act as refugia and centers from which degraded areas can be recolonized as they recover. Streams in these Reserves may be particularly important for endemic or locally distributed fish species and stocks.

Riparian Reserves

Riparian Reserves are portions of watersheds where riparian-dependent resources receive primary emphasis and where special Standards and Guidelines (appendix V-F) apply. Riparian Reserves include those portions of a watershed that are directly coupled to streams and rivers, that is, the portions of a watershed required for maintaining hydrologic, geomorphic, and ecologic processes that directly affect streams, stream processes, and fish habitats. Riparian Reserves include the more common land resource management riparian management zones or streamside management zones and primary

Table V-4 Land allocations by option in millions of acres.

Option	1	2	3	4	5	6	7	8	9	10
Congressionally Withdrawn	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98
Late-Successional Reserve	11.50	8.92	8.04	8.41	6.86	7.52	5.91	7.52	7.05	7.52
Riparian Reserve	1.87	1.99	2.12	2.88	2.65	2.29	0.62	1.50	2.23	2.29
Administratively Withdrawn	1.08	1.52	1.68	1.66	2.08	1.83	2.29	1.83	1.65	1.83
Matrix	2.83	4.85	4.59	4.33	5.69	5.64	8.46	6.43	4.86	5.64
Managed Late-Successional	-	-	.85	-	-	-	-	-	-	-
Adaptive Management Areas	-	-	-	-	-	-	-	-	1.49	-
Total	24.26	24.26	24.26	24.26	24.26	24.26	24.26	24.26	24.26	24.26

source areas for wood and sediment such as landslides and landslide-prone slopes in headwater areas and along streams. Riparian Reserves generally parallel the stream network but also include other areas necessary for maintaining hydrologic, geomorphic, and ecologic processes. Riparian habitat conditions on federal lands within the range of the northern spotted owl have been degraded by road construction and land management activities.

Every watershed in National Forests and Bureau of Land Management Districts within the range of the northern spotted owl will have Riparian Reserves. Land allocated to Riparian Reserve status varies between options from 0.62 to 2.88 million acres (table V-4). It is important to note that the Riparian Reserve acreage is calculated only for land outside the Late-Successional Reserves and Congressionally Withdrawn Areas, thus if two options have identical interim widths for Riparian Reserves, the option with the larger Late-Successional Reserve system will have less Riparian Reserve acreage. For example, Options 1 and 4 both have interim Riparian Reserves of identical widths, but Option 1 has a much larger Late-Successional Reserve system and thus appears to have fewer acres in Riparian Reserves.

Maintaining the connectivity of all parts of the aquatic ecosystem is necessary for healthy watersheds and good fish habitat (Naiman et al. 1992). First- and second-order streams (Strahler 1957), which generally include permanently flowing nonfish-bearing streams and seasonally flowing or intermittent streams, often comprise over 70 percent of the cumulative channel length in mountain watersheds in the Pacific Northwest (Benda et al. 1992). These streams are sources of water, nutrients, wood, and other vegetative material for streams inhabited by fish and other aquatic organisms (Swanson et al. 1982; Benda and Zhang 1990; Vannote et al. 1980). Decoupling the stream network can result in the disruption and loss of functions and processes necessary for creating and maintaining fish habitat. Under this conservation strategy, Riparian Reserves are used, in part, to maintain and restore riparian structures and functions of intermittent streams.

Riparian Reserves will confer benefits to riparian-dependent and associated species other than fish. They will enhance habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas. Improved travel and dispersal corridors for many terrestrial animals and plants and a greater connectivity of the watershed should also result from establishment of Riparian Reserves.

Tree heights and slope distance provide ecologically appropriate metrics with which to establish Riparian Reserve widths. For example, tree height distance away from the stream is a better indicator of potential wood recruitment or degree of shade than is an arbitrary distance. Likewise, slope distance is a more meaningful ecological distance than horizontal distance.

Thomas et al. (1993) used specified widths, geomorphic features, or a distance equal to the height of a site-potential tree to delineate riparian areas. They defined a site-potential tree as a tree that has attained the maximum height possible given the site conditions where it occurs. We redefined the height of a site-potential tree as the average maximum height of the tallest dominant trees (200 years or more) for a given site class. Johnson et al. (1993 in prep.) used data collected in a 1978 Bureau of Land Management riparian forest inventory to estimate this height for various sites. National Forests and Bureau of Land Management Districts identified the site classes of riparian areas on lands under their jurisdiction. For all forests west of the Cascades, except the

Siuslaw National Forest, site-class IV was used. The height of a site-potential tree in these areas was 170 feet. The Siuslaw National Forest was classified as a site-class II for which a site-potential tree was 250 feet. The height of site-potential trees on forests east of the Cascades was estimated at 110 feet. These heights were used to delineate interim widths of Riparian Reserves for analysis purposes. Further analysis of plots from forest inventories for the Siuslaw, Willamette, and Olympic National Forests indicate the tallest tree heights were about 10 percent less than in the Bureau of Land Management riparian inventory. Forest-specific riparian inventories are needed to better determine the height of a site-potential tree for a given area. Tree heights used in this effort are probably an upper limit (See Johnson et al. 1993 for further details.)

Prescribed widths for Riparian Reserves of different waterbodies were determined based on several ecological and geomorphic factors. Watershed analysis will identify critical hillslope, riparian, and channel processes that must be evaluated in order to delineate Riparian reserves that assure protection of riparian and aquatic functions. Project level considerations of these processes and features will be the basis on which site-specific Riparian Reserves are delineated. We have established a set of interim widths of Riparian Reserves for all watersheds that apply until watershed analysis is completed, a site-specific analysis is conducted and described, and the rationale for final Riparian Reserve boundaries is presented. Interim widths are designed to provide a high level of fish habitat and riparian protection until watershed and project analysis can be completed.

Five types of streams or water bodies and interim widths of Riparian Reserves for each are:

- *Fish-bearing streams* - Riparian Reserves consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet, including both sides of the stream channel), whichever is greatest. This is the same in all Riparian Reserve scenarios.

- *Permanently flowing nonfish-bearing streams* - Riparian Reserves consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or depending upon the Riparian Reserve scenario - a distance equal to the height of some fraction of a site-potential tree, or a specified slope distance (table V-5), whichever is greatest.

- *Constructed ponds and reservoirs, and wetlands greater than 1 acre* - Riparian Reserves consist of the body of water or wetland and the area from the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance for wetlands greater than 1 acre, and from the edge of the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest. This is the same in all Riparian Reserve scenarios.

- *Lakes and natural ponds* - Riparian Reserves consist of the body of water or wetland and the area from the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest. This is the same in all Riparian Reserve scenarios.

- *Seasonally flowing or intermittent streams, wetlands less than 1 acre, and unstable and potentially unstable areas* - This category applies to features with high variability in size and site-specific characteristics. At a minimum, the Riparian Reserve must include:

  - The extent of unstable and potentially unstable areas.

  - The stream channel and extend to the top of the inner gorge.

  - The stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation.

  - Depending upon the Riparian Reserve scenario, extension from the edges of the stream channel to a distance equal to the height of some fraction of a site-potential tree, or a specified slope distance, whichever is greatest (table V-5).

Three scenarios were developed that define Interim Widths of Riparian Reserves (table V-5). These scenarios differ with respect to Interim widths for streams in Key and non-Key Watersheds (see Key Watershed discussion that follows). These scenarios are components of the set of options defined in chapter III. Interim widths of Riparian Reserves on permanently flowing, fish-bearing streams are identical for all three scenarios. For permanently flowing, nonfish-bearing streams, interim widths for scenarios 1 and 2 are identical, while those for scenario 3 are defined as one half that of the other two.

The greatest difference among scenarios is in interim widths defined for intermittent streams. In both Riparian Reserve scenarios 1 and 3 the interim widths on intermittent streams do not vary between Key and non-Key Watersheds. However, the interim widths for these streams prescribed in scenario 1 are six times greater than in scenario 3 (table V-5). In Riparian Reserve scenario 2, interim widths within Tier 1 Key Watersheds are the same as in scenario 1. In all other watersheds, scenario 2 widths are one half those defined for scenario 1.

Intermittent streams. Intermittent streams are an important, and often over-looked, component of aquatic ecosystems (Naiman et al. 1992). Intermittent streams are defined as any non-permanently flowing drainage features having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria. Several important ecological processes occur in them, including storage and processing of organic materials, the products of which are later transported to downstream areas. Intermittent streams store sediment and wood and are sources of these materials for permanently flowing streams.

Table V-5. Minimum widths of Riparian Reserves expressed as whichever slope distance is greatest. In addition, Riparian Reserves must include the 100-year floodplain, inner gorge, unstable and potentially unstable areas. See text for other criteria used to determine Riparian Reserve widths. Options to which Riparian Reserve scenario apply are also listed.

Riparian Reserve Scenario	Stream class	Tier 1 Key watershed	Tier 2 Key watershed	All other watersheds
Riparian Reserve 1 Options 1,4	Fish Bearing Streams	Average Height of Two Site Potential Trees or 300 Feet	Average Height of Two Site Potential Trees or 300 Feet	Average Height of Two Site Potential Trees or 300 Feet
Riparian Reserve 1 Options 1,4	Permanently Flowing Non-Fish Bearing Streams	Average Height of One Site Potential Tree or 150 Feet	Average Height of One Site Potential Tree or 150 Feet	Average Height of One Site Potential Tree or 150 Feet
Riparian Reserve 1 Options 1,4	Intermittent Streams	Average Height of One Site Potential Tree or 100 Feet	Average Height of One Site Potential Tree or 100 Feet	Average Height of One Site Potential Tree or 100 Feet
Riparian Reserve 2 Options 2,3,5,6,9,10	Fish Bearing Streams	Average Height of Two Site Potential Trees or 300 Feet	Average Height of Two Site Potential Trees or 300 Feet	Average Height of Two Site Potential Trees or 300 Feet
Riparian Reserve 2 Options 2,3,5,6,9,10	Permanently Flowing Non-Fish Bearing Streams in wetlands	Average Height of One Site Potential Tree or 150 Feet	Average Height of One Site Potential Tree or 150 Feet	Average Height of One Site Potential Tree or 150 Feet
Riparian Reserve 2 Options 2,3,5,6,9,10	Intermittent Streams	Average Height of One Site Potential Tree or 100 Feet	Average Height of One-half Site Potential Tree or 50 Feet	Average Height of One-half Site Potential Tree or 50 Feet
Riparian Reserve 3 Option 8	Fish Bearing Streams	Average Height of Two Site Potential Trees or 300 Feet	Average Height of Two Site Potential Trees or 300 Feet	Average Height of Two Site Potential Trees or 300 Feet
Riparian Reserve 3 Option 8	Permanently Flowing Non-Fish Bearing Streams	Average Height of One-half Site Potential Tree or 75 Feet	Average Height of One-half Site Potential Tree or 75 Feet	Average Height of One-half Site Potential Tree or 75 Feet
Riparian Reserve 3 Option 8	Intermittent Streams	Average Height of 1/6 Site Potential Tree or 25 Feet	Average Height of 1/6 Site Potential Tree or 25 Feet	Average Height of 1/6 Site Potential Tree or 25 Feet

Removing the connection between intermittent and permanently flowing streams may have detrimental consequences to the physical and biological components of stream ecosystems, particularly in the long-term.

Intermittent streams and adjacent areas are often the lands prone to slope stability problems in a watershed. Protection of intermittent streams is important for preventing increased rate and frequency of landslides in time and space, preventing accelerated surface and fluvial erosion, providing habitat for species unique to small stream riparian areas, and maintaining the landslide- and flood-delivered supplies of large woody material throughout the landscape.

The width of Riparian Reserves necessary to protect the ecological integrity of intermittent streams varies with slope and rock type. Figure V-14 shows the estimated size of Riparian Reserves necessary to protect the ecological values of intermittent streams with different slope and rock types. These estimates were made by geomorphologists, hydrologists, and fish biologists from the Bureau of Land Management, U.S. Forest Service, and the U.S. Environmental Protection Agency. These distances are consistent with the height of 1 site-potential tree discussed previously.

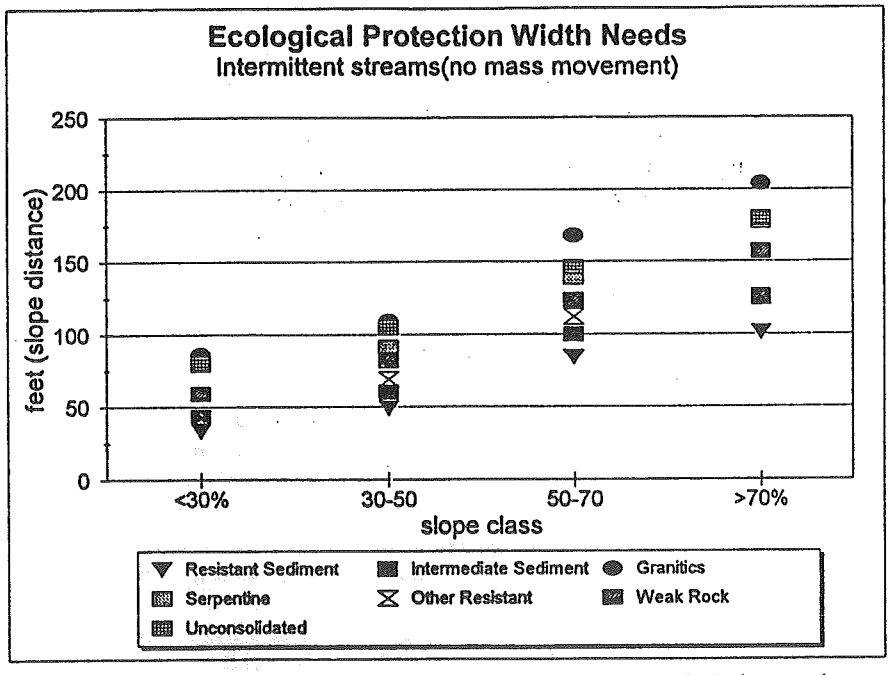

Figure V-14. Ecological protection needs for intermittent streams, by slope class and rock type. Values are the widths, and slope distance of streamside protection area needed for reasons other than slope stability as estimated by an interagency team of scientists based on professional judgement and experience. Protection needs included surface erosion of streamside slopes, fluvial erosion of the stream channel, soil productivity, habitat for riparian-dependent species, the ability of streams to transmit damage downstream, and the role of streams in the distribution of large wood to downstream fish-bearing waters.

The extent of intermittent streams on public lands is difficult to determine because: (1) no systematic inventory has been conducted using consistent criteria for defining or delineating channels on topographic maps; (2) topographic maps show many of the larger scale declivities in the landscape, but not all declivities are streams and not all streams that exist are shown on the maps; and (3) field inventory of the extent of intermittent streams is costly and the variability is so high that broad extrapolations to unsampled areas is questionable.

Both the Bureau of Land Management and U.S. Forest Service have estimates of the number of intermittent stream miles on lands under their jurisdiction but agency hydrologists believe these to be low. For this current effort, we sampled selected watersheds from National Forests and Bureau of Land Management Districts to estimate miles of intermittent channels. Using this procedure (described fully in appendix V-G) we estimate densities of intermittent streams on federal lands within the range of the northern spotted owl that are about 90 percent greater than previously estimated by the agencies.

Examples of extent of Riparian Reserves and Riparian Areas. Interim Riparian Reserves vary with Riparian Reserve scenario. The interim Riparian Reserve network under the scenarios 1 and 2 are demonstrated for Augusta Creek, Oregon in figures V-15 and V-16. Riparian Reserve scenario 2 is for non-Key Watersheds only. In addition, riparian areas similar to those used in Bureau of Land Management Land Management Plans and the Willamette National Forest Plan are displayed for Augusta Creek in figures V-17 to V-18, respectively.

Drainage basin area included within Interim Riparian Reserves and riparian areas varies among the management alternatives considered, ranging from 8.5 to 53 percent (table V-6). The major difference between management alternatives is due to the amount of intermittent streams included and the width of prescribed area along these streams.

Watershed analysis provides the ecological and geomorphic basis for changing the size and location of Interim Riparian Reserves. Figure V-19 illustrates how slope-stability and debris flow runout models may be used as part of watershed analysis in establishing Riparian Reserves. The result is that the basin is stratified into areas that may require wider or narrower Riparian Reserves than those prescribed for the interim. For example, on intermittent streams in unstable areas with high potential to generate slides and debris flows, Riparian Reserves wider than those prescribed for the interim may be necessary to ensure ecological integrity. Riparian Reserves in more stable areas may be less extensive, managed under upland standards and guides (e.g., levels of green tree retention as either single trees or in specified size patches), or a combination of these. The ultimate design of Riparian Reserves is likely to be a hybrid of decisions based on consideration of sites of special ecological value, slope stability, and natural disturbance processes.

Within a given physiographic province, similar geographic and topographic features control drainage network and hillslope stability patterns. These features may exert a strong influence on design of Riparian Reserves. For example, in the highly dissected southern Oregon Coast Range, debris flows originating in channel heads are the primary mass movement process. Large, slow-moving earthflows are dominant in the western Oregon Cascades. To adequately protect the aquatic system from management induced landsliding, riparian reserve design may vary as a result of these differences. In the

Designation of Reserves

The Team found that to assure the viability of threatened and at-risk species (and thereby satisfy the requirements of current law) some system of reserves was required. Consequently, each of the options contains reserve areas in which timber harvests are either not allowed at all or are limited, and areas outside of reserves (referred to as the **Matrix**) where most timber cutting occurs.

The reserves are of two types: **Late-Successional Reserves**, encompassing older forest stands, and **Riparian Reserves**, consisting of protected strips along the banks of rivers, streams, lakes, and wetlands, which act as a buffer zone between the water and areas where cutting is allowed.

Late-Successional Reserves were developed in three ways. In some options, the starting point was the habitat needs of individual species, particularly the northern spotted owl. Most of these incorporate the features of the Final Draft Recovery Plan for the Northern Spotted Owl (USDI 1992) that was developed by the Interior Department as required by the Endangered Species Act. The primary owl protection areas under that plan are known as **Designated Conservation Areas**. These are relatively large areas, both sized and spaced across the landscape in a manner that meets the habitat needs for multiple pairs of owls. Other smaller areas for the protection of individual pairs of owls (or single owls) are known as **managed pair areas, reserved pair areas,** and **residual habitat areas.** In developing options based on this approach, the Team generally started with owl habitat and then designated additional habitat to contribute to meeting the habitat needs of other species.

- Options 4, 5, and 7 take this approach. Of these, the Reserves are largest under Option 4 and smallest under Option 7.

Other options develop Late-Successional Reserves by starting with remaining old growth. In an earlier study, the old growth remaining on federal land in the region was classified in three categories of **late-successional/old-growth** (LS/OG) forests.

The first category, **LS/OG1**, includes relatively large areas containing old growth that was deemed to be the most ecologically significant. (These areas also contain some younger forest stands that have been previously cut or burned.) The second category, **LS/OG2**, contains old growth areas that tend to be somewhat smaller and more fragmented but still ecologically significant. The third category, **LS/OG3**, comprises isolated patches or highly fragmented parcels of old growth that have ecological importance to some species.

Both the northern spotted owl and the marbled murrelet are associated with habitat conditions found in old-growth areas. LS/OG-based reserves provide much of the necessary protection for northern spotted owls on federal lands. However, some additional designations (referred to as **owl additions**) are required to provide the habitat conditions needed for the recovery of the spotted owl. Options 1, 2, 3, 4, 6, 8, and 10 take an approach that includes some combination of LS/OG areas and owl additions:

- Option 1 protects LS/OGs 1, 2, and 3 and owl additions. It has the largest Late-Successional Reserves of any option and the most restrictive rules about entry into the Reserves.

- Options 2 and 3 protect LS/OGs 1 and 2 plus owl additions. However, under Option 3, LS/OG2s outside a zone of primary marbled murrelet use are treated as Managed Late-Successional Areas (see below).

- Options 6, 8, and 10 protect LS/OG1s plus owl additions and in the primary marbled murrelet zone, LS/OG2s. Total acres in Late-Successional Reserves under these options are less than under Options 1, 2, and 3.

Option 4, which starts with Late-Successional Reserves based on spotted owl protection, adds all LS/OG1s and in the primary marbled murrelet zone LS/OG2s.

Option 9 is an integration of the other approaches because it starts with the Reserves developed under other options, both species-based and old-growth based, and attempts to provide an integrated Reserve system based on the protection of Key Watersheds (see below) that serve multiple purposes.

Under all options except Option 7, LS/OG1s and LS/OG2s, are established as Late-Successional Reserves within a zone of primary use by marbled murrelets to provide for that species' nesting habitat needs until a required recovery plan, being prepared under the auspices of the Fish and Wildlife Service, is complete. Option 7, based on the current land management plans of the agencies, includes no special protection for marbled murrelets and as a result has a relatively low likelihood of providing for murrelets. All options but Options 7 and 8 provide for surveys for and the protection of sites occupied by marbled murrelets found outside Reserves.

All options contain some form of **Riparian Reserves**. Riparian Reserves are intended to address the habitat requirements for fish and other aquatic and riparian species. They also protect water quality, maintain appropriate water temperatures, and reduce siltation and other degradation of aquatic habitat that results from timber cutting on adjacent land. This degradation has been an especially serious product of past road building and cutting practices and is a contributing reason why some fish species are now at risk of extinction. Riparian Reserves also serve as "connectors" that may help species to move among Reserve areas.

Under different options, Riparian Reserves along rivers, streams, lakes, and reservoirs vary in width depending on the size of the body of water and the ecological importance of the **watershed** (literally the area that drains into a particular river or stream). Some options involve the designation of **Key Watersheds**, where riparian protection may be greater than in other locations. Options 1 and 4 provide the greatest amount of riparian protection. Options 7 and 8 provide the least. The rest are in the middle of the range of protection.

The options recognize three categories of water: (1) permanently flowing fish-bearing rivers, streams, lakes, and reservoirs; (2) permanently flowing nonfish-bearing streams, ponds, and wetlands larger than 1 acre; and (3) intermittent streams and wetlands smaller than 1 acre.

All options except Options 7 and 8 incorporate buffer widths that are a minimum of 300 feet on each side of the water for the first category of streams, and a minimum of 150 feet for permanently flowing streams of the second category. Option 7 uses buffers established by Forest Service and Bureau of Land Management plans, which are generally narrower. Option 8 uses 75-foot buffers for the second category.

In addition, all options except Option 7 prescribe minimum buffer widths for intermittent streams and for small wetlands:

- Options 1 and 4 use a buffer width of at least 100 feet for these areas.

- Options 2, 3, 5, 6, 9, and 10 use a 100-foot minimum width for intermittent streams in certain Key Watersheds and 50 foot minimum elsewhere. In Option 9 an effort was made to delineate the Late-Successional Reserves in Key Watersheds.

- Option 8 uses a 25-foot minimum for all intermittent streams and small wetlands.

- Option 7 is based on the plans of the Forest Service and Bureau of Land Management. Those plans do not generally prescribe a minimum buffer for intermittent steams; where they do, the buffer width is usually 25 feet.

Activities Within the Reserves

Late-Successional Reserves. Under Option 1, no timber harvest or salvage operations would be allowed in the Late-Successional Reserves. Under all other options (except Option 8 - see below), some thinning of younger stands would be allowed in the portion of the Reserve that does not currently meet the definition of late-successional forest. The objective of thinning in these options is to accelerate the development of late-successional forest conditions and provide timber volume. However, Option 9 also allows thinning that has a neutral effect on attainment of late-successional forest conditions. Some salvage would be allowed in Late-Successional Reserves in all options but Option 1. All silvicultural treatment and salvage must be approved by an interagency oversight team.

- Options 2, 3, 6, and 10: cutting in Reserves limited to thinning of stands no older than 50 years that have regenerated after timber harvest, and salvage of areas greater than 100 acres where trees have been killed by catastrophic events.

- Options 4, 5, and 7: thinning allowed in stands with tree sizes less than 11 inches diameter at breast height; salvage of areas larger than 10 acres where trees have been killed by catastrophic events.

- Option 8: thinning of stands up to 180 years old and unlimited salvage.

- Option 9: thinnings are allowed in any stand regardless of origin up to 80 years; salvage of areas larger than 10 acres where trees have been killed by catastrophic events.

Riparian Reserves. Initially, under all options but 7, no harvest would be allowed in Riparian Reserves, and agencies would be required to minimize the impact of roads, cattle grazing, and mining activities. Prescriptions under Option 7 are less restrictive. The options that prescribe buffers allow for the adjustment of buffer widths and may allow some timber cutting after completion of watershed assessments.

Activities Outside of Reserves (the Matrix)

Under all options, timber harvesting outside of Reserve areas (i.e., within the Matrix) will meet, at a minimum, the specifications in current plans of the Forest Service and the Bureau of Land Management. However, most of the options incorporate additional guidelines that would apply to timber harvests in the Matrix.

Response to Comment 12-1. Refer to Substantive Issue 2-2, "Harvesting in Late Succession Management Areas", and the response to comment 7-28.

Response to Comment 12-2. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment 12-3. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment 12-4. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

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Letter 13

Lalo Fiorelli
Evy Cambridge
250 Rocky Road
Soquel, CA. 95073
2 September, 1995

Mr. Jonathan Rea
California Department of Forestry and Fire Protection
1416 Ninth Street
Sacramento, CA. 95814

Dear Mr. Rea,

The subject of this letter is the Draft Environmental Impact Report for the General Forest Management Plan for the Soquel Demonstration State Forest. The state clearinghouse number is: 94023033.

My spouse and I own parcels numbered: APN 097-261-25 and APN 097-261-26. The latter parcel having a common boundary with the Soquel Demonstration Forest of approximately 630 feet.

To refresh your memory as to who I am, I am the photographer working with Tom Sutfin on the current timber sale in the forest. I enjoyed meeting you, and especially liked your tastes in the photographs- as they are similar to mine. With regard to the photographs, I am having a set of proof sheets made for you, as requested through Tom. There are seven in all. Six color and one black and white, which were culled from the original fifteen pages you looked at on the light box at Tom's office.

To the matter at hand. During our discussion about the SDF while riding out of the forest, and assuming I understood correctly, each State Demonstration Forest has it's own specific legislation which assigns specific goals and objectives. As related to me, by you, the Soquel SDF has as a primary objective the practice and study of forestry techniques.

These, in our opinion, are excellent and appropriate use for this wonderful forest. I was in the forest at the sale sight yesterday. Much of the cleanup is complete. The road beds are clean and compacted and the forest itself looks "tended." As a matter of fact, except for the color of the freshly cut stumps, it would have been difficult to tell this area was recently logged without prior knowledge. Congratulations! A true show piece.

There are several issues we wish to address within the DEIR's. The first, and definitely most important are fires. We strongly believe there should be **NO FIRES ALLOWED FOR ANY REASON, BY ANYONE!** As you and I discussed, fires are not allowed in most wilderness areas and much of the BLM land in the U.S., and they are in areas with little or no population density. The area surrounding the Soquel SDF, as you well know has had considerable development. 13-1

In other areas of the Santa Cruz mountains where helicopter logging has been done, there has been considerable consternation on the part of peripheral residents regarding noise as well as the danger posed by overflights. We have no other objections to the use of helicopters. As a matter of fact when used in steep areas, we believe they reduce the environmental impact. Per Federal Air Regulations, regarding altitude restrictions, and lateral restrictions, there is a term "Elsewhere Areas". These are areas with low or no population density. While our forest does not fit the definition of an Elsewhere Area due to the population, I give you those parameters: 500 hundred feet laterally from any building or person, and at an altitude from which in the event of engine failure a safe landing may be made. As you can tell, this would make the working out of a flight path, from tree to landing quite critical. As long as there is compliance with the FAR's, we feel that the helo lifting is a good thing. 13-2

Since this forest has as its' legislated purpose to try various forestry techniques as well as provide education in forestry, we believe strongly that this SDF not be developed to encourage access by large parts of the general population. As you said to me, we have enough State Parks in the area. The steepness and fragility of the terrain in this forest seems to suggest a minimum public encroachment. We feel therefore that there should be no: one acre visitors parking lot, additional hiking trails, or anything else that would encourage the general public's use of this particular SDF. 13-3

Further in this regard, we are concerned with the property rights of the surrounding neighbors including trespass violations- which we are already dealing with!

Thank you for taking the time to read this letter. The issues are important to us.

I look forward to your perusal and use of the photographs for the CDF.

Sincerely yours,

Lalo Fiorelli Evy Cambridge

Lalo Fiorelli / Evy Cambridge

Response to Comment 13-1. Refer to Substantive Issue 5-1, "Wildfire Risks".

Response to Comment 13-2. Helicopter operations at SDSF would comply with applicable federal regulations that govern the operation of helicopters. Refer to response to comment 7-44.

Response to Comment 13-3. The public-use facilities included in the project description are considered necessary to meet legislative direction in AB 1965 "to provide a resource for the public. . . as an open environment for the inspection and study of environmental education, forestry practices, and effects thereof". Public use will be controlled to avoid significant adverse impacts on natural resources. Refer to Substantive Issue 2-1, "CEQA Review of SDSF Recreation Master Plan, and 4-2, "Impacts of Public Use and Related Facility Development on Riparian Habitat".

Letter 14

Diane Kleiner
27530 Highland Way
Los Gatos, CA 95030
September 1, 1995

Jonathan E. Rea
California Department of Forestry
and Fire Protection
1416 Ninth Street
Sacramento, California 95814

Dear Mr. Rea:

I attended the August 23, 1995, public hearing on the draft EIR for the Soquel Demonstration State Forest. Having read through its pages prior to the meeting, I had already drawn several conclusions on my own regarding the appropriateness of the alternatives presented. Other concerned citizens from the community brought additional relevant points to the fore.

As a result, I have condensed my main concerns and urge you to address their potential impact in an objective, unbiased manner.

1. Project Goals

The Draft EIR has abandoned the project goals for the SDSF as are stated in AB 1965. For example, section "4660 (d) protect old growth redwood trees" was deleted and other goals added regarding recreation and timber harvesting. The goals of the EIR for the SDSF must be AB 1965 compliant. It's the law. 14-1

2. Riparian Zone

This area should be of primary concern due to the majority of forest wildlife living there as well as the heavy impact logging would have on the fragile banks and water quality. Both a responsible protection plan for wildlife habitats and a specific, detailed erosion control plan are imperative. 14-2

3. Wildfire

The potential for wildfire was made light of in the DEIR. The reference to the "cool, damp" climate of the SDSF was an obvious attempt at deceiving the reader. "Cool and damp" could only accurately be used to describe the SDSF in the winter months when timber harvesting is not practiced because of the wet, 14-3

unsafe, conditions.

Burrell Station is mentioned as the nearest fire protection service to the north entrance of the SDSF. A landslide crossing the road prevents access to the SDSF from this station. Therefore, the nearest fire assistance to this area would be Corralitos Station, located 10 miles away on a winding, narrow road. The fire protection services are obviously quite inadequate to this area of the forest, especially due to the proposed increase in recreation users and the steep wooded slopes and dense brush, which enable fire to spread rapidly. 14-4

4. Unstable Land

The San Andreas Fault runs right through the SDSF at its northern border. Large rotational slides are characteristic in this area. Logging, which disturbs such a delicate environment as this, could only compound the potential for landslide on these over-steepened slopes. 14-5

5. The Uniqueness of the SDSF and Environs

The adjacent area to the SDSF is more densely populated than in other demonstration forests. Out of consideration for the mountain community trespassing, traffic analyses and road ratings, and noise level need to be closely monitored and adjusted to produce as little impact on the citizens as possible.

The existing ambient noise level is 30 dB. Three chainsaws at 600 feet away would produce 65 dB of noise. The DEIR claims this to be within reasonable limits based on what is allowed in typical residential areas. The noise level in an urban residential area differs greatly from a rural residential area . Loud noises are much more disturbing in a tranquil environment, especially when they are amplified by the deep canyon walls. The real issue is to determine the amount of noise disturbance that should be reasonably allowed relative to what is normally here. 14-6

AB 1965 reminds us that "...the Department of Forestry and Fire Protection is authorized to engage in the management, protection, and restoration of state forests...". On this same note David Brower, Chairman of the Earth Island Institute, recommends, "...let us try a little CPR for the earth - Conservation, Protection, and Restoration." I concur.

I strongly encourage you to re-evaluate this DEIR and propose more acceptable AB 1965 compliant alternatives and mitigations. Let us not lose sight of the underlying

goal of responsible forest management in harmony with the environment and the surrounding community.

Sincerely,

Diane Kleiner

Diane Kleiner

Response to Comment 14-1. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives".

Response to Comment 14-2. The ecological importance of riparian areas at SDSF is recognized in the GFMP and the EIR. No heavy-impact logging will occur in the riparian zone and logging will be scheduled to avoid impacts on nesting birds. Refer to Substantive Issues 2-2, "Harvesting in Late Successional Management Areas"; 3-4, "Ongoing Performance Monitoring Program"; and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Zone Vegetation and Wildlife".

Response to Comment 14-3. Refer to Substantive Issue 5-1, "Wildfire Risks".

Response to Comment 14-4. Refer to Substantive Issue 5-1, "Wildfire Risks".

Response to Comment 14-5. Logging disturbance will be planned to minimize the risk of landsliding attributable to timber operations. See Substantive Issues 3-1, "Methodology for Estimating Erosion and Sedimentation Control" and 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment 14-6. Refer to Substantive Issue 7-4, "Methodology and Significance Criteria for Noise Impacts".

Letter 15

STEVEN W. SINGER, M.S.
ENVIRONMENTAL AND ECOLOGICAL SERVICES
218 Nevada Street
Santa Cruz, CA. 95060

RECEIVED
CDF
RESOURCE MANAGEMENT
TIMBER OPERATIONS LICENSING
SEP 05 1995
BY

August 31, 1995

Mr. Jonathan E. Rea
Calif. Dept. of Forestry and Fire Protection
1416 Ninth Street
Sacramento, CA. 95814

SUBJECT: Comments on Draft EIR for the General Forest Management Plan for Soquel Demonstration State Forest

Dear Mr. Rea:

I have reviewed chapters 1,2,3,6, and related portions of the Draft EIR and would like to make the following comments on the adequacy of impact analysis for the proposed project (General Forest Management Plan).

I feel that chapters 3 and 6 need to be rewritten to accurate reflect the risk of landsliding, soil erosion, and downstream flooding associated with the proposed plan and its alternatives. The specific comments to follow will explain why these chapters need to be rewritten.

(1) Chapter 3 significantly underestimates the erosion hazard.

a) Extensive areas of soils proposed for logging in the proposed project have been rated by the Santa Cruz County Soil Survey (S.C.S., 1980) as having a high or very high hazard of erosion from timber harvesting. These ratings have already taken into account the deep litter layers and vegetation cover of the SDSF, and cannot be dismissed.

b) The U.S. Natural Resources Conservation Service (formerly Soil Conservation Service) has stated in their Santa Cruz County Soil Survey (1980) that soil erosion losses greater than about 2 - 3 cubic yards per acre per year for the soils found in SDSF are excessive and will damage the environment. The Cafferata and Poole (1993) study found existing surface erosion rates to be 45.2 cubic yards per acre per year. These values are 15 to 20 times higher than the values recommended by the Natural Resources Conservation Service. This being the case, should not any level of soil disturbance associated with the General Forest Management Plan be considered a significant adverse impact? 15-1

c) Existing and estimated erosion values for the Soquel Demonstration State Forest (SDSF) are based on inappropriate and unjustified modifications to the Cafferata and Poole (1993) study. In an attempt to lower the erosion rates found to exist on the property, the authors

of the Draft EIR have excluded a large gully from surface erosion values claiming that large gullies are rare in forestry activities, and that it could better be classified as a critical erosion site (large erosion event). On hillslopes, critical erosion sites are typically landslides, and the parameters examined in the Cafferata and Poole study for estimating the risk of such events were parameters relevant to landsliding, not gully formation and growth. Gully erosion is a type of surface erosion. Thus it is inappropriate to remove the large gully erosion plot from the databank for harvest plot surface erosion. In addition, I feel that the statement on page 3-15 that "such events [gullies] are rare" is incorrect. Gully erosion is a common form of surface erosion found on timber harvest sites, especially in association with logging roads and landings. Unlike critical erosion sites (large erosion events) as used in the study, the initiation of gullies is not dependant on storms large enough to cause landsliding; and gullies can contribute large amounts of erosion every year for many years, unlike landslides which contribute almost all of their erosion in a single year. Erosion produced by gullies of all sizes should thus be considered as surface erosion. The fact that Cafferata and Pool found one large gully among 26 harvest area plots checked, and one large gully in the 49 road plots checked, does not mean that these data should be excluded from the analysis. It just means that large gullies are relatively less common than other forms of surface erosion. In point of fact, it would have been atypical for them <u>not</u> to have found at least one large gully. Thus the true average level of surface erosion at harvest plots should be 45.2 cubic yards per acre, not 5.6 cubic yards per acre as the Draft EIR, through these manipulations of the data, purports to show. 15-1 [cont.]

c) The method used to annualize erosion levels in the draft EIR is wrong. Page 3-15 justifies the approach used by assuming "that soil destabilized by logging disturbance is eroded primarily by storms sufficiently severe to cause landsliding." No support is given for this statement, nor could there be any. Gullies are capable of producing large amounts of erosion in storms too small to generate landsliding. Likewise, sheet and rill erosion off of roads and landings can be quite extensive in storms that don't produce landslides. The Draft EIR's assumption that harvesting areas will recover after 5 years is not valid for the Santa Cruz Mountains, an area that I am very familiar with, and may not be valid anywhere. The authors of the Draft EIR have apparently ignored what they've seen with their own eyes to make this assumption, for on page 3-20 of the Draft EIR we read, "At SDSF, gully formation related to roads and skid trails was frequently observed during field visits conducted for this EIR. <u>Such conditions are commonly associated with decades-old skid trails</u> (emphasis added)". 15-1 [cont.]

(2) The Draft EIR underestimates the effects of management practices on watershed erosion.

a) The proposed project would include the logging of extremely sensitive areas such as the Amaya Creek watershed. Amaya Creek is the most unstable watershed in SDSF and was a major problem area (contributor of sediment and logs to Soquel Creek) in the 1982 flood, due both to previous logging and natural instability. The Draft EIR 15-2

points out the sensitivity of this area (page 3-3) and elsewhere (page 3-21) points out how roads can increase the risk of landsliding, yet the proposed project would see over 11,000 lineal feet of new road constructed in the Amaya Creek watershed. Adding insult to injury, the Draft EIR says (page 3-23) "No mitigation is required." Clearly this is an unrealistic analysis. There is a significant adverse environmental impact associated with logging below the 1000-ft contour in the Amaya Creek watershed. The lives and property of downstream residents are being placed at risk by attempting to log in this area. There is no reason why logging need occur in this area. This area should be off limits to logging or disturbances of any type. Chapters 3 and 6 need to be rewritten to more accurately present the significant increased risk of flooding associated with logging in the Amaya Creek Watershed. 15-2 [cont.]

b) The Draft EIR on page 3-15 and 3-16 says "Erosion attributable to critical events was assumed to be unaffected by either logging disturbance or recovery from such disturbance". In other words, logging does not cause critical erosion events. This absurd assumption is said by the Draft EIR to based on the work of Rice and Lewis (1991). I doubt very much that Rice and Lewis would want to have anything to do with this assumption!! It is contrary to the concensus of scientific opinion and contrary to the hugh accumulation of scientific literature on this subject. In reality, logging can cause critical erosion events and can trigger or intensify critical erosion events associated with natural instability. To quote one source you are familiar with, "The East Branch of Soquel Creek Watershed was found to have a very high sensitivity to disturbance based on its inherent natural instability" (Cafferata and Poole, 1993). Even other parts of the Draft EIR contradict this assumption. Page 3-8 says, "Human actions can affect erosion rates. Forest management activities (e.g. road construction and logging) often increase soil erosion..." Page 3-21 says, "Timber harvesting in such [unstabilized landslide deposits or very steep] areas increases the risk of landslides..." Thus the model used to predict and estimate erosion hazard of the project and alternatives is fatally flawed and needs to be rejected.

(3) In considering mitigation needs for the proposed project and the alternatives, the effectiveness of the California Forest Practices Act and its rules in reducing soil erosion is over-estimated.

a) The Cafferata and Poole report calls for best management practices and special considerations when proposing logging in the SDSF. Nowhere does it say that the existing California Forest Practices Rules are adequate. As an erosion control consultant, I know that the Forest Practices Rules are not the best practices for timber harvest erosion control. They have not prevented excessive levels of soil erosion/sedimentation from occurring in other areas of the Santa Cruz Mountains that have been logged. The Forest Practice Rules were in effect for nearly ten years prior to the 1982 storm, but as you know, that storm caused massive erosion and flooding. Clearly, more effective measures are necessary if we wish to reduce the damage associated with future large storm events. 15-3

One might argue that much of the damage was caused by natural instability, but even so, the California Department of Forestry and Fire Protection cannot just ignore the situation and do nothing. All landowners, especially government agencies, have the obligation to take reasonable steps to prevent unsafe conditions on their property from adversely affecting those on neighboring or downstream properties. The extremely unstable conditions in the Amaya Creek Watershed pose a special hazard. The Draft EIR fails to discuss this obligation and the adverse impact created by the failure of the Department to recognize and fulfill this obligation. This is a significant adverse environmental impact that is not mentioned in the Draft EIR. 15-3 [cont.]

In conclusion, the Draft EIR is inaccurate and incomplete. Chapter 3 needs to be completely rewritten and the portion of Chapter 6 dealing with flooding also needs to be rewritten.

I've offered these comments in the spirit of constructive criticism in the hope that the impacts of the proposed project can be accurately presented, and that ultimately SDSF General Forest Management Plan will be improved to reflect the needs and concerns of the community while protecting the environmental values of the area. This is the mandate of the legislation which created the Demonstration State Forest, and this is what all residents of the County have the right to expect.

Thank you for the opportunity to comment.

Yours sincerely,

Steven Singer

Steven Singer

Certified Erosion &
Sediment Control
Specialist

Response to Comment 15-1. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment 15-2. Refer to Substantive Issues 3-1, "Methodology for Estimating Erosion and Sedimentation Rates", 3-2, "Significance Criteria for Sediment Impacts", and 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment 15-3. Refer to Substantive Issues 1-3, "Adequacy of the Rules to Mitigate Environmental Impacts" and 3-3, "Project-Level Erosion and Sediment Control".

Letter 16

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TIMBER OPERATOR LICENSING

SEP 05 1995

BY: _____

23535 Skyview Terrace
Los Gatos, CA 95030
August 30, 1995

Mr. Jonathan E. Rea
California Department of Forestry & Fire Protection
1416 Ninth Street
Sacramento, CA 95814

Dear Mr. Rea:

I am writing regarding the EIR on the Soquel Demonstration Forest, to say that I would like to see an overnight horse camp in the Forest, whether it be the existing campsite at Badger Springs or one entirely separate and exclusive to horses. 16-1

Our horse club has been riding in the Forest for nearly 25 years, and prior to it becoming the property of the Forestry, we had many an overnight camp-out there. It would be wonderful if that opportunity were available to us again.

Thank you for your consideration.

Yours truly,

Sally Francy

Sally Francy

Response to Comment 16-1. Refer to the response to comment 10-1.

Letter 17

8/24/95

EDEN BOTANICALS
15994 STETSON ROAD
LOS GATOS, CA 95030
(408) 353-8749

RECEIVED
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TIMBER OPERATOR LICENSING
AUG 30 1995
BY:

home - 16019 Comstock Mill Rd.

Attention Jonathin Rea,

We are writing in regards to the Soquel Demonstration Forest's 3 option plans for "management". Although we have many concerns as environmentalists, I will only emphasized our primary dislike of your options in Recreation. Please do not allow overnight camping! There already are numerous parks to camp in in this county and region. Our family of 4 have 10 acres and a home at the beginning of Amaya Creek trail. There is only forest and more forest, which we love. We are extremely concerned with campers and campfires. Everything we built and accumulated is under threat of a careless campfire. If there isn't any revenue from campers, why the need? We just invested in expensive fire pump and hoses for our own safety. This was prompted largely by our legitamate fear of forest fire. Please scrap your camping plans. 17-1

Sincerely

Neil & Karlan / Amberose
and - Jonch & Malika

Response to Comment 17-1. Development and use of limited camping facilities at SDSF are necessary to meet the legislative direction to provide for public use of SDSF. Refer to Substantive Issue 5-1, "Wildfire Risks".

Letter 18

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE SOQUEL DEMONSTRATION STATE FOREST MANAGEMENT PLAN

Donald W. Alley,
D.W. ALLEY & Associates
P.O. Box 200
Brookdale, CA 95007

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AUG 23 1995
BY: _____

August 20, 1995

Project Description

Page ES-5:

I assert that an alternative not considered meets the intended purpose of the SDSF better than the proposed project or Alternative 2 and should be analyzed in place of Alternative 3. I assert that the stated project purpose in the DEIR is incomplete and is inconsistent with the purpose of the enabling legislation, Assembly Bill 1965 (AB1965). As I interpret AB1965, watershed protection is the primary management goal of the SDSF, with adequate monitoring to insure protection. All other goals should be consistent with watershed protection. This requires that valuable native fish, wildlife and native non-commercial vegetation be protected from logging while allowing a limited amount of logging. The primary purpose of the SDSF is not to provide funds for expenditures outside the forest or to maintain facilities and personnel with a level of timber harvest that degrades fish and wildlife habitat. As will be stated later in my comments, fish habitat improvements are unnecessary if a no cut/ no entry buffer is established along Class I and Class II streams within the SDSF. Permanent recreation and educational facilities will have negative impacts on the fish, wildlife and vegetation resources in the riparian corridors of SDSF and should be avoided. Nowhere in AB1965 is it stated that permanent facilities are necessary to provide enjoyment and education in the SDSF. The term, "recreation," is not even used in AB1965, but the term "enjoyment" is. Recreation should be restricted to day-use only. Educational opportunities should be restricted to interpretive signs, pamphlets and supervised day hikes by

environmental and forestry experts. With the savings from a reduced recreational and educational budget, timber operations may be excluded from areas presently identified for late successional management, as well as below the 1000-foot contour interval along Amaya Creek. Monitoring of surface erosion, stream sedimentation, water quality, stream shading, steelhead habitat quality, and steelhead density within and downstream of the SDSF should be carried out to indicate whether forest management protects the watershed as required by AB1965.

Impact Conclusions

Alternative 2 appeared to be developed such that it was doomed not to satisfy the project goals set out in the DEIR.

18-1

1) How was the harvest cutoff size of 28 inches dbh decided? How much more timber could be harvest if the minimum size of tree cut was increased to 30 inches or 32 inches?

2) What were the actual costs of the different project goals, including the recreation and educational facilities, fishery enhancement and remedial measures to reduce erosion? 18-2

3) How much revenue would be lost if no cut/ no entry buffers were placed along Class I and Class II streams in place of the late-successional management zones? 18-3

Proposed Project and Alternatives

<u>Page 2-1:</u>

The proposed project objectives do not mention Assembly Bill 1965 (AB1965), which was the law that established the state forest. The objective of the project should be to satisfy the goals of AB1965. The goals of AB1965 should appear in the FEIR.

18-4

4) Why have some of the goals of AB1965 been omitted from the project purpose?

AB1965 stated that the SDSF shall provide base-line monitoring.

5) Why does not the DEIR require monitoring to verify that the asserted lack of significant impacts will be confirmed? 18-5

AB1965 allowed a limited amount of commercial timber operations in the SDSF to sustain all costs of operation and provide income for research and educational purposes. The long term goal of the management plan to cut 65% of the forest growth goes far beyond this. 18-6

6) Why did not the DEIR consider an alternative that meets the objectives of AB1965?

7) Is not the DEIR insufficient in not analyzing reasonable alternatives to the proposed project as required by CEQA?

The DEIR included Alternative 3, which would clearly be illegal based on AB1965, and analyzed it. AB1965 requires that the forest be managed to provide watershed protection for local communities. Clearly under Alternative 3, the removal of hardwood stands and conversion to conifer stands may result in significant erosion. The conversion to a younger, more open monoculture tree stand through management is inconsistent with protection of the watershed, plant diversity and wildlife diversity typically found in old growth redwood forests 18-7 containing well developed riparian hardwood forests. Clearly under Alternative 3, the use of clear-cutting of trees will not protect the watershed because the risk of massive erosion and landsliding would be greatly increased, particularly in Amaya Creek canyon. Landsliding with associated log-jamming downstream in Soquel Village would be severely jeopardize public safety during flood events. Clearly under Alternative 3, the introduction of hunting would be a safety hazard to surrounding residents and hikers in the SDSF. CEQA requires that reasonable alternatives be analyzed. Alternatives that are completely contrary to the tenants of AB1965 are unreasonable and should not have been considered. The proposed project should have been brought into consistency with AB1965 by eliminating from the

Management Plan the long-term logging rates of 65% of forest-wide growth. Since these elevated rates are planned, the DEIR should have analyzed their impacts. 18-7 [cont]

Page 2-4:

Throughout the DEIR, the project description and associated analysis of impacts refer to short term management goals as described in the Management Plan. The DEIR fails to address the impacts of the long term management goals.

8) Is not the DEIR incomplete in that it does not assess impacts of long term management goals? 18-8

For example, the discussion of late-succession management areas along the streams in the forest is relevant to only the first 5 years of management. The Management Plan states that after that period "appropriate harvest levels" will be determined.

9) What will be the long term impacts of "appropriate harvest levels" to be undertaken in 5 years in the late-successional management areas? Will another EIR be performed after 5 years?

The DEIR is incomplete until these levels can be specified and analyzed for impacts. Analyses of impacts to birds such as the yellow warbler, living in the riparian corridor, and steelhead in the streams assumes a 600-foot-wide late-successional riparian management area. However, the Management Plan only insures this type of management for 5 years. The DEIR is only pertinent to the first 5 years. Therefore it is incomplete. 18-9

10) Is not the DEIR incomplete because it does not assess the impacts of the long term management goal of harvesting 65% of forest wide growth? 18-10

11) What will be the impact to fish, wildlife and downstream residents of harvesting 65% of forest wide growth? 18-11

Under the proposed project, the DEIR analyzed the impacts of the

short term harvest level of 20 to 30 percent of forest wide growth. However, the long term harvest level is projected to be 65% of forest wide growth (page 2-5 in the DEIR). The DEIR does not address the potential impact of this increased harvest level. 18-11

Page 2-11:

12) Are the methods specified for fish habitat improvement going to provide significant cost-effective fishery enhancement?

The proposed project's fish habitat improvements and riparian corridor management are inconsistent with the latest watershed management techniques of riparian corridors and streams in relatively undeveloped headwater reaches of coastal streams. Vortex weirs are used primarily as hydraulic control structures in settings where major changes in stream morphology are attempted. They would likely be ineffective in forming significant pool habitat in East Branch Soquel Creek, given the high sediment and bedload movement. Furthermore, there are sufficient cobbles present to form natural hydraulic controls. These vortex weirs may de-stabilize the stream morphology if placed in inappropriate locations. Placement of log deflectors in streams is only necessary when there is a shortage of natural recruitment of woody debris. This is not the case in the SDSF. Natural woody debris, if not removed by forest managers, will provide adequate amounts of woody debris. Furthermore, the longevity of artificially placed log deflectors in Santa Cruz County is very short-lived because of the periodic flood flows that occur. Their short-term longevity makes them very cost ineffective. The best method to protect pool habitat is to minimize future erosion and landsliding along with remediation of existing gullies and landslides. 18-12

13) Why does not the DEIR identify the potential adverse impacts of proposed management activities in late-successional management zones (riparian corridors and around wetlands) to such special status species as steelhead trout, red-legged frog, yellow-legged frog, western pond turtle and yellow-warbler. 18-13

14) Why does not the DEIR recommend no cut/ no entry buffers along Class I and Class II streams and surrounding wetlands? 18-14

15) Is not the DEIR in error when it concludes that management activities within the riparian corridor and around wetlands will have no significant negative impact? 18-15

16) Are not the adverse impacts of late successional management zones along streams and around wetlands unmitigatible since any logging activities within intact riparian corridors will reduce their habitat value? 18-16

State-of-the-art riparian forest and wetland management guidelines entail instituting no cut/ no entry buffers along streams and around wetlands (Gregory and Ashkenas 1990). Such guidelines were delineated in my report provided to Thomas Sutfin (SDSF Forest Manager) (D.W. Alley & Associates 1992). I have enclosed summary tables for management of riparian zones provided by Gregory and Ashkenas (1990). Entry into this buffer zone will disturb natural biological and geomorphic processes. 18-16 [cont]

State-of-the-art forest practices developed for federal forests include these no cut/no entry buffers in many of the forests of Region 5. These buffer zones will protect riparian corridors in the Mendocino, Klamath, Shasta/Trinity and Six Rivers National Forests. A minimum protective buffer of 300 feet on either will be required on either side of streams along all rivers and their major tributaries. That buffer width would be widened depending on local conditions effecting sediment run-off. For example, the entire inner gorge of the Smith River is a no cut/no entry buffer zone. 18-16 [cont]

Cutting of native riparian hardwood trees with replanting of conifers in the buffer zone will alter the natural habitat conditions for fish, amphibians, reptiles, birds mammals that are adapted to natural riparian corridors. Any logging activities in the riparian corridor of streams and around wetlands (springs and sag ponds) during the bird breeding period of the year will interrupt the birds' nesting behavior and reduce reproductive success. Any logging activities around wetlands containing 18-16 [cont]

western pond turtle habitat may cause mortality of dormant or nesting turtles. In a study by the U.S. Fish and Wildlife Service on San Simeon Creek in San Luis Obispo County (Rathbun et al. 1993), western pond turtle (called southwestern pond turtle in the DEIR) traveled an average distance for dormancy of 43.5 meters (143 feet), ranging from 2 to as far away as 450 meters (1476 feet) for an average of 22.3 days. Pond turtle nesting attempts occurred an average of 56.3 meters (185 feet) from water, ranging from 15 to as far away as 171 meters (561 feet) for one to two days. Any felling of trees in riparian zones and around wetlands will have adverse effects on the animals that inhabit these areas. Riparian and wetland areas require no intrusive management activities and will provide greatest fish and wildlife habitat if left alone. 18-16 [cont.] 18-16 [cont.]

Geology, Soils and Water Quality

Page 3-15:

17) On what basis did the DEIR conclude that rarely do gullies result from disturbances related to forest management? 18-17

18) What is the probability of gully formation on forested land due to forest activities (including road construction and poor drainage) compared to natural processes on nonforested land? 18-18

19) With the gully observed on one of the 26 harvest-area plots eliminated by the EIR as surface erosion, how was it accounted for in Table 3-3 regarding Cafferata and Poole's assessment and the current assessment? 18-19

20) Should not the estimate of 45.2 be in the first column for erosion rate of forest land recently harvested for the 1993 assessment? 18-20

The reduction to 5.6 was decided by the preparers of the DEIR and not by the 1993 researchers.

The gully in the harvest plot appeared to be completely deleted

from the estimates of erosion rates. This deletion lead to an erroneously low estimate of erosion rates on harvest-area plots. 18-20 [cont.]

21) How was it decided that erosion rates on forest land not recently harvested were not due to previous harvest practices? 18-21

22) Was it assumed that forest land not recently harvested had fully recovered from past abuses in the DEIR analysis of surface erosion? Was this realistic? 18-22

23) How recently were the forest-area plots logged in the Cafferata and Poole study? 18-23

24) If the forest-area plots were logged more than 5 years previous to the Cafferata and Poole study, then would not the measured erosion rates be lower estimates than actually occurred in the years immediately after logging? 18-24

25) How was it determined that surface erosion was assumed to occur primarily during storms that caused landsliding? 18-25

26) Even though more surface erosion may occur during severe storms that may cause landsliding, is not the assumption that surface erosion will occur only every 5 years an underestimate of surface erosion? 18-26

27) How was it determined that harvest areas would recover from disturbance after 5 years? 18-27

28) Would not the time required for recovery from logging vary considerably by site and depend on how soon after harvest a heavy storm event occurs? 18-28

If a heavy storm event occurs the first winter after logging, significant erosion from tractor and skid trails, etc., may occur and greatly delay recovery.

29) Stability of the slopes, the percent slope, soil types, etc., would affect time of recovery after timber harvest, would they not? 18-29

The assumptions used in the DEIR regarding the annualizing of erosion coefficients were unrealistic. It is inaccurate to assume that surface erosion would occur from logging only every 5 years. Surface erosion most definitely occurs during storms that do not cause landsliding. When gullies exist, they transport soil from surface erosion during smaller storm events than would necessarily cause critical events such as landsliding. Soquel Creek becomes turbid from surface erosion every winter after storm events. It was inappropriate to divide Cafferata and Poole's erosion levels by 5 to annualize erosion rates. 18-29 [cont.]

Pages 3-15 and 3-16;

The statement that "Erosion attributable to critical events was assumed to be unaffected by either logging disturbance or recovery from such disturbance" appears unsubstantiated. To the contrary, the DEIR stated that Cafferata and Poole observed a large gully on one of the harvest plots, and the DEIR categorized it as a critical event. 18-30

30) Was not the gully observed by Cafferata and Poole as noted in the DEIR either caused or enlarged by timber harvest?

Logging causes soil compaction and disturbance of the duff layer to expose bare soil. Skid trails can easily become gullies. Percolation of rain water is reduced and surface runoff is increased.

31) Does the DEIR claim that increased surface runoff across soil disturbed by logging will not cause new gullies or increase the size of existing ones? 18-31

The DEIR's logic is faulty when it assumes that logging disturbances will not affect the occurrence of critical erosion events based on findings that site conditions are more important than management history in determining the erosional consequences of logging. The importance of site conditions does not negate

the acceleration of erosion brought on by logging. A steep, unstable site will erode more after logging than a flat, stable site. The consequence of logging is still erosion on the steep site. 18-31 [cont.]

32) If logging disturbance from selective harvest has no effect on critical erosion events, then why do foresters use cable logging in some situations and tractor logging in other situations? 18-32

Cable logging is often used to lessen the impact of timber harvest with regard to soil erosion. If management history makes no difference to soil erosion rates, then why not use tractor logging everywhere, no matter how steep or unstable the slopes?

It appears that the DEIR preparers attempted to under-estimate the erosional consequences of selective harvests. In a letter to Thomas Sutfin dated March 15, 1994, Steve Singer (Erosion Control Specialist with personal experience in assessing erosion in the SDSF) stated that no disturbance of any type should be allowed in the Amaya Creek drainage below the 1000-foot contour interval on the USGS map due to its instability. He stated that this restriction in timber harvest operations was necessary to protect downstream residents from the resulting impacts of landsliding. Yet the proposed project will involve logging in these sensitive areas.

33) Why has not the DEIR identify the potential adverse impacts of timber harvest in the steep Amaya Canyon? 18-33

<u>Page 3-21:</u>

It is stated that under the proposed project, 75 acres per year would be harvested and 0.58 miles of road would be constructed. 18-34

34) Are the annual rates of harvest and road construction based on the short-term management parameters or the long-term intended harvest rate?

35) If calculated acres to be harvested and lengths of road to be 18-35

constructed are based on only the short-term activities, the impact analysis in the DEIR is incomplete with regard to predicting level of erosion from long-term levels of harvest, is it not? 18-35 [cont.]

The impact analysis of erosion in the East Branch watershed does not differentiate between the East Branch Soquel Creek drainage and the Amaya Creek drainage. However, the steepness of slopes and slope instability are greater along Amaya Creek as evidenced by the amount of landsliding observed post 1982 and 1983 rainy seasons (Singer and Swanson 1984). Mr. Singer has recommended that due to these factors, no logging should occur below the 1000 foot contour line in Amaya Creek Canyon. 18-36

36) Why is it that the DEIR assumes that logging operations will have the same impact on erosion in the Amaya Creek drainage as elsewhere in the SDSF, given Mr. Singer's concerns.

Fisheries

<u>Page 4-15:</u>

What appears to be a debris barrier to steelhead migration during low summer flow conditions usually rearranges itself at higher flows or offers passage opportunities unforeseen at lower flows. 18-37

37) Did the observers sample for steelhead above the log jams that were observed on Amaya Creek in order to confirm that the jams stopped migration?

38) Did the observers actually note the failure of adult steelhead to migrate past the log jams on Amaya Creek? 18-38

I have found that boulder or bedrock falls in high gradient reaches of headwater streams are what primarily limit fish access and not woody debris.

I find that forest managers use the excuse of enhancing fish passage for the wholesale removal of valuable woody debris that

provides valuable fish cover. Their real reasons for removing the woody debris is often to prevent what they perceive as excessive bank erosion or future imagined bank erosion that may or may not occur. I strongly disagree with the DEIR conclusion that fish passage could be improved in any significant way by selective removal of debris jams at or outside of SDSF. Removal of debris jams, however, will have significant negative impacts on steelhead rearing habitat. 18-38 [cont.]

Page 4-15;

Statements about blockages of fish passage at the mouth of Soquel Creek are inaccurate, indicating a lack of knowledge of how the sandbar and lagoon are managed by the City of Capitola. Because of the way that the flume is managed at the mouth of Soquel Creek, there is no significant delay of adult migration of salmonids up Soquel Creek in the fall or out-migration of salmonid smolts in the spring. I refer the preparers of the DEIR to the Soquel Creek Lagoon Management Plan (Habitat Restoration Group 1991) and 4 years of monitoring reported by myself (D.W. Alley & Associates 1992; 1993; 1994; 1995). Adult steelhead have been confirmed to migrate up through the flume before November 15. The flume allows smolt passage to the ocean until at least July 1, even during drought. The flume more than adequately insures a sufficient period for out-migration of smolts. 18-38 [cont.]

Page 4-18;

The assertion in the DEIR that stream shading of 50-75% is optimal for salmonid streams is false for small central coast steelhead streams. Because of the very low flow conditions present in small watersheds such as Soquel Creek, stream shading of 65% or greater (as measured by canopy closure) is generally necessary to maintain sufficiently cool water for salmonids in summer, based on existing conditions in Santa Cruz County (Alley 1995). As one progresses upstream in each watershed, the shading generally increases to above 75%, which would likely be optimum in the SDSF. 18-38 [cont.]

Page 4-21;

39) How was the estimate of a 1% increase in total erosion in the watershed determined for the DEIR? Was this determined by Jones and Stokes Associates or CDF? 18-39

40) In order for the DEIR to be an independent and unbiased analysis, can the DEIR preparer rely on estimates provided by the project proponent? 18-40

41) Is an increase in total erosion in the watershed a meaningful index for ascertaining project impacts to localized fish habitat in finite locations within the watershed? 18-41

Intensive logging may cause localized sources of erosion that may cause localized sedimentation of fish habitat. This index of increase in total erosion has little connection to localized habitat impacts. AB1965 requires that baseline monitoring be done to evaluate the impacts of logging practices.

42) How was the assertion that promoting a higher proportion of conifers in the riparian zone by cutting hardwoods would be a positive management goal? 18-42

The planting of conifers with the intention of creating large woody debris is insufficient justification for reducing habitat provided by riparian hardwoods. The primary source of coniferous woody debris in Amaya Creek and downstream is probably landsliding anyway.

The riparian zone should be expected to have a high proportion of hardwoods trees. The riparian hardwoods are best adapted to rapid regeneration after flood events. They are the species used for erosion control because of their rapid growth. In observing the riparian zone along the drainages of the SDSF, there appeared to be no excess of riparian hardwood trees. Logging near Class I, Class II, ephemeral and intermittent streams damages nutrient cycling, removes sources of large woody debris from old growth riparian trees vital for habitat and stream channel stability, and greatly increases sedimentation.

Riparian hardwoods provide valuable bird nesting sites and habitat for insects that birds feed upon. The leaves of deciduous riparian trees form the food base for aquatic insects that provide food for steelhead and other fishes. The deciduous nature of hardwoods in the riparian corridor allows valuable light penetration in the early spring and late fall when streamflow is higher, allowing greater algae production at a time when stream temperature is cool. Thus, insect production and food organisms for steelhead may increase at these times. Early spring is the most important growth period for juvenile steelhead in these small coastal drainages. For these reasons, an artificial increase in the proportion of conifers will have a significantly adverse impact on steelhead. 18-42 [cont.]

The overwhelming primary source of cover for juvenile steelhead in central coast streams is in pools with undercut banks under live root wads of upright or recently fallen riparian hardwoods growing immediately above the undercut space. Lateral scour pools are created by these rootwads in the majority of cases where there is a healthy riparian hardwood forest (D.W. Alley & Associates 1995). The cutting of riparian hardwoods will reduce this cover, to the detriment of the steelhead population. Native riparian hardwoods such as alders, big leaf maples and sycamores reach sufficient size to provide large woody debris if allowed to grow. 18-42 [cont]

Steelhead do perfectly well and maintain very high population densities of juveniles in drainages without any conifers present in their riparian corridors. Drainages such as the Carmel River, much of the Pajaro River before the drought, and many drainages south of the Big Sur River are good examples. 18-42 [cont]

43) Is the real motivation for removing valuable riparian hardwoods and replacing them with conifers to provide a source of large woody debris in streams or to increase commercially harvestable conifers in the riparian corridor? 18-43

I expect no significant reduction in large woody debris as a result of timber harvest outside the riparian corridor in the SDSF, so long as no cutting is done within the riparian corridor

that includes the 100-year floodplain. 18-43 [cont.]

As stated earlier in my comments, there should be no cut/no entry buffers instituted on all Class I and Class II streams in the SDSF. State-of-the-art forest practices developed for federal forests include these no cut/no entry buffers in many of the forests of Region 5. These buffer zones will protect riparian corridors in the Mendocino, Klamath, Shasta/Trinity and Six Rivers National Forests. A minimum protective buffer of 300 feet on either will be required on either side of streams along all rivers and their major tributaries. That buffer width would be widened depending on local conditions effecting sediment run-off. For example, the entire inner gorge of the Smith River is a no cut/no entry buffer zone.

Page 4-22:

44) How was the estimate that only 5% of the overall stream area was accessible to recreationists? 18-44

There is a road that parallels the riparian corridor of East Branch Soquel Creek for several miles. Trails leading from that road to the creek are numerous. Once a fish poacher reaches the streambank, he may wade up and downstream or walk along the bank at will. Other recreationists may wander along the stream edge for some distance, as well. The 5% estimate appears very low.

45) Are recreational trails planned for the riparian corridors of the SDSF? If so, what will be their impact? 18-45

Increased recreational use of the SDSF will likely degrade fishery habitat and increase steelhead mortality due to poaching.

Vegetation and Wildlife

Page 5-22:

46) Under the proposed project, how was the estimate of 10,700 visitor days per year determined over the next 10 years? 18-46

The factors influencing recreational use are given, but no details are provided for how numerical results were determined. The predicted use of SDSF is significantly less than use of Nisene State Park (94,000 visitor days in 1992-93) nearby. The 10,700 visitor day estimate for SDSF in 10 years appears very low. Once the SDSF becomes better known for its recreational opportunities, recreational use may increase rapidly to approach use in Nisene State Park. Recreational development in the riparian corridor will cause localized habitat degradation. 18-46 [cont.]

47) In an effort to minimize and avoid adverse impacts to riparian wildlife habitat, why would any recreational development be planned in the riparian corridor? 18-47

48) Should not the DEIR state that any development in the riparian corridor may have potentially adverse impacts? 18-48

Ample evidence of adverse impacts of recreational facilities in riparian corridors in local state parks is available. Henry Cowell State Park is a good example. Picnic areas and trails exist in the riparian corridor there. Any fallen trees are cut up and removed from picnic areas and trails. Riparian understory plants have been reduced and steep trails used by horses during the wet season are serious sources of gullying and erosion.

49) Should not the DEIR state that trails used by horse traffic in the winter may cause significant gullying and erosion? 18-49

50) How was it that the DEIR could adequately assess impacts of recreation and educational facilities without a map indicating the future locations of such facilities and their projected size? 18-50

I assert that the proposed project (the Management Plan) requires greater details regarding recreational and educational facilities before adequate impact analysis may occur.

51) Why does not the impact analysis for vegetation does not consider the potential impacts to the riparian forest caused by cutting of riparian hardwoods and the planting of conifers? 18-51

52) Will not the eventual increased shading created by planted conifers reduce the plant species diversity of the riparian corridor and reduce riparian tree density, and is this not a significant adverse impact? 18-52

53) Why is not there a plant species list for the SDSF in the DEIR which states their habitat association? 18-53

Plant species lists are standard requirements of CEQA documents.

Page 5-29:

54) Under the proposed project, how can it be assumed that riparian wildlife habitats along Class 1 watercourses will be protected when the Management Plan calls for cutting of riparian hardwoods and planting of conifers? 18-54

55) Will not the cutting of riparian hardwoods and replacing them with conifers adversely impact yellow warblers and the many other birds that nest in riparian hardwood trees? 18-55

56) Which wildlife species listed in Table 5-2 either nest and/or forage in the riparian corridor or are associated with other wetlands?

Table 5-2 should have another column which states the habitat association of each species. 18-56

Without question, the most significant wildlife habitats of the SDSF are the riparian corridors of Soquel Creek and its tributaries, the various ponds and the springs. Soquel Creek, itself, with its riparian corridor is by far the most significant feature contributing to bio-diversity in the SDSF. Approximately 90% of the animal species in the SDSF probably inhabit the riparian corridors.

Yellow warblers require riparian hardwood species, particularly a dense willow understory. Amphibians and mammals living in the riparian corridor require a dense understory commonly found under

deciduous riparian hardwoods. Replacement of hardwoods with conifers will reduce the understory plant cover. 18-56 Cont.

57) Will not the reduction in understory in the riparian corridor brought on by cutting of riparian hardwoods and planting of conifers adversely impact red-legged and yellow-legged frog? 18-57

58) How much riparian hardwood cutting is planned under the Management Plan? 18-58

59) Is not a detailed management guideline regarding the proportion of the riparian forest to be cut necessary before the DEIR can assert that there will be no significant impacts from this activity? 18-59

60) What period of the year would cutting of trees in the riparian corridor occur? 18-60

61) Will cutting there coincide with the nesting season of birds? 18-61

62) Should there not be a mitigation to limit logging operations in the riparian zone to after the bird breeding season, probably until after July 1, to prevent disruption of nesting? 18-62

The DEIR fails to address the potential impacts of timber harvest by encouraging the increase of wildlife species atypical for a closed canopy redwood-tanoak forest. Wildlife species that prefer more open areas rather than a moist, shaded, closed canopy will be favored in localized areas of timber harvest. This would especially be the case in the 0.5 acre plots where hardwood stands are intended to be clear cut under the Management Plan.

63) Because animals such as western pond turtle, western toad and assorted newt species use upland areas during portions of their life cycle, will not they be adversely impacted in harvested areas, thus requiring some mitigation? 18-63

The SDSF should be managed as a maturing forest so as to regain the wildlife resources and species characteristics of an old growth forest. Small clear-cuts of hardwoods and general

thinning of conifers may attract species which prefer forest openings and brushy vegetation. These species, such as towhees, Bewick's wren and scrub jay are very common species in the Santa Cruz Mountains and add nothing significant to the biodiversity of the SDSF. 18-63 [cont.]

64) Will not the population of feral pigs be increased as the forest canopy is opened from selective harvest, to the detriment of native wildlife species that rely on springs and seeps which will be disturbed by wallowing of feral pigs? 18-64

65) Should not there be monitoring of the feral pig population to confirm the DEIR conclusion that timber harvest will have no significant impact on wildlife habitat? 18-65

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United States
Department of
Agriculture

Forest Service

Pacific
Northwest
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1990

Riparian Management Guide

Willamette National Forest

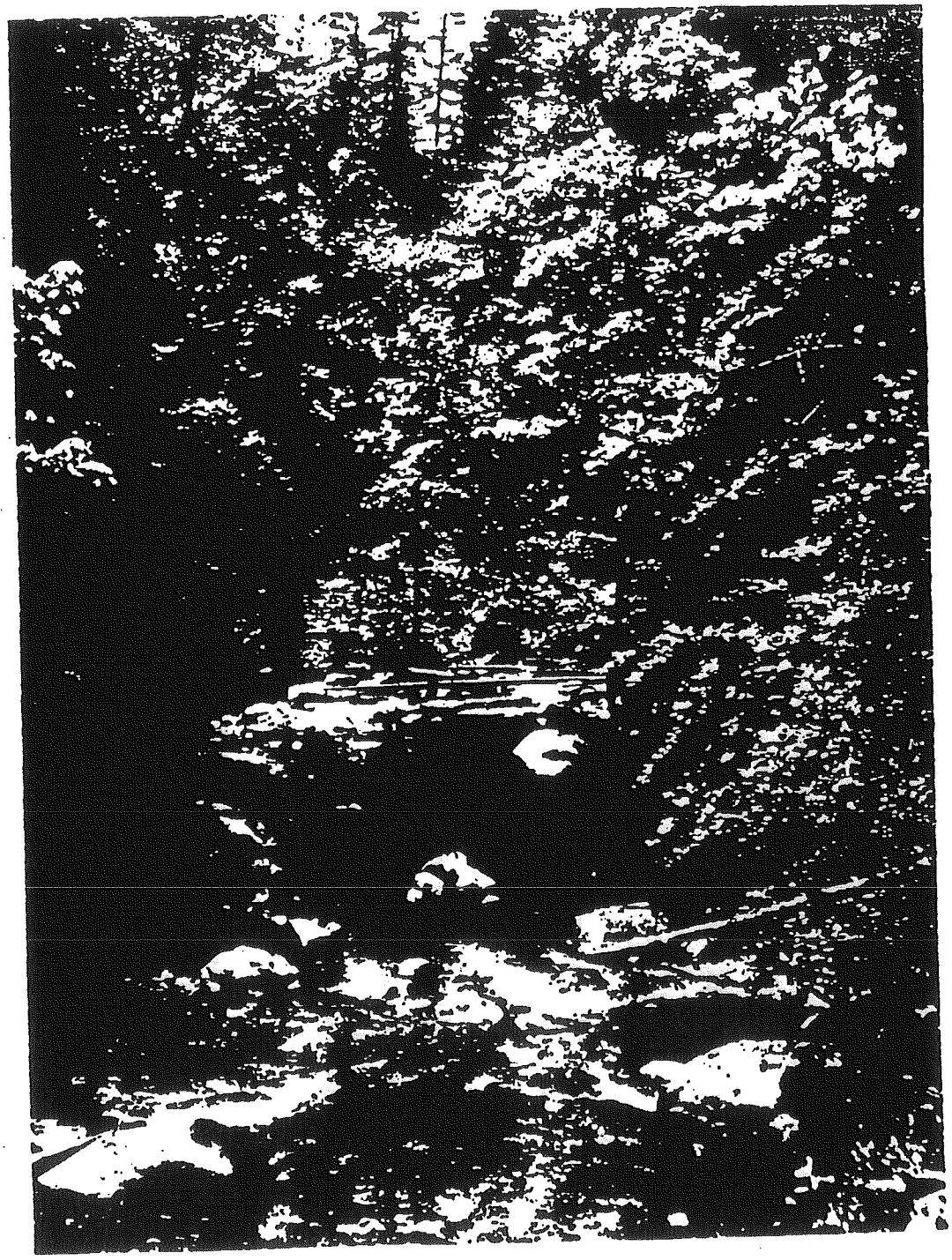

Table 5a. **Perennial Streams and Rivers:** Summary of standards and guidelines for riparian management zones.

Riparian Management Guidelines	Class I	Class II	Class III	
			Stable[1]	Moderate[1] & Unstable
Location				
Range of width from active channel[2]	150-400 ft	100-200 ft	50-100 ft	75-125 ft
Average width[3]	200 ft	100 ft	75 ft	100 ft
Objectives				
Extent of 100-yr floodplain within RMZ[4]	100%	100%	100%	100%
Temperature[5]	M & E	M & E	M & E	M & E
Input of woody debris	100%	90%	75%	90%
Input of terrestrial food resources	100%	100%	100%	100%
Bank stability	100%	100%	100%	100%
Operations				
Overstory vegetation remaining within RMZ	100%	100%	100%	100%
Understory vegetation remaining within RMZ	100%	100%	100%	100%
Directional falling along RMZ	Yes	Yes	Yes	Yes
Yarding suspension over banks	Full	Full	Full	Full
Yarding and line corridors	Yes	Yes	Yes	Yes
Stream cleanout[6]	No	No	No	No
Salvage within RMZ[7]	No	No	No	No

1 Stability ratings. See Appendix II for soil types and slope stability analysis.
2 These riparian widths represent the horizontal distances commonly required to meet management objectives.
3 These widths represent the expected averages and were used in the FORPLAN model for the Forest and Resource Management Plan.
4 100-yr floodplains are assumed to be less than 400 ft wide on a single bank. Where floodplains extend beyond 400 ft, specific site conditions will be evaluated relative to the Executive Order on Floodplain Development.
5 Objectives for shade are to maintain or enhance water temperatures. At a minimum, 80% of the existing shade will be maintained.
6 Stream cleanout is permitted immediately upstream of culverts.
7 Salvage within an RMZ after catastrophic events should be considered only to restore degraded riparian habitat and benefit riparian-dependent resources. Evaluate specific site conditions.

Table 5b. **Intermittent and Ephemeral Streams:** Summary of standards and guidelines for riparian management zones.

Riparian Management Guidelines	Class IV				
	Intermittent			Ephemeral	
	Stable[1]	Moderate[1]	Unstable[1]	Stable[1] & Moderate	Unstable[1]
Location					
Range of width from active channel[2]	0 ft	25-50 ft	25-100 ft	0 ft	25-100 ft
Average width[3]	0 ft	30 ft	50 ft	0 ft	50 ft
Objectives					
Provide floodplain functions[4]	No	No	No	No	No
Temperature[5]	M & E	M & E	M & E	No	No
Input of woody debris	0%	20-40%	30-50%	0%	0%
Input of terrestrial food resources	None	Partial	Partial	None	Partial
Bank stability	Locally Reduced	100%	100%	Locally Reduced	100%
Operations					
Overstory vegetation remaining within RMZ	None	Partial	All	None	Partial
Understory vegetation remaining within RMZ	Partial	Partial	All	Partial	Partial
Directional falling along RMZ	Yes	Yes	Yes	No	Yes
Yarding suspension over banks	Full-Partial	Full-Partial	Full	Partial	Partial
Yarding and line corridors	Yes	Yes	Yes	Yes	Yes
Stream cleanout[6]	No	No	No	No	No
Salvage within RMZ[7]	No	No	No	No	No

1 Stability ratings. See Appendix II for soil types and slope stability analysis
2 These riparian widths represent the horizontal distances commonly required to meet management objectives
3 These widths represent the expected averages and were used in the FORPLAN model for the Forest and Resource Management Plan.
4 Intermittent and ephemeral channels are assumed to have no floodplains.
5 Intermittent channels may flow during summer when stream temperatures are critical. Consider retention of vegetation for shade.
6 Stream cleanout is permitted immediately upstream of culverts.
7 Salvage within an RMZ after catastrophic events should be considered only to restore degraded riparian habitat and benefit riparian-dependent resources. Evaluate specific site conditions.

Table 5c. **Lakes and Wetlands:** Summary of standards and guidelines for riparian management zones.

Riparian Management Guidelines	Lakes	Wetlands
Location		
Range of width from mean high water[1]	500-700 ft	150-600 ft
Average width[2]	600 ft	N/A
Objectives		
Extent of 100-yr floodplain within RMZ	100%	100%
Temperature[3]	M & E	M & E
Input of woody debris	100%	100%
Input of terrestrial food resources	100%	100%
Bank stability	100%	100%
Operations		
Overstory vegetation remaining within RMZ	100%	100%
Understory vegetation remaining within RMZ	100%	100%
Directional falling along RMZ	Yes	Yes
Yarding suspension over banks	Full	Full
Yarding and line corridors	Yes	Yes
Debris cleanout	No	No
Salvage within RMZ[4]	No	No

1 These riparian widths represent the distances commonly required to meet management objectives.
2 These widths represent the expected averages and were used in the FORPLAN model for the Forest and Resource Management Plan. Wetland areas have not been delineated, and average widths were not established.
3 Objectives for shade are to maintain or enhance water temperatures. At a minimum, 80% of the existing shade will be maintained.
4 Salvage within an RMZ after catastrophic events should be considered only to restore degraded riparian habitat and benefit riparian-dependent resources. Evaluate specific site conditions

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Response to Comment 18-1. The 26 inch diameter limit for harvesting under Alternative 2 was selected to ensure retention of late-succession habitat. No analysis was conducted of impacts on timber supply of variations in the diameter limit; the feasibility of achieving the harvest rate proposed for Alternative 2 consistent with a 26 inch diameter limit was determined based on the abundance of timber in the 12-24 inch dbh class at SDSF.

Response to Comment 18-2. Refer to Substantive Environmental Issue 1-1, "Timber Revenues and Operational Costs".

Response to Comment 18-3. Refer to Substantive Issue 1-1, "Timber Revenues and Operational Costs".

Response to Comment 18-4. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives".

Response to Comment 18-5. Refer to Substantive Issue 3-4, "Ongoing Performance Monitoring Program" and Appendix A to this document.

Response to Comment 18-6. Refer to Substantive Issue 1-1, "Timber Revenues and Operational Costs".

Response to Comment 18-7. The GFMP calls for the gradual harvesting and replanting with redwoods and Douglas-firs hardwood stands on approximately 100 acres within SDSF. Approximately 16 acres would receive such treatments over the next decade under the proposed project; approximately 32 acres of hardwoods would be removed over the next decade under Alternative 3. The accelerated removal of hardwoods under Alternative 3 will not result in substantially elevated erosion rates because of the environmental protection measures (e.g., review and approval of disturbance of unstable areas by a registered engineering geologist) incorporated into the alternative.

Refer also to Substantive Issues 1-4, "Reasonable Range of Alternatives", 1-5, "Impacts of Implementing the Proposed Long-Term Increase in Harvest Rate", and 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comments 18-8 and 18-9. The harvesting restrictions specified for late-succession management areas are planned to be implemented indefinitely. No increase in harvesting intensity will occur in these areas over the long-term.

Response to Comments 18-10 and 18-11. Refer to Substantive Issue 1-5, "Impacts of Implementing the Proposed Long-Term Increase in Harvesting Rate".

Response to Comment 18-12. Although the commenter is correct in stating that the most effective method of aquatic habitat restoration is by reducing erosion and landsliding through remediation of existing roads, gullies, and sediment deposits, the objective of aquatic habitat restoration would be achieved more rapidly by supplementing such remediation with well-designed instream habitat enhancement projects. Such projects (e.g., vortex rock weirs) are the most effective means of increasing the extent and quality of pools, which are key limitations on anadromous habitat in the East Branch. Rock weirs have consistently been demonstrated as an effective technique for maintaining sediment transport capacity and low width-to-depth ratios in high-bedload streams. Proposed instream structures will be reviewed by DFG staff and a professional fluvial geomorphologist before installation.

Response to Comment 18-13. The effects of proposed management activities on steelhead trout, red-legged frog, yellow-legged frog, western pond turtle, and yellow warbler are described in Chapters 4 and 5, "Vegetation and Wildlife" and "Fisheries".

Response to Comment 18-14. Refer to Substantive Environmental Issue 2-2, "Harvesting in Late Successional Management Areas".

Response to Comment 18-15. The EIR's conclusions (including revisions presented in Chapter 4 of the final EIR) regarding the significance of impacts are based on a programmatic analysis of SDSF using the best available information. Their validity will be evaluated through an ongoing monitoring program (refer to Substantive Issue 3-4 and Appendix A). In addition, the potential impacts of subsequent projects will receive site-specific evaluation.

Response to Comment 18-16. Potential impacts of planned activities on riparian resources will be avoided or reduced to a less-than-significant level by proposed environmental protection measures. Refer to Substantive Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife and the response to comment 7-36 above.

Response to Comments 18-17 through 18-32 . Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment 18-33. Refer to Substantive Issue 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment 18-34. Refer to Substantive Issue 1-5, "Impacts of Implementing the Proposed Long-Term Increase in Harvest Rate".

Response to Comment 18-35. Refer to Substantive Issue 1-5, "Impacts of Implementing the Proposed Long-Term Increase in Harvesting Rate".

Response to Comment 18-36. Refer to Substantive Issue 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment 18-37. Although the past fish surveys referred to in the draft EIR confirm the presence of log jams that either impede or preclude passage by anadromous fish, they are inconclusive as to the presence of such fish upstream from the barriers. Surveys conducted in 1995 confirmed the absence of steelhead trout upstream from a major jam on Amaya Creek (Sutfin pers. comm.). Information in Titus and Erman (in preparation) provides additional evidence regarding the likelihood that major logjams pose passage problems for migrating adult steelhead trout on Amaya Creek.

Response to Comment 18-38. Refer to response to previous comment. Although the benefits of removing log jam barriers to fish migration are identified in the draft EIR (page 4-15), no such removals are proposed. Future removal of log jams would be conducted pursuant to approval by DFG.

Regarding barriers to fish migration at the mouth of Soquel Creek, implementation of the GFMP will not conflict with direction contained in the Soquel Creek Lagoon Management Plan or management of the sand bar or flume at mouth by the City of Capitola.

The optimal shading range of 50-75% specified in the draft EIR is based on the conclusions of Raleigh et. al (1984) for trout streams.

Response to Comment 18-39. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment 18-40. The EIR is based on the best available information; the SDSF forest manager and other CDF staff cited in the EIR are among the most knowledgeable individuals in the topics they provided information on.

Response to Comment 18-41. Refer to Substantive Issues 3-2, "Significance Criteria for Sediment Impacts" and 3-4, "Ongoing Performance Monitoring Program".

Response to Comment 18-42. Refer to Substantive Issues 2-3, "Planting of Conifers in Riparian Zones to Promote Recruitment of Instream Large Woody Debris", and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment 18-43. The objective of planting conifers in the riparian zone is for long-term recruitment of large instream woody debris. Late succession management areas are expected to be the source of less than 2% of the total harvest for SDSF. Refer to Substantive Issue 4-1, Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife

Response to Comment 18-44. Refer to Substantive Issue 4-2, "Impacts of Public Use and Related Facility Development Riparian Habitat".

Response to Comment 18-45. As stated in the draft EIR, most riparian areas at SDSF are unsuitable for development of public-use facilities. Specific trail plans will be disclosed in the forthcoming recreation master plan; the environmental impacts of implementing this plan will be assessed in a subsequent CEQA document. Refer to Substantive Issues 2-1, "CEQA Review of SDSF Recreation Master Plan" and 4-2, "Impacts of Public Use and Related Development on Riparian Habitat".

Response to Comment 18-46. Refer to Substantive Issue 6-1, "Public Use Projections".

Response to Comments 18-47 and 18-48. Refer to Substantive Issue 4-2, "Impacts of Public Use and Related Facility Development on Riparian Habitat".

Response to Comment 18-49. Equestrian use at SDSF has not resulted in substantial erosion to date; because of the negligible projected increase in equestrian use (9% over the next 10 years for the proposed project) and the small proportion of such use that occurs during the winter, erosion impacts attributable to horses are expected to continue to be minor.

Response to Comment 18-50. Refer to Substantive Issue 2-1, "CEQA Review of SDSF Recreation Master Plan".

Response to Comment 18-51. Refer to Substantive Environmental Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment 18-52. Timber harvesting in riparian zones at the low proposed intensity will not substantially change their canopy shading, species diversity, or tree density.

Response to Comment 18-53. The vegetation setting section in Chapter 5 describes the forest types and other communities that make up the SDSF. These descriptions identify the dominant plant species and general characteristics of each community. The text in this chapter meets the requirements specified in the State CEQA Guidelines for describing the environmental setting [Section 15125]. A plant species list is not required by CEQA or the CEQA Guidelines.

Response to Comment 18-54. Refer to Substantive Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment 18-55. As discussed in Chapter 5 of the draft EIR, removing trees from the riparian corridor could result in adverse effects on nesting birds. This potential impact will be assessed site-specifically for subsequent projects. Refer also to Substantive Issues 2-3, "Planting of Conifers in Riparian Zones to Promote Recruitment of Instream Large Woody Debris", and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment 18-56. Most of the species listed in Table 5-2 inhabit riparian habitat. Refer to Substantive Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on riparian Habitat and Wildlife".

Response to Comment 18-57. The limited amount of timber management activities proposed in the riparian corridor would not appreciably change the composition or amount of understory vegetation; no long-term adverse effects on red-legged and yellow-legged frogs would result. Refer to Substantive Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife", and the response to comment 7-36 above.

Response to Comment 18-58. Less than 2% of the total SDSF timber harvest will be harvested from Late Succession Management Areas, of which hardwoods are expected to account for less than half. Refer to Substantive Issues 2-2, "Harvesting in Late Succession Management Areas", and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment 18-59. Refer to Substantive Issues 2-2, "Harvesting in Late Succession Management Areas" and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment 18-60 and 18-61. Harvesting in riparian areas will be scheduled to avoid impacts to nesting birds. Refer to Substantive Issue 2-3, "Planting of Conifers in Riparian Zones to Promote Recruitment of Instream Large Woody Debris".

Response to Comment 18-62. Refer to Substantive Issues 2-3, "Harvesting in Late Succession Management Areas" and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife" and response to comment 18-55.

Response to Comment 18-63. Refer to the response to comment 7-36 above.

Response to Comment 18-64. The GFMP includes direction for evaluation and management of feral pigs at SDSF. As described in the mitigation and monitoring plan (Appendix A), SDSF will monitor the condition of sag ponds and riparian habitats for the effects of feral pigs on those sensitive resources. If, based on the professional judgment of a qualified wildlife biologist, feral pigs are determined to be causing significant adverse impacts on these resources, pig population control efforts will be intensified as appropriate.

Response to Comment 18-65. Refer to the response to comment 18-64 above.

Letter 19

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COMMENTS TO THE DRAFT EIR FOR SEQUEL DEMONSTRATION STATE FOREST BY

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408 353-4882

PG. ES-1

THE OBJECTIVES OF THE PROJECT SHOULD REMAIN CONSISTANT WITH THOSE STIPULATED IN THE ENABLING LEGISLATION, AB 1965 | 19-1

PG ES-2 PAR. 5

HOW CAN RECREATIONAL IMPACTS BE PROPERLY ADDRESSED WITHOUT A PROPER MASTER PLAN. WHY IS THERE NO MASTER PLAN? | 19-2

PG ES-3 PAR "ALTERNATIVE 3"

SEQA STATES THAT ALTERNATIVES MUST BE VIABLE. THIS ALTERNATIVE IS CLEARLY ILLEGAL UNDER AB 1965, FOR SEVERAL REASONS. | 19-3

PG 1-2 PAR 5

THIS, BY DEFINITION, WOULD ALLOW BLOCKS TO BE DIVIDED WITH SEPARATE THP'S. 19 ACRES THIS YEAR, 19 ACRES NEXT YEAR... | 19-4

PG. 1-5 PAR. 4

FIGURES IN THIS DOCUMENT (TABLE 7-1) SHOW THAT PRIOR TO THE ARRIVAL OF THE NATURE CONSERVANCY + CDF, PUBLIC USE OF THE PROPERTY WAS STABLE. IT WAS NOT UNTIL CDF BEGAN CLEARING OLD TRAILS, BUILDING NEW TRAILS, CREATING PICNIC AREAS, DISTRIBUTING MAPS, ALERTING THE MEDIA TO RECREATIONAL ACTIVITIES, ALERTING BICYCLE CLUBS, + ALLOWING NISENE MARKS RANGERS TO DIRECT VISITORS TO SDSF THAT USAGE CLIMBED SUBSTANTIALLY. THE STATEMENT," THIS INCREASE IS EXPECTED TO CONTINUE REGARDLESS OF WHETHER THE IMPROVED FACILITIES AND INCREASED SERVICE LEVELS... ARE IMPLEMENTED." IS SIMPLY NOT TRUE, AS QUOTED ON PG 7-12, PAR. " BY IMPROVING ACCESS TO THE FOREST, THE PROPOSED PROJECT WILL ALSO ATTRACT MORE RECREATION VISITORS." THE LATTER STATEMENT IS WELL DOCUMENTED. | 19-5

PG 2-1 PAR. 1

SANTA CRUZ COUNTY FILES SHOW THAT HIGHLAND WAY HAS A LONG HISTORY OF LANDSLIDES. THIS SHOULD BE PROPERLY NOTED, AND ASSESSED. | 19-6

PG 2-1 - PROJECT OBJECTIVES —

MUST CONFORM WITH ENABLING LEGISLATION! | 19-7

PG 2-8 PAR 5

22 MILES OF NEW ROADS, TOTALLING 41 MILES OF ROADWAY ON APPROX 2700 ~~2900~~ ACRES WITH NO ADVERSE IMPACT? GET REAL. THE MAP LOOKS LIKE A SARATOGA SUBDIVISION. 19-8

PG 2-9 PAR 2

CDF HAS ALREADY HAD DIFFICULTIES MAINTAIND DRAINAGE TO PREVENT SOIL EROSION ON IT'S EXISTING ROADS, AS WITNESSED + DOCUMENTED ON .5 MILE OF COMSTOCK MILL RD. 19-9

PG 2-12 PAR 2

THE DEVELOPMENT OF RECREATION FACILITIES HAVE BEEN ELEVATED TO A HIGH PRIORITY BY THE CDF, AND AS A SIGNIFICANT PORTION OF THE PLAN, THE RECREATION MASTER PLAN MUST BE INCORPORATED IN ANY GFMP + SUBSEQUENT EIR IN ORDER TO PROPERLY ASSESS CULMULATIVE IMPACTS. 19-10

PG 5-27

" CONSTRUCTION OF 7 MILES OF ONE LANE ROADS." PG 2-8, PAR 5 SAYS 22 MILES OF NEW ROADS. 19-11

PG 6-2 PAR. 4

THE LACK OF WILDFIRES OVER TIME CAN BE ATTRIBUTED TO THE GENERAL LOW LEVEL OF HUMAN ACTIVITY. ANY INCREASE IN ACTIVITY WILL INCREASE THE LIKLEHOOD OF FIRE. ANY INCREASE IN THE LIKLEHOOD OF FIRE SHOULD BE CONSIDERED SIGNIFICANT. 19-12

PG 8-2 PAR 3

OLIVE SPRINGS Rd. IS CLOSED TO THE PUBLIC AT THE QUARRY. 19-13

PG 8-2 PAR 4

HIGHLAND WAY HAS A LONG HISTORY OF LANDSLIDE CAUSED ROAD CLOSURES 19-14

PG 8-2 PAR 8

WHAT ARE THE PAVEMENT CONDITIONS OF THE REST OF THE ACCESS ROUTES? SOQUEL - SAN JOSE RD. NORTH OF OLIVE SPRINGS? SUMMIT RD? HIGHLAND WAY, EUREKA CANYON RD? WHY ARE THEY NOT INCLUDED? 19-5

PG. 8-4 " EXISTING TRAFFIC CONDITIONS"

THIS ENTIRE STUDY HAS BEEN MADE WITH THE PRESUMPTION THAT 19-16

THE CDF WILL ACQUIRE THE NOREN PROPERTY, YET PG 2-1 PAR 5 CALLS THIS "PROBABLE" AND PERS. CONVERSATIONS WITH SOTFIN, NOREN, AND OTHERS MAKE THIS IDEA DIFFICULT AT BEST. THIS STUDY IS BASED SOLEY ON SPECULATION AND NEVER ONCE MENTIONS THE REALITIES OF THE PRESENT, NOR DOES THE STUDY LOOK AT THE POSSIBILITY THAT THE NOREN PROPERTY CANNOT BE ACQUIRED. WHILE ANALYZING THE "PROBABLE" AT GREAT EXTENT, THIS REPORT COMPLETELY OMITS THE EXISTING ~~TRAFFIC~~ CONDITIONS + TRAFFIC FLOWS TO - FROM THE FOREST, AND OVERLOOKS SOME FACETS OF THE "PROBABLE" SCENARIO. 19-110 Econ

PG 8-4 PAR 4

ON WHAT DOES SOHRIAKOFF BASE THAT USAGE? A STUDY? A GUESS? 19-11

PG 8-4 PAR 5

TO ESTIMATE 1994 TRAFFIC VOLUMES, THE STUDY USES A GROWTH RATE OF 0.8% PER YEAR. WHERE DOES SOHRIAKOFF GET THIS NUMBER? WHAT ARE THE CENSUS FIGURES? PG 7-5, IN AN ATTEMPT TO JUSTIFY EXPANDED RECREATION FACILITIES STATES, "THE POPULATION OF SANTA CRUZ + SANTA CLARA COUNTIES ARE PROJECTED TO INCREASE BY 27% + 22%, RESPECTIVELY, BETWEEN 1990 + 2010. (HORNER 1994)" 19-1

THIS NUMBER, (1.35%, AVERAGE PER YEAR, SANTA CRUZ CO.) DIFFERS SIGNIFICANTLY WITH THE TRAFFIC VOLUME. WHY?

PG. 8-8 TABLE 8-3

HOW MANY BICYCLES ARE INCLUDED IN THIS ESTIMATE?

WHAT PERCENTAGE OF THE ESTIMATED 8000 BICYCLES WILL RIDE ON OLD SAN JOSE RD.? HAVE YOU ESTIMATED THE LOS TO ~~INCLU~~ INCLUDE THE FACT THAT OLD SAN JOSE RD IN SEVERAL AREAS HAS NO SHOULDER FOR ~~BIK~~ SAFE BICYCLE PASSAGE? ~~THERE IS THE ESTIMATE~~ HOW MUCH WILL THEY IMPEDE TRAFFIC? 19-19

YOUR ESTIMATES DO NOT PROJECT HOW MANY OF THE 94,000 VISITORS TO NISENE MARKS (PG 7-3 PAR 1) WILL INSTEAD USE SDSF. HOW MANY OF THE 47,000 BICYCLES WHO USE NISENE MARKS

INSTEAD RIDE INTO SDSF VIA OLD SAN JOSE RD? WHAT WILL THE IMPACT BE? 19-19 [cont.]

PG 7-7 PAR. 3 ~~SAY~~ STATES "A LARGE NUMBER OF FOREST VISITORS APPROACH SDSF FROM THE APTOS AREA VIA EUREKA CANYON RD + HIGHLAND WAY." WHY IS THERE NO MENTION OF THESE ROUTES IN YOUR TRAFFIC ANALYSIS? 19-20

AT WHAT POINT DOES A ROAD GO FROM A 'C' ~~TO~~ TO A 'D' RATING WHY WAS THIS NOT INCLUDED?

THE BUSIEST INTERSECTION IN SANTA CRUZ CO. HAS BEEN SAID TO BE PORTER/SOQUEL DR IN SOQUEL VILLAGE. WHAT WILL BE THE IMPACT ON THAT INTERSECTION? WHY WAS THAT NOT INCLUDED? 19-21

PG 8-12 "■ INCREASE TRAFFIC HAZARDS TO MOTOR VEHICLES, BICYCLES, OR PEDESTRIANS." - "CRITERIA FOR DETERMINING SIGNIFICANT IMPACTS." BY ENCOURAGING ~~THE~~ BICYCLE TRAFFIC ON A 40 MPH NARROW, WINDING ROAD WITH NO SHOULDER IN SOME AREAS, THE PROJECT WILL INCREASE HAZARDS TO MOTOR VEHICLES + BICYCLES ALIKE. WHERE IS THIS IMPACT ADDRESSED? 19-22

PG 8-13 PAR. 4 NO PROJECT ALTERNATIVE

"ON AN AVERAGE NONWINTER WEEKEND DAY, 90 TRIPS... WOULD BE GENERATED BY USE OF SDSF." THIS IS A VERY LOW ESTIMATE. ON ANY ~~DAY~~ SUMMER WEEKEND, AT ANY ONE TIME, 10-20 VEHICLES CAN BE OBSERVED PARKED AT ~~#~~ THE LANDSLIDE (~~NOT THE P~~ DOES NOT INCLUDE THE PARKING LOT) ON HIGHLAND WAY. THIS IS AN ~~OBS~~ OBSCURE, REMOTE, DIFFICULT TO ACCESS AREA. YOUR NUMBERS DO NOT SEEM TO CONFRONT THE REALITIES. WHERE ~~ARE~~ IS THE DATA FOR CURRENT TRAFFIC TO THE FOREST? 19-23

THE NUMBERS THROUGHOUT THIS STUDY OVERLOOK THE 94,000 VISITORS + 47,000 BICYCLES TO NISENE MARKS, WHO WILL BE ATTRACTED BY A SIGNIFICANTLY MORE CONVENIENT ACCESS ON OLD SAN JOSE RD. 19-24

PG 8-15, ~~8-16~~ PAR. 8

STUDY STATES, "THE PROJECT WOULD ADD ONE VEHICLE TRIP TO AVERAGE DAILY TRAFFIC UNDER NO-PROJECT CONDITIONS." UNLIKELY AT BEST. AS WE HAVE ALREADY SEEN, BUILD IT, AND THEY WILL COME. THESE FIGURES ARE EXTREMELY LOW CONSIDERING THE CONVIENCE OFFERED BY THAT ACCESS. 19-5

CONCLUSION:

I HAVE FOLLOWED THIS PROJECT WITH INTEREST FOR APPROX 3 YEARS. THROUGHOUT, I HAVE WITNESSED, DECEPTION, MANIPULATION, AND OUTRIGHT ATTEMPTS TO DISSUADE + SUPPRESS DISSENT FROM THE LOCAL COMMUNITY BY THE CDF AND SOME MEMBERS OF THE ADVISORY COMMITTEE. WHEN I WAS TOLD THAT JONES + STOKES WOULD BE WRITING THE EIR, AND THEIR REPUTATION WOULD SUGGEST A FAIR AND EQUITABLE ANALYSIS, I LOOKED FORWARD TO JUST THAT, A DOCUMENT THAT TOLD THE WHOLE STORY, THE GOOD AND THE BAD, THE TRUTH, SOMETHING HONORABLE. IT DID NOT HAPPEN.

I HOPE THIS CAN BE RECTIFIED IN THE FINAL REPORT.

Mark A. Hamlin
16040 COMSTOCK MILL RD.
LOS GATOS, CA 95030
408 353-4882

Response to Comment 19-1. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives"

Response to Comment 19-2. Refer to Substantive Issue 2-1, "CEQA Review of SDSF Recreation Master Plan"

Response to Comment 19-3. Refer to Substantive Issue 1-4, "Consideration of a Reasonable Range of Alternatives".

Response to Comment 19-4. The Rules [14 CCR 895.1 and 14 CCR 919.16 (a)] specify that if proposed timber operations would affect late-succession forest stands exceeding 20 acres, the effects of the operations on wildlife dependent or associated with late-succession habitat generally need to be addressed in the THP, and measures to avoid or reduce to a less-than-significant level any significant adverse impacts on such wildlife need to be incorporated into the THP. The 20-acre minimum specified in the definition of late-succession forest stands in the Rules and discussed on page 1-2 of the draft EIR does not refer to the extent of the proposed timber operations; it refers to the extent of the late-succession habitat unit affected by the operations. Limiting operations proposed in a single THP to less than 20 acres would not affect the need to protect late-succession habitat.

Response to Comment 19-5. CDF disagrees. As discussed in Chapter 7 of the draft EIR, public use of SDSF would increase over time regardless of which alternative were implemented.

Response to Comment 19-6. Refer to the response to comment 6-1.

Response to Comment 19-7. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives".

Response to Comment 19-8. Existing roads at SDSF, both in use and abandoned, total approximately 19 miles; proposed roads total approximately 22 miles. Of the 41 total miles of road, approximately 15 miles will eventually be abandoned.

Response to Comment 19-9. Maintenance of the referenced segment of Comstock Mill Road is the responsibility of private neighbors; this segment is not a valid example of road maintenance performance at SDSF.

Response to Comment 19-10. Refer to Substantive Issue 2-1, "CEQA Review of SDSF Recreation Master Plan".

Response to Comment 19-11. As stated on page 2-8 of the draft EIR, approximately 22 miles of new roads are needed to complete the SDSF road network; approximately 7 miles of roads would be constructed during the next 10 years.

Response to Comment 19-12. Refer to Substantive Issue 5-1, "Wildfire Risks".

Response to Comment 19-13. See the response to comment 5-5.

Response to Comment 19-14. Refer to response to comment 6-1.

Response to Comment 19-15. Pavement conditions are given in the draft EIR for the local roadway segments that would support most log truck traffic from SDSF. Damaged portions of Soquel-San Jose Road from Olive Springs Road to Summit Road and of Summit Road between Soquel-San Jose Road and Highway 17 were recently repaired by the County of Santa Cruz; these segments are in generally good condition.

Response to Comment 19-16. Refer to Substantive Issue 7-1, "Location of the New Access Road".

Response to Comment 19-17. Traffic volumes used in the draft EIR were based Santa Cruz County traffic counts.

Response to Comment 19-18. Growth in traffic volumes on specific road segments depends primarily on local population growth; locations of new residential, commercial, and industrial developments; and primary use of the roadway (e.g., local versus regional traffic). Sohriakoff projected annual growth in traffic volume at 0.8% for Soquel-San Jose Road, Summit Road, and Olive Springs Road based on recent population growth and development in the SDSF project vicinity, not the countywide population growth rate. The increase in regional traffic from countywide growth will mostly affect the regional transportation system (e.g., State Highways 1 and 17) relatively more than local roads.

Response to Comment 19-19. Refer to Substantive Issue 7-3, "Bicycle Traffic".

Response to Comment 19-20. Eureka Canyon Road and Highland Way are described on page 8-2 of the draft EIR, but traffic volumes were not available for these road segments. Definitions of level of service (LOS) on rural highways are given in Table 8-1. The capacity of a two-lane highway depends on conditions such as design speed, lane width, clear shoulder width, frequency of no-passing zones, terrain, and the relative balance of traffic between travel directions. Depending on the segment, LOS on Soquel-San Jose Road changes from an C to D when traffic volume exceeds approximately 500-800 vehicles per hour.

Response to Comment 19-21. Traffic on Porter-Soquel Road in Soquel Village was not analyzed in the draft EIR. The traffic analysis focused on road segments that would be most affected

by the activities proposed in the GFMP. Although the Porter-Soquel Road intersection may be used by SDSF visitors, it is relatively distant (approximately 6 miles) from the proposed access road. The Porter-Soquel intersection is congested primarily during weekday peak-hour commute times, whereas most traffic generated by the proposed project would occur during non-commute periods, would not display concentrated peaks, and would be small compared to roadway and intersection capacities. This intersection was not included in the analysis because traffic generated by SDSF is unlikely to have a substantial effect on congestion at this intersection.

Response to Comment 19-22. The proposed project does not encourage bicycle traffic on highways. By providing a new access road and parking facility, the project would provide bicyclists with an alternative to riding on public roads to get to the forest. Refer also to Substantive Issue 7-3, "Bicycle Traffic".

Response to Comment 19-23. Insofar as the landslide at Highland Way is currently a principal de facto parking area for public users of SDSF, observations of 10-20 cars at this location are not inconsistent with the trip generation results (a maximum of 90 per day) for the proposed project in the draft EIR. Regarding the projected number of trips generated by public use of SDSF, refer to Substantive Issue 7-2. "Methodology for Projecting Traffic Levels".

Response to Comment 19-24. Refer to Substantive Issue 7-3, "include Bicycle Traffic in the Analysis".

Response to Comment 19-25. As shown in Table 8-4, implementing the proposed project is projected to result in an average increase of one additional vehicle trip per average weekday over no project projections. The increase in trips relative to the proposed project is small in part because access and parking improvements would be developed at SDSF under both the no project alternative and the proposed project; such improvements were planned in 1988 by The Nature Conservancy. Under either of these scenarios, however, public use of SDSF would have a minor effect on roadway congestion because most recreational use would occur on the weekends and not coincide with peak commute hours. Refer to Substantive Issue 7-2, "Methodology for Projecting Traffic Levels".

Letter 20

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 2
To Jon Rea	From Rich Eliot
Co. C.D.F.	Co. N/A
Dept. Resource Mang.	Phone # (408) 335-3281
Fax # (916) 653-8957	Fax #

RICHARD G. ELIOT
9815 ZAYANTE DRIVE
FELTON, CA 95018

September 2, 1995

RECEIVED
CDF
RESOURCE MANAGEMENT
TIMBER OPERATOR LICENSING
SEP 05 1995
BY: _____

Jon Rea
California Dept of Forestry &
Fire Protection
1416 Ninth Street
Sacramento, CA 95814

Dear Jon:

Please accept my comments on the Draft Environmental Impact Report for the General Forest Management Plan for SDSF. The plan will provide a good basis to continue to build this forest on, and this EIR will help to cement the plan together. I am concerned though that a few vocal individuals, through the planning stages, may have had influences over how restrictive the plan and EIR have developed in a couple of areas.

The legislation creating SDSF is clear in it's intent to provide an intensively managed, multifaceted research forest providing a number of benefits. It is unclear though on how to fund all these great ideas. Up to this point the Department of Forestry has not fully funded the managers of SDSF to adequately fulfill the legislative intent. There is also no regulations in force that would guarantee funds generated on the forest go to fulfilling the intent. Yet as long as long as funding is assured from the FRIF fund, then additional legislation is probably unnecessary.

To ensure adequate funds are available within FRIF to comply with the legislation, I have concerns that the timber harvest levels of the proposed project are to low. They may run short in fulfilling these goals as well. As evident with the first harvest on the forest, revenues derived will not even cover the minimums needed to manage the forest at the maintenance levels, now provided by the Department. Additional personnel will be needed to develop the education and research programs, no funds have yet been forth coming to purchase property and build the environmental education center, access is still lacking on the west end of the forest, and with recent storm damages, access has been compromised throughout the forest and watershed protection measures will have to be put off until stream damages are repaired. 20-1

In addition to the above and taking into account the type sylvicultural practices regulated in Santa Cruz County, good forestry practices would dictate the following in second growth 20-2

redwood timber stands. After initial thinning they should be reentered on the average at about 15 years. These further thinnings continue the release process and ensure sprout survival. With harvest levels as proposed it may take from 28 to 32 years to just complete the initial harvest over the entire accessible portions of the forest. A compromise might be to develop a harvest schedule that would complete this cycle in closer to 20 years. 20-2 [cont.]

Recreation on the forest also appears to be a big issue with how much and types and numbers of facilities to develop. My concern is this is public land which the legislation says should be open for public accessibility. The proposed project does allow the forest to fulfill it's own nitch in regards to recreation and not complete with parks or other public lands in the Santa Cruz area. Yet in one area it is overly restrictive and limits alternatives to one. A minimum of three to four campgrounds should be developed instead of one. This would provide management greater opportunity, as time and condition permitted, to allow for greater and more diverse use. The opportunity for camping should be regulated by management not numbers of facilities available or where the facilities are located. Conflicts between user groups could be lessened and use could be accommodated year round when certain sites became cut off due to inclement weather or road conditions. In addition, rotating use between sites could occur and thus reduce impacts on an individual site. 20-3 [cont.]

Sincerely,

Richard G. Eliot

Richard G. Eliot

RECEIVED
RESOURCE MANAGEMENT
TIMBER OPERATOR LICENSING
SEP 05 1995
BY:

Response to Comment 20-1. Refer to Substantive Issue 1-1, "Timber Revenues and SDSF Operational Costs".

Response to Comment 20-2. Cutting cycles were overestimated in the draft EIR because the analysis was based on the assumption that, for each alternative, all SDSF timberlands would be periodically harvested at a uniform intensity. In fact, only approximately 55% of the SDSF acreage is fully available for harvesting; as a result, such lands would need to be harvested relatively frequently at the proposed intensities to achieve the proposed timber yields. Under the proposed project, the cutting cycle on fully available lands would vary from approximately 20 years in the short term (i.e., over the next decade) to 10-15 years in the long term (i.e., after five decades). Refer to Substantive Issues 1-5, "Effects of Implementing the Proposed Long-Term Increase in Harvest Rate", and 4-3, "Achieving Maximum Sustained Production".

Response to Comment 20-3. Consistent with information contained in the GFMP, the proposed project specifies that a single campground will be constructed. Alternative 3 proposes three campgrounds. The number of campgrounds to be constructed will be determined in the Notice of Determination for the final EIR and the forthcoming recreation master plan.

COPY

PUBLIC MEETING

Wednesday, August 23, 1995

7:00 P.M.

Scotts Valley City Council Chambers
Scotts Valley City Hall
1 Civic Center Drive
Scotts Valley, California 95066

PUBLIC HEARING

Subject: Draft Environmental Impact Report for the General Forest Management Plan for Soquel Demonstration State Forest; State Clearinghouse Number 94023033.

Place: Scotts Valley City Council Chambers
Scotts Valley City Hall
1 Civic Center Drive
Scotts Valley, California 95066

Date: Wednesday, August 23, 1995

Time: 7:00 p.m.

Reporter: Mary E. Sproul

Panel: JONES & STOKES ASSOCIATES, INC.
Nicholas Dennis, Ph.D.
2600 V Street, Suite 100
Sacramento, CA 95818-1914

DEPARTMENT OF FORESTRY AND FIRE PROTECTION
Len Theiss
Deputy Chief, Resource Management
- and -
Jonathan E. Rea
Deputy Chief, State Forests and
Nursery Programs
State of California
The Resources Agency
135 Ridgway Avenue
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Santa Rosa, CA 95402

I N D E X

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1 WEDNESDAY, AUGUST 23, 1995 7:00 P.M. O'CLOCK

2 P R O C E E D I N G S

3 ---oOo---

4 MR. DENNIS: Good evening ladies and gentlemen and
5 welcome to the public hearing for the Soquel Demonstration,
6 State Forest General Forest Management Plan Draft Environmental
7 Impact Report. My name is Nick Dennis. I'm a forester with
8 Jones & Stokes, Associates, and I'm also the project manager
9 and main author of the Draft Environmental Impact Report that
10 Jones & Stokes prepared under contract to the California
11 Department of Forestry and Fire Protection. And with me up
12 here at the head table is Tom Sutfin, whom you all know, the
13 forest manager for Soquel Demonstration State Forest.
14 I brought along one handout this evening and it's
15 sitting over there on the edge of the platform, and I'm going
16 to go over it right now briefly. The handout identifies where
17 we go from here with regard to completing the EIR process and
18 the General Forest Management Planning process. The public
19 comment period for the EIR is open until this September 5th.
20 Please submit your comments in writing or verbally this evening
21 and they will be submitted to John Rea at the Department of
22 Forestry as indicated, at the address indicated in the
23 Environmental Impact Report.
24 Second, we at Jones & Stokes will summarize all the
25 comments that are received both tonight and in writing and

1 respond to those comments in the final Environmental Impact
2 Report.
3 Third, the advisory committee for the state forest
4 will be meeting to discuss the EIR and a preliminary summary of
5 the comments on the EIR. That meeting is tentatively scheduled
6 for September 21st. It will take place in this room at 3:45
7 unless that schedule changes. And my understanding is those
8 meetings are open to the public.
9 Fourth, we will prepare the final EIR which will
10 include the comments, our responses to the comments, and any
11 revisions to the proposed project that result from the
12 comments.
13 Fifth, Tom and his staff will revise the General
14 Forest Management Plan to make it consistent with changes in
15 the proposed project from the EIR.
16 Sixth, the director of the Department of Forestry will
17 select a preferred alternative, which will be again the same as
18 the General Forest Management Plan and the proposed project and
19 go through the procedural process of certifying the EIR and
20 documenting his decision in a record of decision.
21 Next, the Board of Forestry, which is the executive
22 commission at Sacramento that deals with issues related to
23 forestry, has the authority to adopt management plans for state
24 forests, and they will adopt the General Forest Management Plan
25 for Soquel.

1 Eight -- let's see. We will design a mitigation and
2 reporting program pursuant to what's known as Assembly Bill
3 3180, a bill that was adopted as law in 1989 to put teeth into
4 the Mitigation Measure Program associated with Environmental
5 Impact Reports. This law requires that agencies specify how
6 the mitigation measures that are adopted in environmental
7 impact reports will be implemented, and monitor it over time to
8 insure that they continue to be implemented and enforced.
9 And finally, and this is an on-going process, the
10 staff at Soquel Demonstration State Forest will implement the
11 projects as described in the EIR and in the plan including
12 timber harvesting, timber operations associated with which will
13 be timber harvesting plans that will be prepared on a project
14 level basis.
15 Are there any questions on that process? Yes.
16 MR. SINGER: Yeah. On the last item, preparation of
17 THP's, there's something in the Draft EIR that says they're
18 going to try to go to a different process. What's the status
19 on that?
20 MR. DENNIS: I'll defer to John Rea to answer that
21 question.
22 MR. REA: That's strictly in the conceptual
23 development stage at this time. We have some of the basic
24 thoughts down on paper and we've given that to some internal
25 staff, attorneys and others, to have them review that. There

1 is nothing that is for public review yet. Everything's
2 strictly in the conceptual development stage.
3 I suspect if things go well, we may have a draft set
4 of regulations that we may be able to take to the Board of
5 Forestry in early September. If not, it will probably go in
6 October. And then, when and if it does go to the Board of
7 Forestry, the Board has to endorse the concept of the project
8 level timber harvesting plan, and they can either tell us to
9 stop or go ahead, depending on what they determine is correct.
10 So, I don't have a lot to say other than that. It's
11 in development. Tune in next month.
12 MR. MORGENTHLER: So, does that mean that this --
13 COURT REPORTER: Excuse me -- oh, go ahead.
14 MR. MORGENTHLER: -- does that mean that this EIR will
15 be compliant with the regulations, and hopefully the THP's for
16 this forest will be able to be done under those new provisions,
17 or don't you yet know that?
18 MR. REA: No. The regulations will be compliant with
19 this EIR.
20 MR. MORGENTHLER: So, this is the prototype?
21 MR. REA: For --
22 MR. MORGENTHLER: For these particular -- these
23 programs, EIR, for the regulations that are being considered
24 right now by the Board for us?
25 MR. REA: Well, it's not a prototype as I see it.

1 It's more of an alternative, and another option that's
2 available in the timber operating process, if somebody wishes
3 to do an EIR and then have project level timber harvesting,
4 then that -- you know, that's consistent with CEPRA. And then,
5 this kind of gets back to some of the suggestions of the
6 environmental community for a long time that they ought to drop
7 the current THP process and go to an EIR. So, it's another
8 option.
9 MR. SINGER: Could I say one other thing?
10 COURT REPORTER: Could you give me your name, please.
11 MR. REA: You bet.
12 MR. SINGER: My name is Steve Singer. The -- in the
13 draft EIR, it says several points that specific mitigations
14 will be composed when the THP is prepared for a site project, a
15 specific site project. And yet, if we're not talking about not
16 actually doing THP's, that seems like they're creating a gap
17 where we don't -- it's not covered in the draft EIR, and if
18 it's not covered in the THP, then it's not covered anywhere.
19 MR. DENNIS: There will be a THP prepared for all
20 project level timber operations at Soquel Demonstration State
21 Forest. The California Forest Practices Act requires that
22 timber harvest plans be prepared, and that act will not be
23 changed, and that requirement won't change per se. The form of
24 the THP may change. And as John indicated, there are already
25 several options for THP's in this proposed Board of Forestry

1 rule that's in the conceptual stages will probably create a new
2 type of a THP.
3 MR. REA: I'd like to say one other thing. You can't
4 have a gap in the process. If the EIR doesn't cover some of
5 the mitigation that's proposed or some of the problems that are
6 proposed in the plan itself, you either have to do a regular
7 THP or you have to amend the EIR. So, there's not a gap in the
8 process. So, if the EIR doesn't cover it, when you want to do
9 it with this new THP process, then you're going to have to go
10 back and plug the gap of the EIR.
11 MR. SINGER: Well, who makes the decision as to
12 whether or not there is a gap? That could be a subjective
13 decision.
14 MR. REA: That'd be the lead agency decision, CDA.
15 But, you know, those gaps generally tend to be fairly obvious.
16 MR. DENNIS: Incidentally, this proceedings is being
17 taped and will be transcribed by Mary Sproul and her company.
18 And for her convenience, I think we should immediately invoke
19 the ground rule that I'm going to go over in a minute of
20 speaking into the microphone. I think if you stand up and
21 state your question loudly from the floor, she can hear it, but
22 anyone responding to one of these questions, please speak into
23 the microphone for her convenience.
24 MR. SUTFIN: And say who you are.
25 COURT REPORTER: And also identify --

1 MR. SUTFIN: Give your name and spell your name, if
2 you would, please.
3 MR. DENNIS: Any more questions on the process?
4 (No response.)
5 MR. DENNIS: Okay. I'm going to quickly go over the
6 ground rules and then turn the meeting over to you. First, the
7 objective of this hearing is to receive comments on the EIR,
8 and that entails both comments on the environmental assessment
9 contained in the EIR and on the proposed project as described
10 in the EIR. The objective is not to debate or expound on your
11 personal opinion regarding forest management at the State
12 Forest. And I realize there's a fine line perhaps between
13 expounding and debating your position and stating a comment.
14 Because of the relatively small audience, we won't impose a
15 time limit per se on your comments, but out of courtesy to
16 others, please state your comments succinctly.
17 Second, as I've already said, all comments received
18 either verbally tonight or in writing by September 5th will be
19 noted and responded to in the final EIR.
20 Third, if you have a prepared statement that you
21 intend to read, would you please give me a copy of it and I'll
22 see that it gets put into the EIR.
23 And fourth, as has been stated, to comment, please
24 approach the podium, speak into the microphone, and begin by
25 stating and spelling your full name.

1 And with that, I invite anyone to make the first
2 comment.
O1 3 MR. MORGENTHLER: My name is Mark Morgenthler. I'm
4 from Citizens for a Responsible Forest Management. And I think
5 you already have the spelling on my name, right. I'm going to
6 move around here because I just find it easier to talk to --
7 talk to a group of people.
8 As I read the EIR, I found a number of things in there
9 that kind of were hopeful, things to be optimistic about. I've
10 been involved in this process for two years, something like
11 that.
12 MR. SUTFIN: Two or three.
13 MR. MORGENTHLER: And there were definitely some
14 things in there that I saw that were good. There were also
15 some things that remains kind of vexing, and I just wanted to
16 go through both what I saw as good and what I saw as vexing.
17 On the -- on the good or the hopeful side, I think
18 there was some discussion in there about striking a balance
19 between the level of timber harvesting and the kinds of
20 activities that are going on at the Soquel Demonstration
21 Forest. As those of you who have been involved in this process
22 are well aware, CRFM has long been saying that AB1965, the
23 legislation that enabled this forest specifies that the timber
24 harvesting level should be sufficient to cover the operational
25 and the maintenance expenses on the forest, and hence -- and we

1 believe furthermore, that more timber harvesting that would
2 generate an excess amount of funds should not be done and was
3 not authorized by the legislation.
4 So, therefore, what we're really looking at is a
5 balance between what's happening there and the amount of timber
6 harvesting that's done. Now, I think I saw that. Whether it
7 was overt or I just saw that kind of reasoning in the EIR. It
8 seemed to be there. There was a language in the executive
9 summary concerning Alternative No. 2, where it said that
10 Alternative No. 2 was the environmentally preferred
11 alternative, but it didn't develop sufficient amounts of funds
12 to cover the purposes as -- of the project as were enumerated.
13 I, by the way, don't necessarily agree with that conclusion,
14 but I like the thought process. I found that promising.
15 Another thing that I was -- that I was optimistic and
16 I found to be kind of hopeful about was -- was the harvest
17 levels that were involved in the management plan and in
18 Alternative No. 1 and Alternative No. 2. I didn't necessarily
19 find the harvest levels in Alternative No. 3, what I called the
20 "plan from hell" alternative encouraging, but I think that
21 alternative was somewhat dismissed in the EIR itself. The
22 other harvest levels did seem to be within what I think was
23 contemplated by the enabling legislation. Perhaps the
24 management plan was a little rich. Perhaps some of the other
25 alternatives were a little lean, but that's the kind of

1 balancing that I think we'd like to see.
2 What was vexing is that there are a number of
3 longstanding disputes that we've been talking about for a
4 number of years here and they don't seen to go away. One of
5 them has to do with this long term plan in which 65 percent of
6 the growth on the forests would be harvested. Everything I've
7 said so far and everything that's happened over the last two
8 years obviously must lead you to believe that we think that's
9 illegal, and that's not contemplated by the law.
10 In fact, with the last timber harvest plan, the one
11 that was passed, we looked for ways with our attorney to
12 actually find that there was a violation of AB1965 involved in
13 what you were doing, and although the advisory committee did
14 vote against our position, we could not find a way to sue CDF
15 because their advisory committee had poorly advised them and
16 obviously there was nothing really in the plan yet that was
17 illegal.
18 We consider this to be a firm position -- how do I say
19 that without -- it's a firm position. Now, the plan analyzes
20 only -- for the management area, analyzes only a 750,000 board
21 foot per year type of cut. That seems reasonable. I lost my
22 place here.
23 Oh, but in one point in the plan, it does allude to
24 this long term objective to go and harvest the 65 percent.
25 Now, there's no analysis in this EIR that has anything to do

01-1

O1-1 [cont]

with 65 percent. And in my opinion, that should just be dropped. It's a kind of a comment that's not -- it should not be a part of this EIR.

Another thing that's vexing are the project goals. At the very beginning of this EIR, there's five goals enumerated for this project. If you look at the very beginning of the management, the plan -- the draft management plan approved by the advisory committee, there's 23 goals. If you look at the authorization for the advisory committee that was approved by the director, there are seven goals. And if you look at the legislation that was approved by the legislature, there are four goals. What's wrong with the four goals that the legislation said are to be the goals of this forest? Why do we keep seeing a restatement of the goals? And in that restatement of the goals, we constantly see kind of an overlay of a different agenda.

O1-2

For instance, if we compare the legislation with the five goals that are listed at the beginning of the EIR, the EIR has recreation in there as one of the goals of this project. The legislation does not mention the word "recreation." It has "public use and enjoyment" and I think we prefer that term, especially since these things kind of develop a second life.

Secondly, there are two goals that talk about timber harvesting in the EIR goals and objectives. There are one, and only one, and that's to meet the operational and maintenance

1 expenses in the legislation.

2 And lastly, in the goals at the beginning of the EIR,
3 they're totally silent on protection of old growth redwood
4 which is one of the main goals of this project in the
5 legislation and it doesn't mention anything about logging
6 history, which is again mentioned in the legislation.

7 I'd like to see if we couldn't get consistent on the
8 goals and keep the goals as outlined by the legislation that
9 were mandated for CDF to be doing.

10 Another -- another point that I think we find vexing
11 and that we've gone over -- and over and over over the last
12 couple of years is timber harvesting in the geologically
13 sensitive areas and the Riparian Corridors.

14 In order to meet the -- you know, I'm reminded here my
15 brother is a surgeon. He's a younger brother of mine, and they
16 have inside jokes about, you know, "When in doubt, take it
17 out," and "heal with steel." We don't have to cut all the
18 trees in the forest in order to keep a healthy forest. In
19 fact, the number of the things that would have the biggest
20 impact on the community are things like the, you know, the
21 helicopter operations and the yarding, the cable yarding
22 operations where we're going into extremely steep areas.

23 The -- one of the main objectives here is to enhance
24 old growth. Well, that can be easily done in the Riparian
25 Corridors, and we don't have to enter into all of the Riparian

O1-3

01-3 [cont.]

1 Corridors. We don't have to cut everything in order to meet
2 the operational and maintenance expenses.
3 When I was -- what are the solutions? The -- as I
4 began looking through the alternatives, I began realizing that
5 -- and reading the executive summary, many of the -- at least
6 two of the alternatives, all three of the alternatives, as a
7 matter of fact, were rejected because they didn't meet the
8 project purposes. The No Plan Alternative didn't do enough.
9 Alternative No. 2 didn't meet the watershed enhancement
10 alternatives. The Alternative No. 3 also didn't meet the
11 alternatives.

01-4

12 So, what we've done is we've analyzed three
13 alternatives that don't meet the purposes of the project. What
14 I'd like to see and I think is a hope here for a solution on
15 this, is if we could analyze some alternatives that were within
16 the -- in the -- within the contemplation of AB1965. These
17 would be alternatives that might have, for instance, less
18 recreation and more watershed remidiations, alternatives that
19 might have no entries on the Riparian Corridors and perhaps do
20 more logging in other areas.
21 Alternatives that might have less money set aside for
22 the construction of the FEC, and alternatives, and this is one
23 that I think we would be particularly keen on, alternatives
24 that might do a little bit of experimental logging, use this
25 for its experimental purposes. Experimental logging was

O1-4 [cont.]

1 considered in Alternative No. 3, but it kind of felt like
2 vindictive experimental logging. It was clear cut, and I'm not
3 sure that we want that kind of experiment. Perhaps there are
4 some experiments that really are worth doing that could enhance
5 the overall logging in -- in Santa Cruz County, and that could
6 be done at this facility. And none of the alternatives that
7 were mentioned there really made that a viable -- a viable
8 choice.
9 I'm a little frustrated that after two years, it feels
10 like we're still working on, you know, are we going to do CDF's
11 agenda of having this look like all the rest of the
12 demonstration forests, or are we going to do this special thing
13 that AB1965 set out that might, in fact, be neat. And we've
14 been fighting over that and fighting over that. And it seems
15 like we're drawing to a point where nobody is really happy.
16 A challenge -- I really look for Jones & Stokes in
17 this whole process, the final process, to come up with a couple
18 more alternatives, alternatives that sit right there in the
19 middle that might be win-win solutions all the way around
20 instead of just drawing ourselves to a situation where no one
21 wins. That's my comments.
22 MR. SUTFIN: Thank you.
O2 23 MR. ALLEY: My name is Donald W. Alley.
24 COURT REPORTER: Spelling of your last name?
25 MR. ALLEY: A-L-L-E-Y. I've submitted written

1 comments and I suspect they'll be answered adequately in the
2 EIR, the final EIR. I'd like to summarize some of my major
3 concerns though tonight on the Draft EIR. I've been working on
4 this management plan in the forest for more than two years.
5 I've expended a lot of volunteer time. I've met some very good
6 people in the process, both foresters and people in the public
7 that are concerned about the forest. I'm speaking tonight for
8 the fish and the wildlife of the forest who don't normally have
9 a say.
10 I'm concerned that the Draft EIR is incomplete. As
O2-1 11 Mr. Morgenthler stated, some of the purposes in AB1965 were not
12 addressed. One was that it called for base line monitoring,
13 that the EIR does not mention monitoring and future monitoring
14 after harvesting ensues.
15 And another aspect that the EIR was incomplete in that
O2-2 16 it only analyzed short term management goals and not long term
17 management goals, lists harvesting level increase to 65 percent
18 of forest wide growth was not analyzed. Therefore, the DEIR is
19 incomplete.
20 I had -- I had some disagreements on the impacts of
21 the successional management zones. I think they're negative --
O2-3 22 there would be negative -- adverse impacts to animals living
23 within the zones, particularly in the Riparian Corridor and
24 around wetlands, specifically a species of special status such
25 as Steelhead Trout, Red-legged and Yellow-legged Frog, Western

O2-3 [cont.]

1 Pond Turtle, Yellow Warbler. The DEIR found no significant
2 impacts. I disagree with that based on my experience.
3 I was hoping that Jones & Stokes would consider the
4 state of the art riparian management practices, which are being
5 established in many of the national forests throughout the
6 Northwest which calls for no cut/no buffer entry -- no cut/no
7 entry buffer zones along Riparian Corridors and around
8 wetlands. Those practices are not being instituted because of
9 any reasons except that logging within those zones will cause
10 negative impacts. And at least the federal government has come
11 to realize and their forest managers have come to realize that
12 that those areas should be restricted and not have logging
13 occur in them.
14 This idea of planting or cutting down riparian trees
15 and putting and planting conifers in their place as if there's
16 a lack of suitable conifers in the riparian forest shows an
17 ignorance of the processes that exist in the Riparian Corridor.
18 The animals that live there and some 90 percent of the animal
19 diversity in the forest lives in the Riparian Corridors.
20 They're adapted to the situations that are there. Any cutting
21 of riparian trees and planting and disturbance in those areas
22 will cause negative, adverse impacts.

O2-4

23 I've worked on many EIR's and in projects where the
24 project proponent proposes to work in the Riparian Zone. In
25 every case, we have recommended that the activity period be

02-5 1 restricted to the non-breeding season for birds. At the very
2 least, I'm surprised that Jones & Stokes did not point that out
3 and restrict logging to times other than the breeding season in
4 the Riparian Corridor. It appears to me that birds just love
5 to have trees being cut down all around them and dragged out
6 while they're breeding. That's not the case. I'm surprised
7 that they didn't at least restrict logging in the Riparian Zone
8 until after July 1st, after the breeding season is over.
9 The geology and soil section, I was curious about. I
10 hope that Mr. Singer will speak to that later. I'm not really
11 an expert in geology and soils. I was surprised about some of
12 the -- the total estimates of overall erosion in the forest.
02-6 13 I'm wondering how those numbers, those percentages were arrived
14 at. I would hope that the EIR, the final EIR will go into more
15 detail on that.
16 Regarding fisheries impact of the management plan.
02-7 17 Again, any logging within the Riparian Zone will affect the
18 habitat for Steelhead trout. The -- the cover that is so
19 important to Steelhead in the summer time is dependent on
20 riparian trees that grow along the banks that provide undercut
21 banks but stable banks. If you cut those riparian trees, you
22 destroy the cover.
23 There is allusion to the need to increase the large
24 woody debris by planting conifers in the Riparian Zone. In
25 these small central coast streams, the primary cover from woody

1 debris is from riparian hardwoods, not conifers.
2 The hardwood, the riparian hardwoods when they fall,
3 they have many, many branches. They cause much more
4 heterogeneity in the stream, whereas conifers are just one big
5 log that falls into the stream. Quite often, it doesn't even
6 reach the channel because it lays across onto the other bank on
7 some of these smaller streams.
8 So, this explanation for planting conifers is more
02-8 9 applicable to large rivers up north and not to the area which
10 we're talking about. There is more than adequate cover
11 provided by the riparian trees, the hardwoods, and this idea
12 that that area has to be managed is just ill conceived as the
13 federal government is realizing. And I'm surprised that the
14 DEIR does not call that out.
15 I'm concerned about the potential recreation impacts
02-9 16 to the Riparian Zone. There's an alluding to putting
17 educational and recreational facilities in the SDSF. I'm
18 surprised that the DEIR didn't state that if these facilities
19 were put in the Riparian Zone that that would have a negative
20 impact -- adverse -- could have a negative adverse impact. And
21 I would have hoped that Jones & Stokes would have required more
22 definition on where these facilities would go and how large
23 they are. And I would hope they would glean that from the CDF
24 before the EIR so that they can address those issues in more
25 detail as to the size of the -- the facilities and where

02-9 Cont'd

1 exactly they're going to be.

2 Are they going to be trails put in the Riparian

02-10

3 Corridor from the recreation? I would hope that the EIR would

4 state that if trails are put in the Riparian Corridor, that

5 that could potentially have negative impacts. I think the job

6 of the EIR firm is to set boundaries beyond which negative

7 impacts could occur.

8 I had questions about how it was decided that humans

02-11

9 would only have access to five percent of the stream course. I

10 was wondering how that was determined. There are a number of

11 trails right now that go into the forest, into the Riparian

12 Corridor from the road that parallels East Branch Soquel Creek.

13 Once someone gets into the creek, they go can up and down

14 stream at will. Fisherman can do that. How's this five

15 percent decided? I'd like to see the details of that.

16 Just some -- some nuts and bolts things that I can

02-12

17 address based on my experience with EIR's. I expected to see a

18 plant species list in the DEIR, plant species list for the

19 forest, and I would expect those plants to be categorized as to

20 what sorts of habitat they live in, whether they're in the

21 Riparian Corridor or upland, or are they wetland species, et

02-13

22 cetera. I would expect that the wildlife species list would

23 also tell us where these animals live. And I would suspect

24 that once you do that, you're going to find that most of the

25 animal species live in the Riparian Corridor at one time or

02-13 [cont.]

1 another, particular a whole host of bird species.

2 I think failure to list where those animals live, you

3 know, brushes over the potential impacts of any activities in

4 the Riparian Corridors and around the wetlands. Typically in

5 the EIR's, you go into some detail about the habitat

6 requirements or habitat use of special status species. In this

02-14

7 case, such as the Western Pond turtle, they're known to nest a

8 considerable distance from the wetland. They have dormant

9 periods which are even further away, hundreds of meters away

10 from the wetland. What impact will logging have around these

11 sag ponds and areas where Western Pond turtle is known to

12 inhabit?

13 Also, I was surprised at the alternatives that were

02-15

14 chosen by Jones & Stokes to analyze. I don't think they were

15 reasonable alternatives. The third alternative was completely

16 illegal based on AB1965. Alternative No. 3 did not provide for

17 watershed protection, nor did it protect the residents

18 downstream of the forest, nor the residents around the forest,

19 nor the recreation that's in the forest for not hunting. I

20 don't understand how -- how an alternative could be developed

21 where they allow hunting in a fairly small forest with

22 residents living around it. The idea of clear cuts in a very

23 unstable forest completely ignores the possibility of massive

24 landsliding, logs going downstream, piling up on the bridge in

25 Soquel Village. It's an obvious safety hazard.

02-16

1 EIR should evaluate projects that are reasonable. And
2 I would have liked to have seen a project analyzed which had no
3 cut, no entry buffers along all the Riparian Corridors in the
4 places where late successional management was proposed. I
5 would have liked to have seen very restrictive logging in Amaya
6 Canyon where Mr. Singer has written to the forest and warned
7 them that if logging occurred below the thousand foot contour
8 level on the -- the USGS quad map, that very serious erosion
9 could occur and that there'd be a safety hazard to the people
10 down stream. The proposed project did not -- did not even
11 consider this added erosion potential of that Amaya Canyon.
12 This alternative -- this new alternative that I am --
13 I wish that would be analyzed would put the protection of the
14 watershed first, allow limited logging, protect the wildlife
15 and fish in the Riparian Corridors, and then with the money
16 left over, do education and facilities or education programs
17 and recreation programs. Those are the least -- the least
18 prior -- the least important of the -- of the management goals
19 as far as I can tell.

02-17

20 And it was unclear from the EIR how much each of these
21 things would cost. The second alternative was rejected because
22 apparently it wouldn't -- it wouldn't provide as much money as
23 the proposed alternative, the proposed project, but I would
24 like to see in the EIR how much each one of these projects
25 would cost so that we could see if one could be reduced or

02-17 [cont.]

1 another to allow for these no cut, no entry buffer areas, and
2 how much would you lose in timber sales if you left those zones
3 alone.
4 I had one more thing, what was it -- just flashed
5 while I was talking. Well, I can't remember. It had to do
6 with fish. Thank you.

O3

7 MR. SINGER: My name is Steven W. Singer, and that's
8 spelled Steven, S-T-E-V-E-N, and Singer is S-I-N-G-E-R. I'm an
9 erosion control consultant and I've worked in the Santa Cruz
10 Mountains here probably for about 20 years doing those sorts of
11 things. I have a number of points to make.
12 I've only worked through the third chapter of the
13 Draft EIR, so you'll probably be getting some additional
14 comments in the mail, but I'm very concerned about the Chapter
15 3 which deals with soil erosion. And I think that that
16 chapter, which I found very difficult to read, needs to be
17 completely rewritten. I think there's some major problems with
18 it. Let me just go through some of those problems.

O3-1

19 First of all, I feel that the erosion hazard is
20 understated. The assessment of erosion hazards is both
21 misleading and in places is contradictory. Let me give you an
22 example that the Draft EIR claims that erosion levels are
23 determined by natural instability and not logging related
24 activities. And we see that actually worded out in the draft
25 when it says that on page 38, it says:

1 "Effects of individual actions on water quality and
2 aquatic habitat are typically greater in highly
3 disturbed watersheds than in . . . "
4 I'm sorry. I'm reading the wrong sentence. That's spelled out
5 where it says:
6 "Erosion attributable to critical events was assumed
03-2 7 to be unaffected by either logging disturbance or
8 recovery from such disturbance."
9 And the contradictory sentence which is found on page 38, the
10 other one was found on page 315. On page 38 it says:
11 "Effects of individual actions on water quality and
12 aquatic habitat are typically greater in highly
13 disturbed watersheds than in pristine watersheds."
14 I read those as contradictory, and I agree with the second
15 statement, not the first.
16 Also, I feel that the Draft EIR claims that, while the
17 erosion assessment claims that logged areas recover from
03-3 18 disturbance after five years. And in the Draft EIR, it says on
19 page 315:
20 "Harvested areas were assumed to recover from
21 disturbance after five years following which the
22 surface erosion rate was assumed to be reduced by 50
23 percent."
24 And yet, if we turn to page 320, we can read the statement
25 that:

03-3 [cont.]

1 "SDSF gully formation related to roads and skid trails
2 was frequently observed during field visits conducted
3 for this EIR. Such conditions are commonly associated
4 with decades old skid trails."
5 And it's been my experience in the Santa Cruz mountains that
6 these old logging roads and old skid trails are a major source
7 of erosion, and I was hoping that in the Soquel Demonstration
8 Forest we would get rid of some of those, remove some of those
9 roads and remove the hazard.
10 Also, in the erosion section, it uses a predictive
11 model that is based on some work done by other researchers,
12 only it's the work done by the other researchers has been --
13 they haven't taken the whole project from them, the whole
14 database from them. They've selectively taken certain things
15 and left certain things out. And it's certainly very confusing
16 to try and read about and try and understand, but it also, I
17 believe, is not an appropriate way to draw data from which to
18 make a conclusion.

03-4

19 In particular, they excluded some field data on
20 erosion associated with harvest sites that had to do with a
21 large eroding gully. And the statement was made that gullies
22 are rare in timber harvest areas and -- or something to that
23 effect. And actually, gullies are a very common form of
24 erosion on timber harvest sites and to exclude this large gully
25 with all its intended erosion really then biased the results

03-4 [cont.]

and really in the opposite direction, it decreased the amount of sediment produced below what it should actually be in my opinion. And I also feel that the assumption in the Draft EIR that harvest sites will recover five years after disturbance, I think, is optimistic, to put it mildly.

03-5

Also, in the Draft EIR, I feel that the mitigation measures are either lacking, unlikely to provide adequate mitigation or too vague to be evaluated. In terms -- a classic example of where mitigation is needed but lacking is the discussion about Amaya Creek where the Draft EIR properly notes that this is an extremely unstable area, but then no mitigations are proposed. Instead, we see that the logging map shows that logging is planned to occur there. And I don't feel that this area should be logged.

03-6

There are also other sensitive areas in the demonstration forest that are proposed for logging in the proposal, and I don't feel that's appropriate either. In fact, I believe that this is really one of the most tragic situations to develop in this whole general management plan preparation is that CDF has more or less abandoned the goal of AB1965 which was to protect downstream residents from flooding. And I think that was an important goal of the watershed management, considerations were prime in people's minds when they lobbied for the creation of a demonstration forest, and it hurts me deeply to see that that is being abandoned now.

03-7

Some other examples of problems with the mitigation measures, we have many mitigations being suggested as simply complying with the California Forest Practice Act rules. Let's -- let's just put it this way. There are a lot of people probably in this room, certainly in the county, who would tell you that they don't feel those rules are adequate to control erosion. And I know that as an erosion control consultant that because of those rules, it's created me with some work opportunities that I wouldn't already -- wouldn't otherwise have had. So, maybe I shouldn't complain, but clearly they allow erosion to occur and in many instances they have.

03-8

Also, another inadequate mitigation is the suggestion to abandon roads as described in the Draft EIR. As described, it pretty much -- they just say remove culverts, put in some water bars, and then put barriers at the ends, and then kind of, you know, abandon it. Well, the problem when you do that is that those water bars need regular maintenance, and if you abandon the maintenance, those water bars over time deteriorate, and then if that road has any kind of a slope at all, you'll get massive gullying developing because at some point along the road, the drainage water will find a way out, a weak spot and that will erode.

And then the worst case, if that road is on a steep cross cut, you could very easily generate mud slides. And many of the mud slides -- I don't have an exact number, but after

03-8 [cont]

1 the 1982 storm where there's thousands of mud slides that
2 occurred in the Santa Cruz Mountains, I was working for the
3 Soil Conservation Service at that time, and many of these mud
4 slides that I looked at, had their point of origin as an old
5 logging road. The area had since been developed for
6 residential purposes, but these old logging roads just sit
7 around there and they're like time bombs waiting to go off.
8 So, I certainly don't recommend creating any new ones.
9 Let's talk a little bit about the water shed
10 remidiation measures. I'm disappointed in these too, I'm
11 afraid. They seem to be mostly monitoring efforts with very
12 little actual remidiation required. In fact, I could only
13 really fish out of the report six different required mitigation
14 measures. One would be the aforementioned abandoning of old
15 roads. Also, it recommends winter culvert maintenance and
16 trash rack installation. I certainly agree with that one.
17 It has some mitigations relating to the stream site
18 areas such as retaining large downed logs and fish habitat
19 streams. And for the lake successional management areas, at
20 least for five years, snakes and downed logs would be created,
21 and I think that's well and good. And it also talks about --
22 or it says that in areas where exotic plants were predominant,
23 they would be removed, and I certainly agree with that.

03-9

24 The only really mention here of sediment source
25 remidiation is something that's pretty much undefined, a vague

03-9 [cont.]

kind of a thing that would not actually be described, the type of mitigation would not actually be described until it was about to be done. And there's nothing that states the scope of this remidiation effort, how big it would have to be or how many cubic yards of soil it would need to save, or anything about its scope or extent. And as it's written now, it's strictly up to the forest manager to deem what would qualify. And, you know, if we had a forest manager in the position who just was abusing his authority, you know, theoretically you could go and build a single water bar on some road somewhere and say that he did the sediment source remidiation effort. I think it's just way too vague.

03-10

In conclusion, I agree with the previous speakers that the Draft EIR did not provide reasonable alternatives for consideration. Certainly there was none that I felt met the mandate of AB1965. Specifically, there was none that placed watershed management as the primary goal. And I feel that it should be the primary goal. And I recognize that timber harvesting is necessary to support funding watershed activities and I fully support timber harvesting in the demonstration forest, but I think it needs to be done in the right place at the right time and in the right way. I feel that the different -- the proposed project and the three alternatives given, none of them really felt acceptable to me, and I think you need to come up with some new alternatives.

03-11 Secondly, the erosion estimates for the different alternatives were invalid, I feel, because of the methodology, because you discounted gully erosion, because you assumed recovery in five years which is unrealistic, and because you amazingly, this is hard for me to comprehend, but whoever authored this report felt that logging unstabled sites will not intensify and accelerate soil erosion. And to me, that's just so basic and so common sense a concept that I'm sort of floored by the fact that it was missed.

03-12 Thirdly, I don't believe the proposed mitigation measures are adequate. And lastly, and to sum up, I think the erosion control section needs to be completely rewritten. It doesn't provide an accurate estimation of anticipated erosion rates, and I feel includes incorrect information.

03-13 Thank you very much for this opportunity to comment.

04 MS. SCHLOSSER: My name is Rhonda Schlosser, last name, S-C-H-L-O-S-S-E-R. I'm going to give you a little break and not talk as long as the last three. No offense, they were great. I'm just going to comment specifically on Chapter 7, on Recreation, Education and Visual Resources. On page 73, table 72, it states that:

> "The projections are independent of improvements in facilities and services proposed in the management plan, general management plan."

So, given this statement, I'm really concerned about the lack

O4-1

1 of depth in this draft program EIR. And I would like to ask
2 how did you determine the figures for Table 72 on the projected
3 recreation use levels for 2000 -- the year 2005. And also, the

O4-2

4 recreational facilities that are spoken about on -- oh, I
5 forget what page, as part of the comprehensive recreation plan.
6 Specifically, what additional tiered EIR report will there be,
7 and also, is there room for public comment time within that
8 tiered report?
9 And then, bouncing to the executive summary on page

O4-3

10 10, I see some contradictory statements. And perhaps it's my
11 fault. I don't quite get it here. But one of the impacts is
12 the reduction in special status wildlife species use in SDSF
13 from timber management. All three alternatives state it's less
14 than significant. However, in the proposed project, it says
15 it's beneficial for the Cooper's Hawk, Sharp-shinned Hawk, Long
16 Eared Owl, Purple Marlin, and the Yellow Warbler. Then the
17 very next impact, it states:
18 "The loss of special status species active nest sites
19 from timber management."
20 The proposed plan states that it is potentially significant and
21 the mitigation is to conduct preharvest surveys for Coopers
22 Hawk and Sharp-shinned Hawk. I don't quite understand how it
23 can be beneficial on one hand and potentially significant on
24 the other.
25 That's it. Thank you.

O5 MR. KLEINER: My name is Tim Kleiner, K-L-E-I-N-E-R, and I live on Highland Way. And I'm concerned mostly with the effects on my neighborhood which is the environment it's definitely going to impact listening to 750,000 board feet a year being cut across from my house and the dangers of wildfire and smoke erosion to my particular property and other neighbors.

O5-1 The wildfire issue talked about under public safety, the criteria for determining significant impacts or increased risk of wildfire, flooding, and landslides, and I think that there is an increased risk of wildfire in landslides that hasn't been mitigated by -- in some of these cases. For instance, in the proposed project, they say:

> "Overnight camping and fires by permit could increase risk. No mitigation required."

O5-2 But they also talk about Burrell Fire Station being the nearest source of fire protection, and four miles from the entrance to the forest. On Highland Way where I live, that has been closed for the last three years to get -- Burrell cannot get through there to the SDSF from that direction. So, that isn't a reliable way of getting fire protection and prevention or whatever to the place, to the site.

O5-3 And they say that the forest has an environment that is cool and damp. Well, not today. I live up there and it's not cool and damp. And it is during the rainy season, but

05-3 [cont]

that's kind of a deceptive statement, I think, that is a part of the year, it is cool and damp, but there's a really nice big long part of the year, especially in drought years where it could be 11 months of the year that it is dry and sometimes very hot. And the -- I contend that the reason there hasn't been much fires in the last 30 years is there hasn't been much use of that forest. But now as we increase that under some of these plans, whether they put up "No Smoking" signs and give some instructions to people how to prevent fires or not, there are going to be people that smoke, that will continue to smoke, and people that have campfires that don't do exactly like they're supposed to. They collect lumber from outside in the woods and they throw it on their fire and make it a little bigger than usual, or there isn't a person there supervising, and you've got a bunch of wild scouts or whoever is in there, you're going to have a problem unless you adequately provide for the high risk areas especially. Like if you do have some kind of group camping, that you have to have some kind of fire equipment right there on site that, you know, that at least the non-trained person could go up and get a fire extinguisher and help prevent things before they get out of hand, or some kind of water source, or something where they can hit it with a hose or something. You can't plan on their bucket to put it out. It may -- it may be too late.

05-4

The Lexington fire was mentioned in that report and we

1 all know what happened there. They say, "Oh, well, that was an
2 arson." Well, arsonists do happen. We know that from what
3 happened over in Felton a week or two ago, and that's still a
4 possibility. But the thing is the drastic impacts to the
05-5 5 residents and the forest if there is a fire in that area, in
6 that canyon, the Soquel Creek Canyon because all the slopes,
7 especially on the south side outside of the forest are very
8 dense brush and very steep, wooded slopes, that if you get a
9 fire down in the creek, the -- it's going to spread rapidly,
10 very rapidly out of control like it did in the Lexington fire
11 where it swept. They tried to stop that fire. It went on for
12 days. It went all the way down from Los Gatos all the way up
13 to the top of Loma Prieta, up that steep canyon. It's the same
05-6 14 kind of environment in the Soquel Creek Canyon where you're at
15 a steep slope and it's heavily wooded, and there's very little
16 access for fire trucks. You've got to depend on Boraid bombers
17 and helicopters, but it just -- it couldn't control the
18 Lexington fire, and I don't see it being adequate to protect
19 the residences there. So, prevention is what I'm interested in
20 taking a real -- you can't have a once in 30-year type thing.
21 There was a fire that occurred in the '60's that hit
22 the Amaya Slopes, and I have burned out redwood trees on both
23 sides of my house. But my house wasn't there at the time, but
24 it came through only about 30 years ago, and it went up that
25 slope. And it could -- could easily happen -- the risk, it

1 gets higher as the more people that are moving around down
2 below and we have to come up with something better than no
3 mitigation required on that area.
4 As far as the landslides in that area that's on the
5 north -- north section of the Soquel Creek, the area that goes
6 from the bend almost due east toward Coralitas, that last four
7 miles or so of the demonstration forest, that's -- runs along
8 the San Andreas Fault, the creek does, and the rift is also on
9 the ridge above that in the forest. I read through the SDSF
10 geological report and that report talks about the large
11 rotational landslides and the instabilities of that whole slope
12 on the south side of Santa Rosalita Mountain. The large
13 massive landslides that have moved into the creek over time
14 have made the creek shift to the north which undercuts the
15 Highland Way side, which has caused the -- has truncated the --
16 Highland Way is basically a series of massive landslides over
17 many years, and right now has a few very active ones that
18 they're trying to keep open, but that's the case all the way
19 down. It's highly susceptible to failure.
20 And as the creek cuts through, as the slides come in
21 from the SDSF side and the creek moves northward, it undercuts
22 that -- the bottom of that slope and the south-facing slope and
23 makes it more susceptible to failure.
05-7 24 What I'm suggesting is that any logging plans that go
25 on in that area, pay very close attention the sensitivity of

O5-7 [cont.]

1 the extreme steepness in that whole Soquel Creek Canyon and the
2 fact that it's on the San Andreas Fault which has already
3 destabilized the soils by cracking all the bedrock and having
4 all its features mentioned in the report that -- and these
5 large landslides that slides that have been activated, that
6 anything that will -- any logging activity that will
7 destabilize that in any way. It needs all the help it can get
8 to keep that thing from moving down.
9 As it is, across from my place there, I can spot very
10 large massive landslides where there are no trees. The trees,
11 we can hear them crashing on their own over the years during
12 rainy season and so forth, and slides falling down, a lot of
13 rock falls. The trees turn completely upside down. You can
14 see them, the slopes are so steep. So, if you start -- even if
15 you're taking them out selectively with cables or helicopters
16 or something, you're still killing off that tree or disrupting
17 the -- you're allowing more sunlight to come through on the
18 banks and whatever you're doing to disturb a delicate
19 environment is going to have a large impact on the stream and
20 the stability of the slopes on both sides of the -- of it.
21 The other thing that I find interesting is in that
22 same public safety area is the a criteria for determining
23 significant impacts is incompatible with adjacent land uses.
24 And I haven't gone into this in any great detail, but the --
25 this demonstration forest, from what I understand, is different

1 from the other ones in the California system in that it is in a
2 more densely populated area. So, the land use has to consider
3 the fact that there are residences around there.

O5-8

4 And I can hear people talking in the SDSF because of
5 the nature of the canyon, even -- it's not like on a downtown
6 where you have a lot of -- it's flat and there's a lot of trees
7 around and if somebody's next door or something, there's a few
8 things in the way. In a canyon, there's just nothing that goes
9 across. Somebody starts up a chain saw. When a motorcycle
10 slips in there and starts roaring around, it's like hold your
11 ears, really, because you can -- it resounds. It echoes. It
12 shoots across the canyon, and well, we're not looking forward
13 to long periods of logging year after year. So, I think that
14 as logging gets planned, that it should be -- at least you
15 consider its proximity to residencies in the -- residences in
16 the area, and of course, in terms of the time that it's done
17 and the location.
18 And those are most of the comments I have. Thanks.

O6

19 MS. HILLS: Ida Hills, and it's spelled just like it
20 sounds except there's an S on the end of it.
21 From the comments you have heard tonight, it is quite
22 apparent that the concerns of the Santa Cruz community are not
23 for a park where we can have cabins and tent sites and paved
24 roads. The concern instead is in terms of a literal definition
25 of demonstration forest, a living laboratory. And this is at a

1 time when we certainly have a great need for it. We have a
2 need to find ways to remedy and reverse the damage that has
3 been done to the streams and we have a need to find ways to
4 stop, to at least slow down the accelerated loss of significant
5 trees or significant redwoods that are a part of the history
6 and of the heritage of this area.
7 If you were to pick a place where you said, "I want to
8 conduct these experiments," you couldn't have picked a better
9 place than Soquel Demonstration Forest. Amaya Canyon is one of
10 only about five very small places that had a very bright red
11 tag after the earthquake in '89. It is very highly unstable.
12 After our other major disaster here in '82, probably
13 the worst flooding occurred on Soquel Creek. So, again, you
14 have an opportunity to study the factors of forestry and
15 logging as they inter-relate with both unstable land, as Mr.
16 Springer has spoken of, and as the last speaker spoke of, and
17 of the -- a creek that has been heavily degradated, that we
18 hope will have beneficial work done on it, and as our
19 specialist here says, in many cases, what we hope most will be
20 simply to let it alone, no entry, no cut.
21 And within this hope, we then would look perhaps once
22 to the first alternative, no plan. That would suit the stream
23 fine, but it would not meet the requirements of AB1965 that
24 this area should be self-sufficient. So, we're going to have
25 to turn to the trees for not only for money, but this is an

1 area where we desperately need some solid facts. I have been
2 to timber -- hearings on timber harvest plans where people
3 begged and pleaded, "Do not cut those trees on that steep slope
4 above my house. Look what happened in the flood of '82." And
5 someone says, "Oh, no, no. We had no problem here. We are all
6 in compliance with the forestry practice rules." But there is
7 no definitive study that can say within this area on this type,
8 "This is what we did. This is what we found." And this, I
9 think, is one of the things that can be done with the Soquel
10 Demonstration Forest.
11 I see genuine education a possibility, as well as
12 guided tours of school kids, see how a forest is cut. And for
13 that reason, I have been very enthusiastic about the potential
14 for really serious study on the Soquel Demonstration Forest and
15 I think -- and I have heard that expressed by others that much
16 of the success of this project is going to depend on priorities
17 and timing. Working -- or at least as a spectator to the
18 development of the plan over these last 12 months, I was very
19 pleased that the first timber harvest plan took a relatively
20 benign approach to the harvesting. They selected an area of
21 least potential damage, restricted the cutting to what was
22 essential as defined by an enabling legislation, and I haven't
23 seen it yet, but we're looking for a date with Tom to see it in
24 the very near future.
25 One of the things that struck me when the plan was

1 being put together was Mr. Sutfin's statement that this was a
2 very young forest and that it needed time to heal and to
3 mature. Then he talked of developing late succession trees,
4 and I was delighted. But when I take a look at the chart on
5 page 55, I find out of the 2,600 total acres of the park, there
6 are only 31 acres classed as late succession trees. But even
7 more astonishing, any tree over 24 inches is classed as late
8 succession -- this, any tree above that. My front yard has
9 trees like this and they're second growth. They were cut at
10 the turn of the century. They were probably cut after the San
11 Francisco earthquake. We have an acre a mile from Cabrillo
12 College. We're not up in some remote canyon, and still these
13 are the trees that -- I guess there's a couple of groves of old
14 growth redwood up there. I'm very anxious to see them. But I
15 feel that healing and maturity is certainly what we need, not
16 only in Soquel Demonstration Forest, but we're seeing other
17 areas of maybe forest being reduced to woodlands.
18 And so I hope that within the planning, they can give
19 some thought to -- not five years, I mean, how much bigger is
20 this tree going to be in five years? I don't know exactly,
21 maybe out to here. It certainly could still stand -- that's
22 still a baby. I -- so, I would like to see perhaps we can
23 combine two wish lists at once. The people concerned with the
24 stream and with the fish are wanting those trees left uncut,
25 and I'm wanting some trees left uncut to grow and develop.

O6-1

I'm beginning to hear, can you believe it, whispers from the industry that we are not -- that we are overcutting, that the quality timber, quality lumber is disappearing, that we need these bigger trees. They're looking to new ways and new regulations here in Santa Cruz County to enlarge the cut, extend the time period.

O6-2

Here again are areas that can be worked on and experimented with in the demonstration forest. As you can see, I'm thinking of cutting as little as possible and using as much money as possible on some laboratory, so -- but I think I speak for a lot of others when I say that priorities like building the education center are not the first thing. This is what I was referring to in the timing, that I do not see going out as soon as the plan is done and building our center and then put up a, "Y'all come" sign with not really a lot to show them.

I would like instead to see these solid experiments that we need so desperately conducted first, and as the use and as the need becomes absolutely pressing, we've got to have a building now when they're beating on your door that we've got to have something here, then would be the time to consider building.

In the meantime, I would like to see the trees get a chance to grow, the stream, and some of this remedial work that we need and I do hope that you're watching very carefully these very critical areas such as two people have mentioned tonight,

1 Amaya Canyon, as you begin to pick your next areas.
2 I found -- and then I'll conclude, one interesting
3 contradiction that bothers me. As others have spoken before,
4 this plan essentially addresses the general plan as it was
5 developed for the coming period of 10 years, and essentially
6 for five years in some instances. However, on page 1-2, it
7 states:
8 "The environmental impact of the types of actions
9 central to the GFMP are expected to be similar over an
10 extended period and a wide range of locations."
11 Well, now this is not true at the time if we make a change from
12 the philosophy and the constraints that have been shown in the
13 first plan, if suddenly we abandon those and go to some 65
14 percent cut. I thought 60 in Santa Cruz County was the most
15 anyone was cutting, but either way, in this immature forest,
16 that sort of harvesting just simply defeats the whole purpose
17 of -- I had the privilege of talking to Sam Farr who authored
18 this legislation, and he -- he said to me that if he hadn't
19 gone into politics he might well have joined you people as a
20 forester simply because he was so intrigued with the forest and
21 with a life of outdoors, and he hoped that we would have here
22 in this forest, to whom we give considerable credit, a solid
23 place for forest experiences, not -- not camping and parking,
24 and some really solid experimentation.
25 And these are the type of things I hope will find

O6-3

1 their way among these various alternatives into a final plan
2 for SDSF. I think it's a wonderful opportunity. Let's not
3 blow it.
O7 4 MS. BEAUTZ: My name is Jan Beautz. I'm the First
5 District Supervisor, and I'm submitting written comments, so
6 I'm not going to comment tonight. But I did have a question --
7 B-E-A -- I knew she'd ask me, B-E-A-U-T-Z.
O7-1 8 I'm a little -- I wonder if you have a distribution
9 list at this point of who's gotten the EIR and if I could get
10 that like now. I'm concerned about, there are several groups
11 dealing with Soquel Creek issues, and I just want to be sure
12 there's coordination amongst these groups, you know, since what
13 happens in one part of the creek does, so I just wondered if
14 you would be able to get me --
15 UNIDENTIFIED MALE: I can get you --
16 MS. BEAUTZ: -- that within the next day or two --
17 UNIDENTIFIED MALE: Yeah.
18 MS. BEAUTZ: -- and so I can be sure that they're all
19 aware of what's going on. Thank you.
O8 20 MR. HAMLIN: My name is Mark Hamlin, H-A-M-L-I-N. I
21 came fairly unprepared. I have some written comments, and I
22 won't need to bore you with all of them.
23 I was somewhat disappointed in the EIR. I feel that
24 it was not complete. There are many contradictions from one
25 chapter to the next, if you happen to read every sentence.

08-1 Much of it -- several aspects are incomplete. The entire EIR seems to be based on speculation, that speculation being the acquisition of the Norn property and Chai property right-of-way. At no point does the EIR address the possibility that that acquisition could become, or it could be impossible.

08-2 Two of the alternative plans that are talked about, I would question. The first one being as Don Alley said. The third one is completely illegal, and it would not be considered -- should not be considered as an alternative. The first

08-3 alternative, your so called "no project alternative" seems in some aspects as though it would be a project, and that is through the acquisition of the Norn property and building a parking lot.

08-4 The EIR states a couple of places that a more thorough recreation plan is to be done at a later date. As a major component of CDS plans, as the EIR says, I would expect this to be included now. Why is this not done now? It makes the whole thing incomplete.

08-5 The traffic analysis, there is no traffic analysis for some roads as in some -- and some sections, I believe the north section of Old San Jose Road from -- I believe from Ollie Springs to the summit, there is no traffic analysis done for that. There is no mention of how 8,000 bicycles are going to

08-6 be entering the park each year and what percentage of them will be using the Old San Jose Road.

08-6 [cont.]

What impact will that percentage of 8,000 bicycles have on traffic on Old San Jose Road? Why are they not included as vehicles? They are, under California law, a legal vehicle. Why is that -- not traffic not -- why is not that -- that not stated in the report?

08-7

The EIR does not graph the points at which the roads fall from a C rating to a D rating. How many vehicles more will it take for that -- for Old San Jose Road to go to a D rating which would, as the EIR says, make it an adverse impact?

08-8

It doesn't talk too much about Highland Way other than to say that Highland Way has been blocked for two years with slides. Well, I've county files dating back -- they have them back to -- down to '69, show that Highland Way has been a constant problem with slides, and it has been closed regularly. And this should be said and stated in the EIR.

And that kind of leads me to believe that the entire access problem has not been addressed. It's still incomplete. It's based entirely on speculation.

And I think that's all I need to say for now.

MR. ALLEY: Is it possible for me to comment again, or did I -- if there isn't anyone else.

MR. DENNIS: Who else would like to comment? Well, we won't close off comments yet. Don, you're --

MR. ALLEY: Okay.

MR. DENNIS: -- take another crack at it.

O2 [cont.]

MR. ALLEY: I remembered -- it's Don Alley again. I remembered what I was concerned about. One of the major goals of the proposed project is to provide fishery enhancement in the streams. And on the surface, that sounds like a good idea. What is mentioned in the Draft EIR is that structures will be placed in the stream to encourage pool formation. And log jams will be removed to improve fish passage if necessary.

O2-18

As a fishery biologist in the area for more than 15 years, my experience has been that fishery enhancement projects are short-lived at best, and almost in all cases, worthless after a few short years, but yet they're very, very expensive. And in a situation where the SDSF is -- won't have an abundance of funding and because the amount of money generated from the trees will affect the final form of the management plan, I'm concerned that money could be wasted on fishery enhancement projects, so I would like to see how much money would be expended for that part of the proposed project. I would like to see that kind of detail in the EIR.

O2-19

In a Riparian Corridor where you have no cut, no entry buffer zones, I believe that there would be adequate woody debris falling into the stream either from riparian trees falling during storms or from landslides that naturally occur, that there would be plenty of woody debris to help generate scour for pool formation. And that would be much better than putting artificial structures in the stream. So, that was my

O1 [cont]

other comment. Thank you.

MR. MORGENTHLER: Since we're doing --

MR. DENNIS: Seconds.

MR. MORGENTHLER: -- seconds, I'll save myself some writing and discuss the noise -- noise topic that I was asked to discuss. My name is Mark Morgenthler. The noise chapter did a -- built a very detailed model of how noise would affect the environment in the Soquel Demonstration Forest. Basically, it was a very nice tabulation where it was concluded that three chain saws would generate 88 db of acoustic noise that the source, and that if you were 600 feet away, the noise level would drop taking into account the propagation effects, et cetera, et cetera, to 65 db, 65 db being the either the maximum or the recommended noise level in residential areas.

The -- that -- when you look at that on a map, and this is one of the maps that's included in the demonstration forest, this nickel is about 600 feet, and the conclusion was that since this nickel represents the way in which the noise would propagate to that level that was a maximum level allowed in residential areas, since that level is no bigger than this nickel, there would not be a substantial impact.

The comparison, however, is a comparison to the maximum level allowed in residential areas. And one of the reasons all of us live up there in the middle of the woods is because we like the peace and quiet that you get in that area.

1 Indeed, the report states that the existing ambient noise level
2 is 30 db in that area. And if you look at the tabulations that
3 are included in the chapter and you compare and you try to
4 calculate what area of the noise covers that is above the
5 ambient noise level, it turns out to be like this size. And
6 now, if you compare this to the Soquel Demonstration Forest,
7 you can see that just about anyplace where you have three chain
8 saws running in the forest, you can hear it. Since, for those
9 of us who live there, we know that to be the truth and it kind
10 of validates the model.

O1-5

11 I think the point here is that one of the -- one of
12 the criteria for deciding that something is a significant
13 environmental impact is not that -- just that it exceeds
14 regulations for residential areas, but that it exceeds existing
15 noise levels. And I think that criteria needs to be examined.
16 That's certainly what all of us worry about when we -- when we
17 think about the timber harvesting activities that could be
18 going on there.

O1-6

19 It also was pointed out that the 88 db level is what
20 you have when you have three chain saws running, and that some
21 of the other types of harvesting activities, contemplate -- of
22 helicopters and cable yarding apparatus that are 10 to 50 times
23 louder than the chain saws. And I think when you compare those
24 against the existing ambient noise levels, you'll find that
25 that may be a significant environmental impact that may need

1 some mitigation matters that are not covered in the existing
2 Draft EIR. Thank you.
3 MR. DENNIS: Any more comments?
4 UNIDENTIFIED MALE: Figure that --
5 MR. MORGENTHLER: Figured it out, huh? The only thing
6 the right size in the house --
7 UNIDENTIFIED MALE: Oh, I see.
8 MR. MORGENTHLER: -- to my --
9 MR. DENNIS: Anything you want to add?
10 (No verbal response.)
11 MR. DENNIS: Well, thank you all for your comments.
12 We don't have a specific date when the final EIR will be
13 published, but we'll keep Tom posted, and I'm sure he'll advise
14 the advisory committee on the schedule. And that concludes our
15 hearing. Hearing adjourned.
16 (Whereupon, the hearing was adjourned at this time.)
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1 C E R T I F I C A T E

2

3 THIS IS TO CERTIFY that I, (we), have duly transcribed
4 from audiotape the foregoing proceedings to the best of my
5 ability, and that the foregoing pages constitute a true,
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8 I further certify that I am not of counsel or attorney
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11 the cause named in said caption.
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15 Rebecca L. Lentz
16 Rebecca L. Lentz
17 9-1-95
18 Date
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Response to Comment O1-1. Refer to Substantive Issue 1-5, "Effects of Implementing the Proposed Long-Term Increase in Harvesting Rate".

Response to Comment O1-2. Refer to Substantive Issue 1-2, "Consistency with Legislative Goals and Objectives".

Response to Comment O1-3. Refer to Substantive Issue 2-2, "Harvesting in Late Succession Management Areas".

Response to Comment O1-4. Refer to Substantive Issues 1-2, "Consistency with Legislative Goals and Objectives" and 1-4, "Reasonable Range of Alternatives".

Response to Comment O1-5 and O1-6. Refer to Substantive Issue 7-4, "Methodology and Significance Criteria for Noise Impacts".

Response to Comment O2-1. The draft EIR discusses baseline inventories for watershed monitoring as part of the proposed project on page 2-9. Refer also to Substantive Issue 3-4, "Ongoing Performance Monitoring Program", and Appendix A of this final EIR.

Response to Comment O2-2. Refer to Substantive Issue 1-5, "Effects of Implementing the Proposed Long-Term Increase in Harvest Rate".

Response to Comment O2-3. Refer to Substantive Issues 2-2, "Harvesting in Late Succession Management Areas" and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment O2-4. Refer to Substantive Issues 2-3, "Planting of Conifers in Riparian Zones to Promote Recruitment of Instream Large Woody Debris" and 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Zone Vegetation and Wildlife".

Response to Comment O2-5. Refer to Substantive Issue 2-3, "Planting of Conifers in Riparian Zones to Promote Recruitment of Instream Large Woody Debris", and the response to comment 18-55.

Response to Comment O2-6. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment O2-7. Refer to Substantive Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Zone Vegetation and Wildlife" and the response to comments 18-37 and 18-38.

Response to Comment O2-8. Refer to Substantive Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comment O2-9. Refer to Substantive Issues 2-1, "CEQA Review of SDSF Recreation Master Plan", and 4-2, "Impacts of Public Use and Related Facility Development on Riparian Habitat".

Response to Comment O2-10. Refer to Substantive Issue 4-2, "Impacts of Public Use and Related Facility Development on Riparian Habitat" and the response to comment 18-45.

Response to Comment O2-11. Refer to Substantive Issue 4-2, "Impacts of Public Use and Related Facility Development on Riparian Habitat"

Response to Comment O2-12. Refer to the response to comment 18-53.

Response to Comment O2-13. Refer to the response to comment 18-56.

Response to Comment O2-14. Refer to the response to comment 7-36.

Response to Comment O2-15. Refer to Substantive Issue 1-4, "Reasonable Range of Alternatives".

Response to Comment O2-16. Refer to Substantive Issues 1-4, "Reasonable Range of Alternatives", 2-2, "Harvesting in Late Succession Management Areas", and 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment O2-17. Refer to Substantive Issue 1-1, "Timber Revenues and Operational Costs".

Response to Comment O2-18. Refer to Substantive Issue 1-1, "Timber Revenues and Operational Costs", and the response to comment 18-12.

Response to Comment O2-19. Refer to Substantive Issue 4-1, "Effects of Planting Conifers and Harvesting Hardwoods on Riparian Habitat and Wildlife".

Response to Comments O3-1 through O3-4. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment O3-5. Refer to Substantive Issue 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment O3-6. Impacts on flooding risks were assessed in Chapter 6 of the draft EIR and determined to be less than significant. Also refer to Substantive Issue 3-5, "Sedimentation and Flooding in Amaya Basin".

Response to Comment O3-7. Refer to Substantive Issues 1-3, "Adequacy of the Rules to Avoid Significant Environmental Impacts", and 3-3, "Project Level Erosion and Sediment Control".

Response to Comment O3-8. Refer to Substantive Issues 3-3, "Project-Level Erosion and Sediment Control", and 3-4, "Ongoing Performance Monitoring Program".

Response to Comment O3-9. Refer to Substantive Issue 3-2, "Significance Criteria for Sedimentation Impacts" and Appendix A to this final EIR.

Response to Comment O3-10. Refer to Substantive Issue 1-4, "Need to Analyze a Reasonable Range of Alternatives".

Response to Comment O3-11. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment O3-12. Refer to Substantive Issues 3-2, "Significance Criteria for Sedimentation Impacts", 3-3, "Project-Level Erosion and Sediment Control" and 3-4, "Ongoing Performance Monitoring Program".

Response to Comment O3-13. Refer to Substantive Issue 3-1, "Methodology for Estimating Erosion and Sedimentation Rates".

Response to Comment O4-1. Refer to Substantive Issue 6-1, "Public Use Projections".

Response to Comment O4-2. Refer to Substantive Issue 2-1, "CEQA Review of SDSF Recreation Master Plan".

Response to Comment O4-3. Impacts of implementing proposed timber operations on use of SDSF by general wildlife and by special-status species would be either beneficial or, if adverse, less than significant because some riparian habitats (i.e., the late succession management areas) would receive enhanced protection under the proposed project and because the proposed harvesting would not substantially modify forest habitat structure. Implementing specific projects could adversely affect nesting birds, however, if timber operations occurred near nest trees. Such site-specific impacts will be avoided at the project level by surveying proposed logging areas for active nests during timber harvesting planning.

Response to Comments O5-1 through O5-3. Refer to Substantive Issue 5-1, "Wildfire Risks".

Response to Comment O5-4. The proposed project has been revised to incorporate additional fire protection measures (i.e., restriction of open fires to fire rings, preclusion of open fires during periods of high or extreme fire danger, and the required closing of SDSF to public use when fire risks become excessive). Refer to Substantive Issue 5-1, "Wildfire Risks".

Response to Comment O5-5. Refer to Substantive Issue 5-1, "Wildfire Risks".

Response to Comment O5-6. Refer to the response to comment O5-4.

Response to Comment O5-7. Refer to Substantive Issue 3-2, "Significance Criteria for Sediment Impacts".

Response to Comment O5-8. Refer to Substantive Issue 7-4, "Methodology and Significance Criteria for Noise Impacts".

Response to Comment O6-1. Refer to Substantive Issue 4-3, "Achieving Maximum Sustained Production".

Response to Comment O6-2. Refer to Substantive Issue 1-4, "Need to Analyze a Reasonable Range of Alternatives".

Response to Comment O6-4. Refer to Substantive Issue 1-5, "Effects of Implementing the Proposed Long-Term Increase in Harvest Rate".

Response to Comment O7-1. A copy of the final EIR distribution list has been provided to the commenter.

Response to Comment O8-1. Refer to Substantive Issue 7-1, "Location of the New Access Road".

Response to Comments O8-2 and O8-3. Refer to Substantive Issue 1-4, "Reasonable Range of Alternatives".

Response to Comment O8-4. Refer to Substantive Issue 2-1, "CEQA Review of SDSF Recreation Master Plan".

Response to Comment O8-5. Traffic was analyzed for Soquel-San Jose Road from Hilltop Road near Soquel Village north to Summit Road. Refer to Table 8-2 in the draft EIR.

Response to Comment O8-6. Refer to Substantive Issue 7-3, "Bicycle Traffic".

Response to Comment O8-7. Refer to the response to comment 19-20.

Response to Comment O8-8. Refer to the response to comment 6-1.

Section 4. Citations

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PERSONAL COMMUNICATIONS

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Appendix A. Monitoring Plan for Soquel Demonstration State Forest

WATERSHED MONITORING

Timber Operations

To avoid adverse impacts on water quality and fisheries resulting from the discharge of sediment to watercourses attributable to timber operations, Soquel Demonstration State Forest (SDSF) staff will monitor all timber operations (including all harvesting areas and new roads, skid trails, and landings) annually for 5-7 years following completion of the operations. Occurrences of substantial surface erosion (i.e., gullies) or mass wasting (i.e., landslides or slumps) resulting from the operations will be identified and described by a registered professional forester (RPF). Each substantial gully or landslide will be evaluated to determine its cause and identify stabilization measures that would be most feasible, effective, and cost effective. Such measures will be implemented within 90 days from the date when the subject site is identified, unless due cause for delay is explained and a reasonable alternative schedule for implementation is proposed by the SDSF forest manager. If, based on the judgment of a registered engineering geologist (REG), no stabilization measures are feasible or reasonable to apply to the subject site, feasible offsite watershed remediation measures will be implemented as recommended by the REG in conjunction with the next timber operation conducted at SDSF.

The SDSF forest manager will describe appropriate mitigation measures to be incorporated into future timber operations and specified in future timber harvesting plans (THPs) to avoid a recurrence of the observed erosion or mass wasting events. The timber harvesting plan checklist for SDSF (Appendix B of the Final Environmental Impact Report for the Soquel Demonstration State Forest General Forest Management Plan) will be revised to require incorporation of such mitigation measures.

Roads

By December 31, 1997, the California Department of Forestry and Fire Protection (CDF) will inventory, delineate, describe, and risk-rate each segment of forest road at SDSF. A similar inventory of constructed skid trails will be completed by June 30, 1998. This information will be compiled into a database to be maintained on an ongoing basis. The description and risk-rating of segments will focus on conditions affecting the risk that runoff will cause erosion resulting in substantial sediment discharge to a watercourse. Such conditions will include, but are not limited to:

- presence of inside ditches,
- stability of fill deposits,
- adequacy and reliability of drainage structures,
- grade,

- potential for a diverted watercourse to be transported down the roadway,
- proximity to a watercourse, and
- existing substantial gullies.

By June 30, 1998, CDF will identify and design feasible projects to remediate sediment-discharge risks associated with each high-and extreme-risk road segment and estimate the cost-effectiveness (in dollars per cubic yard of sediment) of each such project. Such projects could include abandonment or recontouring of roads, or installation of improved drainage structures.

Culverts

By December 31, 1996, trash racks will be installed above the inflow to each culvert at SDSF. Any culverts for which trash rack installation is not needed (based on low risk of culvert failure) will be identified and explained by a RPF. The trash racks will be maintained on at least an annual basis, or more frequently if required based on the occurrence of storm events.

By December 31, 1997, CDF will inventory, delineate, describe, and risk-rate each culvert at SDSF. This information will be compiled into a database to be maintained on an ongoing basis. The description and risk-rating of each culvert will focus on the potential for culvert failure to result in diversion of flows and consequent erosion and discharge of sediment to a watercourse. The risk rating will be based on standard engineering criteria for adequate culvert sizing, including effective culvert diameter, extent of tributary area, and intensity of a storm with a 50-year recurrence period.

By December 31, 1997, CDF will identify and design feasible projects to reduce the risk of failure of high- or extreme-risk culverts, and estimate the cost-effectiveness (in dollars per cubic yard of sediment) of each such project. Such projects could include replacement of existing culverts with more reliable drainage structures (e.g., rocked dips) or larger culverts.

Active Landslides and Sediment Stores

By June 30, 1998, CDF, in conjunction with a REG, will inventory, delineate, describe, and risk-rate active landslides and substantial unconsolidated concentrations of sediment and debris at SDSF. This information will be compiled into a database to be maintained on an ongoing basis with new landslides added as they occur. Unconsolidated concentrations of sediment and debris and active landslides identified by Manson and Sowma-Bawcom (1992) will be included in the database. The description and risk-rating of segments will focus on conditions affecting the likelihood that runoff or seismic activity will cause mass movement resulting in sediment discharge to a watercourse.

By June 30, 1998, CDF will, in conjunction with a REG, identify and design feasible projects to reduce the risk of failure of high- or extreme-risk landslides and sediment-debris stores, and estimate the cost-effectiveness (in dollars per cubic yard of sediment) of each such project. Landslide risk-reduction projects could include installation of drainage structures on roads above landslides to reduce the discharge of concentrated runoff onto the landslide, or armoring or buttressing of landslide toes. Sediment-debris store risk-reduction projects could include recontouring or removal of material to reestablish original watercourses, bucking of logs in debris piles and using the logs to armor eroding bank faces, or revegetation.

Amaya Basin

To minimize the risk of adverse effects on water quality and fisheries resulting from timber operations in Amaya Basin, by December 31, 1997, CDF will, in conjunction with a REG, prepare a map of Amaya Basin depicting risk of mass movement. The map will delineate risk classes for deep- and shallow-seated mass movements and for surface erosion.

Remediation Projects

By June 30, 1998, CDF will prioritize all sediment-discharge projects identified and designed to remediate high- or extreme-risk conditions, as described above. Such projects will be implemented in conjunction with future timber operations according to their priority as available funding permits, to ensure, to the extent practicable, that no significant increase in sedimentation results from the timber operations proposed in each THP.

To avoid adverse impacts of implementing remediation projects on water quality and fish habitat, CDF will evaluate the performance of each previously-implemented remediation project to determine whether the project was successful in reducing risk of large-scale sedimentation. Performance monitoring will be conducted following each storm event estimated to have a recurrence period of at least 2 years and continue for at least 4 years. If CDF determines that any project is not meeting its intended objective, CDF will redesign and modify the project as needed.

AQUATIC RESOURCE MONITORING

Fisheries Management Plan

By December 31, 1997, CDF will adopt a fisheries management plan for SDSF specifying in detail all aquatic-resource monitoring activities to be implemented on an ongoing basis, including

monitoring frequency and intensity. The aquatic-resource monitoring program will include the first four items described below.

Fish Populations

Fish population surveys will be conducted annually through 1997 and periodically thereafter. Sampling will occur at a minimum of four permanent stations, including stations on the East Branch and Amaya Creek.

Habitat

Aquatic habitat surveys will be conducted at least once every 10 years and, to the extent possible, will use methodologies recommended by the California Department of Fish and Game (DFG).

Pool Sedimentation

Sedimentation levels will be monitored at a minimum of four pools. The same pools will be monitored annually through 1999 and periodically thereafter.

Aquatic Invertebrates

Ecological condition of aquatic habitats will be monitored by sampling of invertebrates using the protocol developed by the U.S. Environmental Protection Agency in cooperation with DFG. Sampling will occur at three stations, including at least two stations where fish population surveys take place, at least annually through 1999 and periodically thereafter.

Habitat Enhancement Structures

Fish habitat enhancement structures will be reviewed and approved by DFG and a qualified hydrologist before installation.

To avoid adverse impacts of habitat-enhancement structures on fish habitat, CDF, in conjunction with DFG, will evaluate structures annually for three years following installation to

determine whether they are performing as intended and whether they are causing any unintended adverse impacts on fish habitat. If CDF and DFG determine that any structure is functioning improperly or is adversely affecting aquatic habitat, CDF will redesign, repair, or remove the structure, as needed.

Fish Poaching and Harassment

To avoid adverse impacts of public use on fish, CDF and DFG will conduct ongoing patrols in SDSF to enforce prohibitions on fishing and fish harassment. Incidents of fishing or harassment will be recorded and compiled. CDF and DFG will evaluate such information annually in conjunction with fish population estimates to determine whether poaching or harassment have had a significant adverse effect on SDSF fisheries. If so, CDF will respond by closing streamside trails and intensifying law enforcement (e.g., increased patrols of streamside roads) as needed to ensure rapid fishery recovery and avoid additional adverse fishery effects.

RIPARIAN RESOURCE MONITORING

To avoid adverse impacts of public use on riparian habitat, CDF will conduct ongoing patrols in SDSF to enforce prohibitions on vandalism and other damage to riparian habitat related to public use. Incidents of damage will be recorded and compiled. A qualified wildlife biologist will evaluate such information annually to determine whether the damage constitutes a significant adverse effect on wildlife. If so, CDF will implement additional restrictions on public use (e.g., prohibiting camping or weekday recreation use or cordoning off of sensitive areas) as needed to ensure rapid habitat recovery and avoid additional adverse wildlife effects.

WILDFIRE MONITORING

To minimize increases in wildfire risks resulting from increased public use at SDSF, CDF will record and compile descriptions of all wildfires occurring at SDSF including ambient weather and fire hazard conditions, ignition source, area and vegetation types burned, and estimated damage. Such information will be evaluated annually to determine whether wildfire incidents have increased substantially in frequency or intensity relative to 1990-1995 conditions. If so, CDF will implement appropriate measures (e.g., prohibiting all fires or weekday recreation use, or allocating additional fire-suppression resources for SDSF) as needed to reduce wildfire risks.

EMERGENCY SERVICES MONITORING

To minimize adverse effects on emergency response performance for residents of Santa Cruz County resulting from increased demands for such services at SDSF, CDF will record and compile all requests for emergency responses, including requests for police, fire, medical, or search and rescue services. Descriptions of emergency responses will include response times. Such information will be evaluated annually to determine whether the demand for emergency services or average emergency response time has increased substantially relative to 1990-1995 conditions. If so, CDF enhance its emergency response capability by upgrading roads; developing additional helispots along remote trails; and, either directly or through a management agreement with another qualified entity, providing additional human and equipment resources for emergency response at SDSF.

NUISANCE MONITORING

To minimize nuisance impacts on SDSF neighbors, CDF will record and compile descriptions of all reported nuisances caused by SDSF users at SDSF or on adjacent ownerships including, but not limited to, trespass, vandalism, littering, and noise. CDF will organize and supervise a volunteer patrol force to assist in this effort. Nuisance reports will be evaluated annually to determine whether nuisance incidents had increased substantially in frequency or intensity relative to 1990-1995 conditions, and whether such a trend constitutes a significant adverse impact on neighbors. If so, CDF will implement additional restrictions on public use (e.g., prohibiting weekday recreation use) and intensified law enforcement (e.g., increased patrols) to ensure that nuisances caused by SDSF users are minimized.

PUBLIC-USE MONITORING

CDF will use camping records, surveys, and other information to compile annual estimates of public use of SDSF in user days. Use will be estimated for specific activities including, but not limited to, mountain biking, camping, equestrian use, and educational activities.

CITATION

Manson, M. W., and J. A. Sowma-Bawcom. 1992. Geology, slope stability, and earthquake damage in Soquel Demonstration State Forest. California Department of Conservation, Division of Mines and Geology. Sacramento, CA.

Appendix B. Soquel Demonstration State Forest Timber Harvesting Plan Checklist

INTRODUCTION

This checklist has been prepared as an appendix to the final program environmental impact report (EIR) for the General Forest Management Plan for Soquel Demonstration State Forest (SDSF). It is intended to be completed for, and submitted with, each timber harvesting plan (THP) prepared for SDSF by a registered professional forester (RPF). Answering several questions requires consultation with other qualified resource specialists, such as a registered engineering geologist, hydrologist, or wildlife biologist. The objective of completing the checklist is to determine whether the timber operations proposed in each THP are consistent with the project proposed in, and thus covered by, the program EIR. No significant environmental impacts are expected to result from implementing such timber operations in conjunction with the mitigation measures required either by the California Forest Practice Rules (Rules) or specified in the EIR.

By completing this checklist, the RPF will identify any aspects of the operations that could result in significant environmental impacts. Such operations must be modified or mitigated to make them consistent with the project described in the EIR. Otherwise, additional environmental assessment must be conducted pursuant to the California Environmental Quality Act (e.g., a negative declaration or supplemental EIR) before the operations are implemented.

Most of the following questions can be answered based directly on the RPF's knowledge of the physical and biological attributes of the logging area in relation to the proposed operations. Some of the questions address resource protection indirectly by evaluating compliance with operational standards specified in the California Forest Practice Rules (i.e., Title 14 of the California Code of Regulations) effective as of the date of certification of the EIR.

This checklist may be revised as needed by the SDSF forest manager only if such revisions include resource protection standards at least as stringent as those specified or implied in the following items.

CHECKLIST

		Yes	No
I. Silviculture			
1.	Are all trees proposed for harvesting outside of designated old-growth redwood areas?	❑	❑
2.	Will the proposed timber operations avoid disturbance to all old-growth conifer trees?	❑	❑

		Yes	No
3.	If any portions of the logging area are within 300 feet of a Class I watercourse:		
	a. will the residual stand provide total crown cover of at least 75% in multiple layers?	❑	❑
	b. will trees in the residual stand that are at least 24 inches in diameter at breast height (dbh) provide at least 25% crown cover?	❑	❑
	c. will all trees with a portion of their crown extending over the watercourse be retained or, if not, has a qualified hydrologist or wildlife biologist verified that removing such trees would enhance riparian function?	❑	❑
	e. will all snags at least 20 inches dbh and 15 feet tall and all trees that support bird nests, cavities, or large limbs suitable for nesting be retained in the residual stand?	❑	❑
	f. will down logs at least 24 inches dbh and 30 feet long occur at an average density of at least 2 per acre following completion of timber operations?	❑	❑
	g. will tractor use or cable-yarding be restricted to predesignated corridors?	❑	❑
	h. have all trees to be harvested been marked and all wildlife trees and down logs to be retained been designated?	❑	❑
4.	Will the residual stand meet the stocking requirements of CCR 913.8?	❑	❑
5.	If less than 40% of all trees greater than 18 inches dbh, or 50% of all trees 12-18 inches dbh will be retained in a well-distributed pattern in a harvest area:		
	a. is an intermediate treatment based on individual-tree selection silviculturally inappropriate or infeasible?	❑	❑
	b. will all resulting unstocked areas be less than 0.5 acre?	❑	❑
	c. will a well distributed crown cover retain at least 50% of the pre-existing canopy?	❑	❑

		Yes	No
6.	If any areas stocked predominantly with hardwoods are proposed for regeneration harvest and conversion to coniferous vegetation, is the cumulative acreage of such conversions (including those proposed in this THP) during the past 10 years less than 16 acres?	❑	❑

II. Harvesting Practices and Erosion Control

7.	Will felling practices conform with the standards of 14 CCR 914.1?	❑	❑
8.	Will tractor use be avoided on all slopes exceeding 50%?	❑	❑
9.	If any skid trails require excavation or construction, has a registered engineering geologist verified that use of graded skid trails been minimized to the extent feasible?	❑	❑
10.	If any new skid trails are proposed for use in lieu of existing skid trails, has a registered engineering geologist verified that such new trails will be constructed and used only where doing so would reduce erosion relative to use of existing trails?	❑	❑
11.	Will skid trail watercourse crossings conform with the standards of 14 CCR 914.8?	❑	❑
12.	If cable yarding will be used, will it conform with the standards of 14 CCR 914.3?	❑	❑

III. Roads and Landings

13.	Will existing roads be used whenever feasible?	❑	❑
14.	To the extent possible, will new roads and landings be located to avoid unstable areas?	❑	❑
15.	Will all new roads be a single lane with turnouts?	❑	❑
16.	Will all new roads have grades less than 15% except for pitches of up to 20% that are less than 500 continuous feet?	❑	❑

		Yes	No
17.	If any landings or roads longer than 100 feet are located on slopes over 65%, or on slopes over 50% that are within 100 feet of the boundary of a watercourse or lake protection zone (WLPZ), have measures to minimize movement of soil and the discharge of concentrated runoff been incorporated in the THP? *Any mitigation measures specified by the registered engineering geologist required to reduce impacts to a less- than-significant level must be described in detail in an attachment to this checklist.*	❑	❑
18.	Has a registered engineering geologist reviewed and approved all alignments proposed for road construction and reconstruction and areas proposed for landing construction? *Any mitigation measures specified by the registered engineering geologist required to reduce impacts to a less- than-significant level must be described in detail in an attachment to this checklist.*	❑	❑
19.	Is the total length of roads constructed in SDSF (including roads proposed in this THP) over the past 10 years less than 7 miles?	❑	❑
20.	Will all existing roads, skid trails, and landings in the logging area that could not be newly constructed in conformance with the California Forest Practice Rules be abandoned, stabilized, revegetated, and restricted from vehicular use, except where a registered engineering geologist has verified that use of the existing facilities would result in less environmental impact than construction and use of a new facilities constructed in accordance with these rules?	❑	❑
21.	Will all tractor operations be conducted between April 15 and October 15?	❑	❑

IV. Watercourses and Lakes

22.	Will Class I, II, III, and IV WLPZs be designated and protected consistent with the standards of 14 CCR 916.5? *Any mitigation measures specified by the RPF required to reduce impacts to a less-than-significant level or protect the beneficial uses of water must be described in detail in an attachment to this checklist.*	❑	❑
23.	If heavy equipment will be used in a WLPZ, has each such use of heavy equipment been explained and justified and the locations of such use been flagged and marked?	❑	❑

		Yes	No
24.	Will construction, reconstruction, and use of roads, skid trails, and landings be avoided in all watercourses, lakes, marshes, wet meadows, other wet areas, and within WLPZs, except at prepared crossings?	❑	❑
25.	Will all vegetation bordering and covering marshes, meadows, other wet areas, or lakes be retained and protected?	❑	❑
26.	Will all trees cut within a WLPZ be felled away from the watercourse?	❑	❑
27.	Will at least 50% of the overstory and at least 50% of the understory canopies be retained in each WLPZ?	❑	❑
28.	Will one or more watershed remediation projects be implemented in conjunction with the proposed timber operations to ensure that the timber operations do not contribute to a significant cumulative impact on water quality or fish habitat? *Each such watershed remediation project must be described in detail in an attachment to this checklist.*	❑	❑

V. Wildlife

29.	Have surveys been conducted in the logging area this season for active nests of the Cooper's hawk, sharp-shinned hawk, long-eared owl, and yellow warbler?	❑	❑
	a. If any such nests were found in the logging area, will timber operations commence after August 1?	❑	❑
30.	Does the logging area exclude all stands of at least 20 acres with large decadent trees, snags, and large down logs where the quadratic mean dbh of dominant and predominant trees exceeds 24 inches?	❑	❑
31.	If any snags present in the logging area are proposed for removal, will snag removal conform with the standards of 14 CCR 919.1?	❑	❑

		Yes	No
VI. Maximum Sustained Production of High Quality Forest Products			
32.	Since completion of the most recent timber operations at SDSF, has the average annual rate of timber harvesting (including the volume proposed for harvesting in this THP) been less than 750 thousand board feet (MBF)?	❑	❑
33.	Over the past 10 years, has the cumulative volume of timber harvested at SDSF (including the volume proposed for harvesting in this THP) been less than 7,500 MBF?	❑	❑

CERTIFICATION

I have the authority and responsibility for the preparation and supervision of the THP. I also have authorization to make amendments to the plan. I certify that the Notice of Intent has been mailed to those parties listed pursuant to sections 14 CCR 924.1 and 926.3.

After considering the EIR for the General Forest Management Plan for Soquel Demonstration State Forest and the mitigation measures required by the EIR and the Rules, I have determined that the timber operations are consistent with the EIR and the operational aspects of the Rules, and will not have a significant adverse impact on the environment.

I certify that I am a registered professional forester, that I personally inspected the plan area, and that the plan complies with the Forest Practice Act and the operational aspects of the California Forest Practice Rules.

Signature:_____ Date:_____

Appendix C. Examples of Site-Specific Erosion and Sedimentation Control Practices

HARVESTING PRACTICES AND EROSION CONTROL

19. Indicate type of yarding systems to be used this plan:

1[X] Tractor, skidder, forwarder 2[ ] Balloon, helicopter 3[ ] Cable, ground-lead
4[ ] Cable, high-lead 5[ ] Cable, skyline 6[X] Animal (Horse)

7[ ] Other:_____

20. [ ] Yes [X] No Will tractor constructed layouts be used?
21. [X] Yes [ ] No Will tractors be used for directional tree pulling?

Check items 22 through 25 that apply to the use of tractors.

22. [X] Yes [X] No Operations on unstable soils or slide areas?
23. [ ] Yes [X] No Operations on slopes over 65%?
24. [ ] Yes [X] No Operations on slopes over 50% with high or extreme EHR?
25. [ ] Yes [X] No Operations within cable yarding areas?

If any of items 22 through 25 are answered yes, explain and justify as required by the rules:

Operations on Unstable Soils or Slide Areas
Preceeding the point where the Old Spanish Ranch Road meets the eastern THP boundary, this road will be opened for tractor skidding only and not for truck traffic. At this point it will be neccessary for avoiding adverse skidding to cross a small cut bank failure which will access timber across the upper reaches of a class III watercourse (see #27, mitigation (f) for specific erosion control and stabilization measures to be taken).

Equipment Exclusion Zones
There are a few slides and unstable areas within the boundaries of the THP. Most of these are a result of the 1989 Loma Prieta earthquake and are located in the northwest portion of the harvest area. The extent of instability includes slides into class III watercourses and cracking in the ground above the slides. Because of their condition, these areas have been flagged as equipment exclusion zones. One additional depression in the northwest portion of the harvest area has been flagged for equipment exclusion due to the possibility of a high water table and proximity to a class III watercourse (see THP map #1).

Sections of class III watercourses within the proposed harvest area have slopes greater than 50% along their banks. The two watercourses along the northern border of the harvest area have numerous bank failures and the watercourse above crossing #3 contains one bank failure. To avoid aggravation of and additional disturbance to these failures, equipment will also be excluded within 25 feet slope distance from all class III watercourses and anywhere within the harvest area where slopes exceed 50%. One exception to this 25-foot limitation will be made where Old Spanish Ranch Road meets the eastern THP boundary: a proposed tractor trail will cross the upper reaches of a class III watercourse (see #27, mitigation (f) for a description of the proposed erosion control measures).

All trees, where feasible, will be felled away from these equipment exclusion areas and end-lined out.

26. Indicate erosion hazard ratings present on this THP:
[ ] Low, [X] Moderate, [ ] High, [ ] Extreme

27. Describe soil stabilization measures to be implemented or any additional erosion control measures proposed in this THP where required by the rules:

All of the soil stabilization measures described below will be completed by October 15 of the year(s) in which operations occur in each area described. The exception to this is the application of class 2 base rock, EWC[2] and Road Oyl (as described in off-site mitigations #6, 7, 8, 10, 12 and 13) which will be completed before the submission of the Work Completion Report.

All roads will be drained by outsloping and rolling dips. All cuts, fill, and sidecast material greater than 20 feet slope distance along new or reconstructed roads and landings will be straw mulched, covering at least 90% of the disturbed area. Landings, areas of bare soil over 800 square feet, and the temporary road will be seeded with Santa Cruz erosion mix (grass seed) at a rate of 40 pounds per acre.

Tractor roads and trails will be covered with slash and crushed in place as feasible or have waterbars installed in accordance with CCR 914.6. Waterbar spacing will be based on a high EHR rather than the actual medium EHR as an extra precaution.

The temporary road within the harvest area will be abandoned but left open as a trail to private property along the northern boundary of SDSF. This will avoid use of the steeper, longer route now in use, which will be obstructed. Public motor vehicle access is prohibited on SDSF property; the temporary road will be left unobstructed but posted as closed. Treatment of this road will include outsloping, rolling dips, and grass seeding as described above. The class III watercourse crossing (#2), will be treated as described in the watercourse crossing section (#50) below.

Currently, Long Ridge Road is the only road leading onto the property that is not blocked by a state-controlled gate. To further ensure that unwanted vehicular traffic does not damage roads or erosion control features, a new gate that will facilitate permitted recreational uses will be installed near the property boundary.

On and Off-Site Mitigation Measures

The following list pinpoints on and off-site existing conditions that have the potential to contribute eroded material to watercourses and degrade downstream water resources. Mitigation measures designed to eliminate or decrease this potential are outlined in the list. These measures, which are based on field discussions with Geologist Mike Manson (see his attached preharvest inspection report) are THP requirements that shall be completed by the Licensed Timber Operator that is employed by the Timber Purchaser.

On the attached mitigations map (#2), lower case letter points refer to on-site conditions, numbered points refer to those off-site. As described in the Off-Site Mitigations below, most of the haul route from the harvest area to the quarry will be rocked with class 2 base rock and outsloped with rolling dips or insloped where appropriate. Two exceptions to this are an area between mitigation numbers 7 and 8, which is already rocked, and a second length of road above mitigation #5, which does not need rocking.

On-Site Mitigations

a. Stream Bank Failure - This failure is located just below temporary crossing #2. Further gullying will be prevented by armoring the stream channel for 10 feet below the crossing with gabion rock. To prevent further bank failure, the tanoak root wad located in the middle of the gully will be removed, allowing the channel to return to its original course. As described in #50 below, the crossing, once removed, will be armored with 6 inches of clean 2-inch drain rock.

b. Stream Bank Failure - Cull logs from a nearby landing will be anchored across the upper quarter of the failure with earth compacted in and underneath the logs. Slash from the landing will be packed into the remainder of the failure to act as an energy dissipator.

c. Old Tractor Trail north of Old Spanish Ranch Road along Long Ridge Road - Portions of this trail are through cut and have been used for recreational purposes. Continued use of the trail will escalate erosion. To prevent

this, waterbars will be installed, and the trail will be blocked using a cull log at its intersection with Long Ridge Road at the end of the first harvest season. This trail is naturally revegetating and no additional mitigations are necessary.

d. Fill Slope Failure - The road above the failure will be reconstructed with the failure left undisturbed, as it is now stabilized. Drainage along the road will be directed away from the failure by rolling dips and an outside berm.

e. Fill Slope Failure - This failure will be excavated by ramping down and constructing a key way bench. The area will then be refilled with compacted soil at 1 foot lifts with the final slope at a maximum of 1/2:1. The exposed slope will be mulched with straw to provide 90% coverage and seeded with Santa Cruz erosion control mixture at a rate of 40 lbs/acre. Drainage along the road will be directed away from the failure by rolling dips and an outside berm. Slash will be placed at the toe of the fill to act as a filter.

f. Cut Bank Failure - This failure is near the eastern boundary of the THP. Reconstruction of the Old Spanish Ranch Road beyond this point will not be necessary as it will not be utilized during the course of the harvest operation. The failure will be bladed through and ramped over only to allow for the connection to a tractor trail, which immediately crosses the upper reaches of a class III drainage. To protect the drainage, a brow log will be placed at the toe of the failure to hold temporary fill in place. The fill and log will be removed at the conclusion of operations. Exposed soil will be smoothed and mulched with straw to provide 90% coverage, then seeded with Santa Cruz erosion control mixture at a rate of 40 lbs/acre.

Off-Site Mitigations

1. Small Seasonal Spring Contributing to Road Rutting and Fill Slope Failure - The area to be excavated is 6 inches deep and 16 feet wide across the road. This area will be filled with 2-inch drain rock on top of filter fabric. Additional coverings will consist of another layer of filter fabric, 18 to 24 inches of compacted fill, and 4 inches of class 2 base rock. The fill slope will be reestablished by excavating the area to construct a key way bench, and installing a cull log at the toe of the fill. The slope will be refilled with compacted soil at 1 foot lifts, with the final slope at a maximum of 1/2:1. The exposed slope will be mulched with straw to provide 90% coverage and seeded with Santa Cruz erosion control mixture at a rate of 40 lbs/acre.

2. Fill Slope and Cut Bank Failure With Associated Small Seasonal Spring - The fill slope will be log cribbed. This will eliminate gullying at the road edge. An outside berm and rolling dips will be placed to eliminate water sources. The small seasonal spring will be drained with 100 feet of French drain. The cut bank will be laid back to a maximum slope of 1/2:1. The road surface will be outsloped and raised over this area with 4 inches of class 2 base rock. Refer to #1 above for exposed slope mulching and seeding requirements.

3. Slide From 1989 Loma Prieta Earthquake - Rolling dips and 330 feet of outside berm will be installed along the road to eliminate water sources. The loose bank failure material will be removed and incorporated into the roadbed.

4. Fill Slope and Cut Bank Failure - Rolling dips and 40 feet of outside berm will be installed along the road to eliminate water sources. The loose bank failure material will be removed and incorporated into the roadbed.

5. Fill Slope and Cut Bank Failure - Same as in number 4 with 330 feet of outside berm.

6. Long Ridge Road from Hihn's Mill Road Through Soquel Creek Crossing to Past #5 Above - The road surface will be outsloped with rolling dips and rocked 12-feet wide for 1550 feet with 4 inches of class 2 base rock. This will eliminate rutting and deposition of fines into the ford area after the temporary crossing of Soquel Creek is removed.

7. Hihn's Mill Road From Existing Rocked Portion to Long Ridge Road - The road surface will be bladed smooth and rocked 12 feet wide for 1,000 feet with 4 inches of class 2 base rock to eliminate rutting.

8. Hihn's Mill Road From Beginning of Existing Class 4 Base Rock to Soquel Creek Crossing - For approximately 1,000 feet the road will be outsloped, or insloped where necessary. To prevent class 2 and class 4 base rock from being deposited into Amaya and Soquel Creeks, the existing class 4 base rock will be treated with EMC^2 (brand name).

Next, two inches of class 2 base rock mixed with Road OYL (brand name) will be applied on the road, outsloped with rolling dips, and rolled to a compacted, smooth surface. Road OYL and EMC^2 will be used on this section of road as they are natural and environmentally appropriate products, neither asphalt or petroleum based. These products have been designed for sensitive areas where the potential for leaching or washing of residues into streams is possible. They will not dissolve in water, but harden to a surface that is highly resistant to wear (refer to Soil Stabilization Products Company letter dated May 17, 1994 attached).

9. Slide Area and Deposition of Slide Material on Fill Slope - To prevent future sliding, redwood trees above the slide will be felled and removed. Slide material will be resloped to a maximum of 1.5:1. The material will be mulched to provide 90% coverage of exposed soil with straw punched in with a shovel and seeded with Santa Cruz erosion control mixture at a rate of 40 lbs/acre. Slash from the cut redwood trees will be spread and crushed over and along drainage paths from the road to prevent soil from eroding into Amaya Creek.

10. Hihn's Mill Road From Olive Spring Quarry to Beginning of Existing Class 4 Base Rock at Switchback - For approximately 5,870 feet the road will be out sloped with rolling dips installed every 150 feet on the average. Six inches of class 2 base rock will be applied 12 feet wide to prevent rutting and rilling to the road surface. An energy dissipator, constructed of gabion size rock, will be installed at the outfall of the culvert, 660 feet south of the switchback.

11. Slide Area Along Hihn's Mill Road - This slide area is becoming stabilized with minor amounts of material eroding from exposed surfaces. Loose material will be removed from the road. An 18 to 24-inch diameter cull log will be placed in a trench at the base of the slide to intercept additional soil material. Refer to No. 1 above for exposed slope mulching and seeding requirements.

12. Hihn's Mill Road from Long Ridge Road through Badger Springs to Existing Class 4 Base Rock - For approximately 1840 feet, the road will be bladed smooth with 4 inches of class 2 base rock applied 12 feet wide to prevent rutting and rilling to the road surface.

13. Hihn's Mill Road from the End of the Existing Class 4 Base Rock to Saw Pit Trail - The road from the existing class 4 base rock through to the third and last culvert along this road section, approximately 380 feet, will be bladed smooth. Inside ditches will be opened and culvert inlets and outlets cleared for 50 feet beyond culverts. The remainder of the road will be outsloped with rolling dips installed every 150 feet on the average. Four inches of class 2 base rock 12 feet wide will be applied for 1570 feet total road length, to prevent rutting and rilling to the road surface.

One fill slope failure will be treated by excavating and constructing a key way bench and installing a cull log at the toe of the fill. The area will then be refilled with soil compacted at 1 foot lifts with the final slope at a maximum of 1.5:1. An outside berm will be installed. Refer to #1 above for mulching and seeding of exposed slope along this entire section of road.

28. [ ] Yes [X] No Are any alternative practices or exceptions to the standard harvesting or erosion control practices permitted in the rules proposed for this plan? If yes, explain and justify:

Watercourse Crossings

The chart on the next page describes the new permanent and temporary crossings to be installed for timber operations.

Crossing numbers refer to points on THP Map #1.

CROSSING NUMBER	STREAM CLASS	CROSSING TYPE	DESCRIPTION
1.	III	Permanent	One 36 inch x 30 foot 16 gauge galvanized culvert in approximately 10 feet of fill with trash rack and downspout. Designated cull logs to be removed from stream channel with larger sound logs used to stabilize toe of fill.
2.	III	Temporary	No culvert; dry crossing using local fill which will be removed before the start of the winter period. Following fill removal, a 6-inch layer of clean 2-inch drain rock will be placed in the crossing. This drain rock will extend for 10 feet on either side of the watercourse. Also, gabion size rock will be applied to armor the stream channel for 10 feet below the crossing (see mitigation (a) in #27 above).
3.	III	Permanent	No culvert; dry crossing sloped to direct seasonal water flow back into existing channel. This and all other class III crossings will be straw mulched as described in the narrative for #50 above.
4.	III	Permanent	One 24 inch x 30 foot 16 gauge galvanized culvert set at stream channel grade.
5.	I	Temporary	One 36 inch x 20 foot, half-round, 14 gauge galvanized culvert and one 18 inch x 20 foot, 14 gauge galvanized culvert set at stream channel grade. Both will be covered by at least 12 inches of clean 2-inch drain rock with 4 inches of clean 2-inch drain rock for 30-foot approaches (see diagram for crossing #5).
6.	I	Temporary	Same as crossing #5 with an additional 18 inch X 20 foot, 14 gauge galvanized culvert. Also, extend existing 24 inch X 20 foot culvert on the bank with an additional 24 inch X 20 foot 16 gauge galvanized culvert and fill in ditch (see diagram for crossing #6).
7.	III	Temporary	No culvert; dry tractor skid trail crossing (see mitigation (f) in #27 above for specific erosion control and stabilization measures to be taken in addition to those in #50).