

Table of Contents

Volume 1A

List of Tables	xi
List of Figures	xviii
List of Map Figures	xxi
I. Executive Summary	I-1
1. Introduction	I-1
2. Jackson Demonstration State Forest	I-1
3. Project Description	I-2
4. Project Purpose and Objectives	I-2
5. Issues to be Resolved	I-4
6. Areas of Controversy.....	I-4
7. Impacts and Mitigation	I-6
8. Alternatives Considered	I-7
9. Conclusion	I-9
II. Introduction	II-1
1. Legislative Mandate for the State Forest System.....	II-2
2. Program Purpose and Land Use Priorities	II-3
3. JDSF Demonstration and Research.....	II-4
3.1 Demonstration Aspects of JDSF	II-4
3.2 Demonstration and Experiments	II-5
4. Location.....	II-6
5. Forest Management Planning	II-6
5.1 Timber Management.....	II-7
6. Relationship Between the Draft EIR and the Draft JDSF Mgmt Plan	II-9
6.1 Programmatic EIRs and Future Projects.....	II-10
6.2 Adequacy of EIR	II-14
7. California Forest Practice Act and Forest Practice Rules.....	II-15
8. Relationship with Prior EIRs and Management Plans	II-16
9. Areas of Potential Concern	II-17
10. Issues to be Resolved	II-18
11. Public Participation	II-19
12. Contents and Organization of EIR.....	II-20
III. Project Information	III-1
1. Project Location	III-1
2. Project Purpose, Goals, and Objectives.....	III-1
3. Project Description	III-7
3.1 Actions Associated with Forest Management	III-8
3.2 Potential Actions Resulting from Project	III-9
3.2.1 Potential On-site Actions.....	III-9
3.2.2 Potential Off-site Actions.....	III-24
4. Actions Not Evaluated as Part of This EIR	III-25

5. Economic, Social, and Community Effects.....	III-25
5.1 Overview of the North Coast Redwood Region and the Role of JDSF.....	III-26
5.2 The Transition to Young Growth Redwood Economy	III-27
5.3 North Coast Industrial and Non-Industrial Forest Inventory and Sustainability	III-29
5.3.1 Forest Inventory	III-29
5.3.2 Forest Sustainability: Current Growth Exceeds Harvest on Private Forest Lands	III-30
5.4 Economics of the Timber Industry.....	III-31
5.4.1 Harvest Levels	III-31
5.4.2 Redwood Timber Economy Linkages.....	III-32
5.4.3 Estimating the Employment Impact of Changing Harvest Levels	III-33
5.4.4 The Economic and Social Impacts to Displaced Timber Workers ...	III-35
5.5 Economics of Wildland Recreation in the North Coast Region	III-35
5.6 Alternative Uses of Redwood Lands – Fragmentation for Rural Residential Uses.....	III-38
5.7 Overview of Basic and Non-Basic Sector View of Local Economies.....	III-41
5.8 2000 – 2004 Job Growth Sectors.....	III-43
5.9 Regional Economic Patterns Related to Forests and other Wildlands – Five Redwood Counties v. State	III-45
5.10 Sustainable Forestry, Recreational Opportunities, and Residential Neighborhood Compatibility	III-47
6. JDSF: Social and Economic Setting-Mendocino County Specific	III-48
6.1 Social Setting	III-48
6.2 Economic Setting	III-50
6.2.1 Major Economic Sectors in Mendocino County.....	III-51
6.2.2 Supporting and Growing Competitive Industries	III-51
6.2.3 Mendocino’s Tourism Industry	III-52
6.2.4 Employment Trends in Major Sectors from 1990 – 2004	III-53
6.2.5 Jobs and Revenue at Different Harvest Levels	III-54
6.3 Other Considerations	III-55
IV. Agency Involvement	IV-1
1. Introduction	IV-1
2. Board Decision-Making.....	IV-1
3. Other Agency Involvement.....	IV-2
V. Environmental Setting	V-1
1. Introduction	V-1
2. Regional Setting.....	V-1
3. Summary	V-29
VI. Alternatives	VI-1
1. Introduction	VI-1
2. Alternatives Considered but Dismissed from Further Consideration.....	VI-2
3. General Overview Description of Alternatives.....	VI-8
4. Detailed Comparison of Alternatives by Subject	VI-13
5. Relative Comparison of Impacts by Resource	VI-13
6. Environmentally Superior Alternative and Preferred Alternative	VI-13

VII. Resource Specific Analysis	VII.1
1. Introduction	VII.1-1
1.1 Areas to Be Studied.....	VII.1-1
1.2 Resources Not Present or Unaffected by Project	VII.1-1
1.3 Applicable Registrations	VII.1-2
1.4 Threshold of Significance	VII.1-2
1.5 Impacts	VII.1-2
1.6 Mitigation	VII.1-3
1.7 Cross-Referencing.....	VII.1-4
1.8 Reference Availability	VII.1-4
2. Aesthetic Resources	VII.2-1
2.1 Setting.....	VII.2-1
2.1.1 Regional and Local Setting	VII.2-1
2.1.2 Existing Aesthetic Character of the JSDF	VII.2-3
2.1.3 Jurisdictional Setting	VII.2-7
2.2 Regulatory Framework	VII.2-7
2.3 Proposed JSDF Management Measures.....	VII.2-8
2.3.1 Goals and Objectives	VII.2-8
2.3.2 Specific Management Actions	VII.2-9
2.4 Thresholds of Significance.....	VII.2-12
2.5 Individual Impacts.....	VII.2-13
2.6 Cumulative Impacts	VII.2-21
2.7 Alternative Comparison	VII.2-28
3. Agriculture Resources.....	VII.3-1
3.1 Regional and Project Setting	VII.3-1
3.2 Significance Criteria.....	VII.3-2
3.3 Impacts	VII.3-2
3.4 Alternatives.....	VII.3-2
4. Mineral Resources	VII.4-1
4.1 Regional and Project Environmental Setting	VII.4-1
4.2 Significance Criteria.....	VII.4-1
4.3 Impacts	VII.4-2
4.4 Alternatives.....	VII.4-2
5. Air Quality	VII.5-1
5.1 Regional and Project Setting.....	VII.5-1
5.1.1 Climate	VII.5-1
5.1.2 Air Quality.....	VII.5-1
5.1.3 Prevailing Air Quality	VII.5-1
5.1.4 Existing Emission Sources	VII.5-6
5.2 Regulatory Frame Work	VII.5-11
5.3 JSDF Management Measures	VII.5-12
5.4 Threshold of Significance	VII.5-13
5.5 Project Individual and Cumulative Impacts	VII.5-14
5.6 Alternatives.....	VII.5-17
6. Biological Resources	VII.6.1-1
6.1 Aquatic Resources	VII.6.1-1

6.1.1 Regional and Local Setting	VII.6.1-1
6.1.2 Aquatic Habitat Conditions: Overview	VII.6.1-5
6.1.3 Aquatic Habitat Conditions within JDSF	VII.6.1-18
6.1.4 Aquatic Habitat Conditions: Contributing and Receiving Watersheds in the JDSF Assessment Area	VII.6.1-37
6.1.5 Timber Harvest History.....	VII.6.1-44
6.1.6 Regional Salmonid Population Status	VII.6.1-53
6.1.7 Fish Distribution-JDSF	VII.6.1-72
6.1.8 Changes in Species Composition-water flow pattern and large woody debris as an influence on salmonid species composition	VII.6.1-81
6.1.9 Restoration Efforts and Opportunities	VII.6.1-85
6.1.10 Critical Habitat.....	VII.6.1-85
6.1.11 Applicable Standards for Protection of Resources	VII.6.1-90
6.1.12 Habitat Protections in DFMP	VII.6.1-91
6.1.13 Monitoring and Adaptive Management.....	VII.6.1-94
6.1.14 Additional Management Measures to Contribute to Recovery of Aquatic Resources	VII.6.1-96
6.1.15 Thresholds of Significance	VII.6.1-98
6.1.16 Project Impacts	VII.6.1-99
6.1.17 Alternatives Comparison	VII.6.1-111
6.2 Botanical Resources	VII.6.2-1
6.2.1 Setting.....	VII.6.2-1
6.2.2 Regulatory Framework for the Protection of Botanical Resources	VII.6.2-16
6.2.3 Project Measures for Protection of Botanical Resources	VII.6.2-18
6.2.4 Specific Management Actions	VII.6.2-19
6.2.5 Thresholds of Significance	VII.6.2-24
6.2.6 Impacts.....	VII.6.2-24
6.2.7 Additional Management Measures and Monitoring	VII.6.2-45
6.3 Timber Resources.....	VII.6.3-1
6.3.1 Setting.....	VII.6.3-1
6.3.2 Regulatory Framework.....	VII.6.3-23
6.3.3 Proposed JDSF Management Measures for Protection of Timber Resources	VII.6.3-24
6.3.4 Thresholds of Significance	VII.6.3-31
6.3.5 Impacts.....	VII.6.3-31
6.3.6 Alternatives Impact Comparison	VII.6.3-44
6.4 Forest Protection.....	VII.6.4-1
6.4.1 Regional and Project Setting: Forest Pests and Diseases and Integrated Pest Management.....	VII.6.4-1
6.4.2 Biological Resources.....	VII.6.4-15
6.4.3 Forest Protection Management Measures	VII.6.4-18
6.5 Wetlands	VII.6.5-1
6.5.1 Regional and Project Setting.....	VII.6.5-1
6.5.2 Regulatory Framework for the Protection of Wetlands.....	VII.6.5-2
6.5.3 Project Measures for the Protection of Wetlands	VII.6.5-3

6.5.4	Thresholds of Significance	VII.6.5-3
6.5.5	Impacts.....	VII.6.5-3
6.5.6	Mitigation.....	VII.6.5-4
6.5.7	Alternatives	VII.6.5-4

Volume 1B

6.6	Wildlife	VII.6.6-1
6.6.1	Affected Environment and Environmental Setting	VII.6.6-1
6.6.2	Regulatory Framework for the Protection of Wildlife Resources	VII.6.6-110
6.6.3	Project Measures for Protection of Wildlife Resources.....	VII.6.6-113
6.6.4	Additional Management Measures	VII.6.6-118
6.6.5	Thresholds of Significance	VII.6.6-120
6.6.6	Project Impacts	VII.6.6-120
6.6.7	Mitigation and Monitoring	VII.6.6-131
6.6.8	Comparison of Alternatives	VII.6.6-131
6.6.9	Alternatives Comparison	VII.6.6-240
7.	Geology and Soils	VII.7-1
7.1	Introduction	VII.7-1
7.2	Regional and Project Setting.....	VII.7-3
7.2.1	Geology.....	VII.7-3
7.2.2	Soils	VII.7-5
7.2.3	Seismicity	VII.7-6
7.2.4	Geomorphic Processes: Surface Erosion and Mass Wasting	VII.7-7
7.2.5	Sediment Budget.....	VII.7-22
7.3	Regulatory Framework.....	VII.7-27
7.4	Proposed JDSF Management Plan Goals and Measures Related to Geology and Soils.....	VII.7-29
7.5	Thresholds and Significance	VII.7-35
7.6	Project Impacts	VII.7-35
7.7	Alternatives Comparison	VII.7-43
8.	Hazards and Hazardous Materials	VII.8-1
8.1	Regional Project Setting for Wildfires.....	VII.8-1
8.1.1	Regional Setting.....	VII.8-1
8.1.2	Existing Project Fire Protection Setting	VII.8-4
8.1.3	Prescribed Fires	VII.8-6
8.1.4	Proposed Project Fire Prevention and Protection Measures.....	VII.8-7
8.1.5	Forest Practice Rules	VII.8-8
8.2	Regional and Project Setting for Hazardous Materials	VII.8-9
8.2.1	Existing Pesticide Use on JDSF	VII.8-10
8.2.2	Projected and Proposed Pesticide Use	VII.8-10
8.2.3	Regulation of Pesticides and other Hazardous Materials	VII.8-13
8.2.4	Thresholds of Significance	VII.8-18
8.3	Impacts	VII.8-19
8.4	Alternatives Comparison	VII.8-22

9. Heritage Resources.....	VII.9-1
9.1 Definitions and Criteria.....	VII.9-1
9.1.1 Heritage Resources Defined	VII.9-1
9.1.2 Heritage Resources Significance Criteria.....	VII.9-2
9.2 Information Sources for Heritage Resources on JDSF	VII.9-4
9.3 Description of Known Heritage Resources in Region and on JDSF.....	VII.9-6
9.3.1 Past Impacts on Heritage Resources of the Region and JDSF.....	VII.9-6
9.3.2 Identified Heritage Sites Summary.....	VII.9-7
9.3.3 Traditional Native American Heritage Resources.....	VII.9-9
9.3.4 Prehistoric Archeological Sites.....	VII.9-12
9.3.5 Historic Period Heritage Resources	VII.9-14
9.3.6 Museum Collections and Archives	VII.9-19
9.4 Regulatory Framework.....	VII.9-22
9.4.1 State Laws, Regulations, Standards and Guidelines	VII.9-22
9.4.2 Federal Laws, Regulations, Standards and Guidelines.....	VII.9-26
9.5 Proposed JDSF Management Measures	VII.9-27
9.5.1 Preferred Management Approach: Preservation in Place	VII.9-28
9.5.2 Timber Harvesting and California Forest Practice Rules.....	VII.9-29
9.5.3 Fire Protection and Prescribed Burn Programs.....	VII.9-31
9.5.4 Transportation Systems (Road Maintenance, Construction, and Abandonment).....	VII.9-32
9.5.5 Watershed Restoration and Wetlands Management.....	VII.9-34
9.5.6 Recreation and Public Uses, and Maintenance of Existing Facilities	VII.9-34
9.5.7 Pesticide Use and Access for Native American Gathering.....	VII.9-35
9.5.8 Interpretation, Demonstration and Research Programs	VII.9-36
9.5.9 Coordination with Other Agencies and Entities	VII.9-37
9.5.10 Management of Archeological Collections and Archives.....	VII.9-37
9.6 Thresholds for Determining Significant Impacts to Heritage Resources	VII.9-38
9.7 Analysis and Proposed Mitigation and Monitoring Measures for Individual and Cumulative Impacts.....	VII.9-39
9.7.1 Timber Harvesting.....	VII.9-42
9.7.2 Fire Protection and Prescribed Burn Programs.....	VII.9-44
9.7.3 Transportation Systems (Road Maintenance, Construction, and Abandonment).....	VII.9-47
9.7.4 Recreation and Public Uses, and Maintenance of Existing Facilities	VII.9-49
9.7.5 Native American Collecting and Herbicide Use Programs	VII.9-51
9.7.6 Interpretation, Demonstration, and Research Programs	VII.9-51
9.8 Alternatives Analysis	VII.9-52
10. Hydrology and Water Quality.....	VII. 10-1
10.1 Introduction	VII.10-1
10.2 Regional and Project Watershed Setting.....	VII.10-1
10.3 Hydrology	VII.10-3
10.3.1 Streamflow.....	VII.10-3

10.3.2 Peak Flows	VII.10-4
10.3.3 Water Yield and Summer Low Flows	VII.10-6
10.4 Water Quality	VII.10-7
10.4.1 Total Maximum Daily Load (TMDL)	VII.10-7
10.4.2 Sediment and Turbidity	VII.10-7
10.4.3 Dissolved Oxygen	VII.10-10
10.4.4 Nutrients	VII.10-10
10.4.5 Fecal Coliform	VII.10-12
10.4.6 Grazing Animals	VII.10-12
10.4.7 Domestic Water Supplies	VII.10-12
10.5 Regulatory Framework	VII.10-14
10.6 Proposed JDSF Management Measures	VII.10-18
10.7 Additional Management Measure for an Accelerated Road Management Plan	VII.10- 19
10.8 Thresholds of Significance	VII.10-20
10.9 Project Impacts	VII.10-20
10.10 Alternatives	VII.10-28
11. Land Use Planning	VII.11-1
11.1 Setting	VII.11-1
11.1.1 Property Location	VII.11-1
11.1.2 Regional Setting	VII.11-1
11.1.3 Local Setting	VII.11-4
11.1.4 JDSF Zoning	VII.11-5
11.1.5 Lands Surrounding JDSF and Potential Acquisitions	VII.11-6
11.2 Management and Land Use Policies	VII.11-7
11.2.1 JDSF Management	VII.11-7
11.2.2 Mendocino County General Plan Land Use Designation and Policies	VII.11-7
11.3 Regulatory Framework	VII.11-8
11.4 Proposed JDSF Management Measures	VII.11-10
11.5 Thresholds of Significance	VII.11-11
11.6 Impacts	VII.11-11
11.7 Cumulative Impacts	VII.11-12
11.8 Alternatives Comparison	VII.11-13
12. Noise	VII.12-1
12.1 Regional and Local Setting	VII.12-1
12.2 Existing Noise Levels	VII.12-2
12.3 Noise Impact Analysis	VII.12-4
12.3.1 Recreation Noise Impacts	VII.12-4
12.3.2 Timber Management Noise Impacts	VII.12-4
12.4 Sensitive Receptors (Noise-sensitive areas)	VII.12-6
12.5 Noise Standards	VII.12-7
12.6 Regulatory Framework	VII.12-8
12.7 Proposed JDSF Management Measures Pertaining to Noise	VII.12-9
12.8 Thresholds of Significance	VII.12-10
12.9 Noise Impact and Mitigation	VII.12-11

12.10 Cumulative Impacts of Noise Generating Activities	VII.12-14
12.11 Management Alternatives and Noise Impacts	VII.12-16
13. Public Services, Population & Housing, Utilities, & Service Systems	VII.13-1
13.1 Environmental Setting	VII.13-1
13.2 Significance Criteria	VII.13-1
13.3 Impacts.....	VII.13-2
14. Recreation	VII.14-1
14.1 Affected Environment/Environmental Setting	VII.14-1
14.1.1 Regional Setting	VII.14-1
14.1.2 Jurisdictional Setting	VII.14-5
14.2 Existing Recreation on JDSF	VII.14-8
14.2.1 Carrying Capacity	VII.14-13
14.2.2 Existing Recreation on Adjacent and Surrounding Lands	VII.14-13
14.3 Proposed JDSF Management Measures	VII.14-16
14.3.1 Goals and Objectives	VII.14-16
14.3.2 Specific Management Actions	VII.14-17
14.3.3 Other Management Actions.....	VII.14-18
14.4 Thresholds of Significance	VII.14-21
14.5 Impacts.....	VII.14-22
14.6 Cumulative Impacts.....	VII.14-26
14.7 Alternatives Comparison	VII.14-27
15. Transportation and Traffic	VII.15-1
15.1 Regional and Environmental Setting	VII.15-1
15.1.1 Existing Traffic Routes and Volumes.....	VII.15-1
15.1.2 Air Traffic.....	VII.15-4
15.1.3 Other Improvements.....	VII.15-4
15.1.4 Traffic Safety within and Adjacent to JDSF	VII.15-4
15.1.5 Roads Within and Adjacent to JDSF	VII.15-5
15.1.6 Emergency Access.....	VII.15-6
15.2 Regulatory Framework.....	VII.15-6
15.3 Proposed JDSF Management Measures	VII.15-6
15.4 Thresholds of Significance	VII.15-8
15.5 Individual and Cumulative Impacts.....	VII.15-9
15.6 Mitigation	VII.15-10
15.7 Alternative Analysis	VII.15-10
16. Climate Change and Carbon Sequestration	VII.16-1
16.1 Climate Change.....	VII.16-1
16.2 Carbon Sequestration	VII.16-2
16.3 Conclusion	VII.16-4

VIII. Cumulative Effects

1. Introduction	VIII-1
2. Setting.....	VIII-2
3. Past, Present, and Future Projects.....	VIII-3
3.1 Past Projects	VIII-3
3.2 Current Projects	VIII-29
3.3 Future Projects.....	VIII-30

4. Watershed Cumulative Effects	VIII-41
4.1 Flow Effects.....	VIII-41
4.2 Water Temperature Effects	VIII-43
4.3 Nutrient Effects.....	VIII-45
4.4 Large Wood and Organic Debris Effects.....	VIII-46
4.5 Sediment Effects	VIII-50
5. Hazardous Materials	VIII-60
6. Soil Productivity Effects.....	VIII-62
7. Biological Resources.....	VIII-65
7.1 Aquatic Resources	VIII-66
7.2 Wildlife and Wildlife Habitat.....	VIII-89
7.3 Botanical Resources	VIII-90
8. Recreation Effects.....	VIII-91
9. Aesthetic Effects.....	VIII-94
10. Noise Effects	VIII-95
11. Traffic Effects	VIII-97
12. Air Quality.....	VIII-99
13. Land Use	VIII-100
14. Heritage Resources.....	VIII-100
15. Cumulative Impacts Summary and Comparison Table	VIII-101
IX. Other CEQA Required Analysis.....	IX-1
1. Growth Inducing Impacts.....	IX-1
1.1 Introduction.....	IX-1
1.2 Discussion.....	IX-1
2. Unavoidable Impacts Resulting From Project	IX-1
3. Significant Irreversible Environmental Changes	IX-1
4. Mitigation Monitoring	IX-2

Volume 2—Appendices

1. Acronyms and Abbreviations
2. Glossary of Terms
3. List of Preparers and Contributors
4. Notice of Preparation
5. Statutes, Regulations, and Policies Governing State Forests
6. References
- 6A. Literature Cited
- 6B. Personal Communications
- 7A. Description of Inventory, Growth, and Yield
- 7B. Botany
8. Pertinent Geology- and Erosion-Related Forest Practice Rules
9. Detailed Tables of Archaeological Resources
10. Peak Flow Analysis
11. Overview of Existing Sediment Studies Relevant to the JDSF EIR
12. Stream Temperature

13. Brief Description of Herbicides Considered for Use on Jackson Demonstration State Forest
14. Detailed Summary of Timber Harvesting on JDSF Cumulative Watershed Effects Assessment Area, 1986-2004

List of Tables

Volume 1A

- I.1. Summary of Potential Actions Resulting from Implementation of the JDSF Management Plan
- I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives
- I.3. Summary of Potential Adverse and Beneficial Potential Cumulative Effects for the Proposed Project
- II.1. Potential Additional CEQA Actions for JDSF Management
- II.2. CEQA Required Topics and Corresponding EIR Sections
- III.1. Planned Structural Condition for JDSF
- III.2. Inventory Characteristics of Private Timberland of the North Coast
- III.3. Visits, Area, Use Intensity, and Distance from the San Francisco Bay Area for major Redwood Parks
- III.4. Year 2000 Census Based Analysis of Average Residential Parcels in the Redwood Region
- III.5. Change in Redwood Acreage at Different Housing Densities, 1990 to 2000
- III.6. Percentage Change in Redwood Acreage at Different Housing Densities, 1990 to 2000
- III.7. Employment and Mean Annual Wage for Selected Occupations, North Coast, 2003
- III.8. Employment Change by Sector, 2000-2004, North Coast
- III.9. Sectoral Employment and Median Household Incomes for California and Selected counties in 2000
- III.10. Social and Demographic Characteristics of Mendocino and Other Areas
- III.11. Mendocino County Population Characteristics 1990, 2000, and 2004
- III.12. Employment Change by Sector, 2000-2004, Mendocino County
- III.13. Employment and Revenue Effects of Various Timber Harvest Levels
- IV.1. Other Permits and Responsible Agencies
- V.1. Vacant Parcels in Residential Use and Resource Use Zones
- V.2. Percent of Area in Landslides and Other Forms of Mass Wasting Noyo River, Coastal Planning Watersheds, and Portions of the Big River
- V.3. Road Characteristics and Estimated Sediment Production for the Cumulative Watershed Effects Assessment Area
- V.4. Redwood Ecosystem Conservation Ratings for JDSF Cumulative Effects Assessment Area
- VI.1. Comparison of Management Approach and Elements Among Proposed Alternatives

VII.1.1.	General References Regarding Closely Related Topics
VII.2.1.	Comparison of Impacts Among Aesthetics Alternatives
VII.3.1.	Comparison of Agriculture Impacts by Alternatives.
VII.4.1.	Comparison of Mineral Resources Impacts by Alternatives
VII.5.1.	California and National Ambient Air Quality Standards
VII.5.2.	Maximum Measured Air Pollutant Concentrations in the JDSF Region
VII.5.3.	Number of Days of Particulate Matter Exceeded the State Standard for Pm10, by Monitoring Location, 1997-2003
VII.5.4.	Estimated 2003 Annual Average Emissions
VII.5.5.	JDSF Road Miles by Surface and Use Category
VII.5.6.	Comparison of Air Quality Impacts by Alternatives
VII.6.1.1.	Temperature Impaired Water Bodies and Watershed Area in the North Coast Hydrologic Unit
VII.6.1.2.	A Range of Known MWAT Thresholds and Standards for Salmonids
VII.6.1.3.	Aquatic Habitat Conditions in JDSF Streams, Measured During Summer 1997
VII.6.1.4.	A Summary of Streamside Canopy Cover Data for Streams in or Adjacent to the JDSF Ownership
VII.6.1.5.	Water Temperature for Tributaries to the Noyo River
VII.6.1.6.	Instream Large Wood Quality Ratings for Major Streams and Sections of Streams or Rivers in Calwater Planning Watersheds for the Gualala WAU
VII.6.1.7.	Large Woody Debris in Selected Stream Segments of the Noyo WAU
VII.6.1.8.	Historical Estimates of Coho Salmon Spawner Abundance for Various Rivers and Regions within the Central California Coast Evolutionarily Significant Unit
VII.6.1.9.	Historical Presence of Coho Salmon in the CCC ESU
VII.6.1.10.	Summary of Historical Abundance for Steelhead in the Northern California Evolutionarily Significant Unit
VII.6.1.11.	Historical Estimates of Abundance of Chinook Salmon in the California Coastal Chinook Salmon ESU
VII.6.1.12.	Comparison of Aquatic Resource Impacts Among the Various Alternatives
VII.6.2.1.	Plant and Lichen Species of Special Concern Likely or Known to occur on JDSF
VII.6.2.2.	CNPS List 3 and 4 Species that are Known or Likely to Occur Within JDSF
VII.6.2.3.	Plant and Lichen Species of Interest for Cumulative Effects Consideration within the JDSF Analysis Area, Grouped by Hierarchical Functional Group
VII.6.2.4.	Comparison of Botany-Related Alternatives
VII.6.3.1.	Inventory, Growth and Harvest Simulations for each Alternative Considered
VII.6.3.2.	Summary of the Silvicultural Methods Used by the Forest, 1980 through 1999
VII.6.3.3.	JDSF Acres Harvested by Yarding Method between 1980 and 1999
VII.6.3.4.	Areas of JDSF Assigned to Sustained High Level Timber Production
VII.6.3.5.	Late Seral Forest Conditions in the Near Term, 15 Years
VII.6.3.6.	Late Seral Forest Conditions in the Long-Term, 100 Years

- VII.6.3.7. Summary of Estimated Annual Economic Effects for EIR Alternative Harvest Levels
- VII.6.3.8. Special Concern Areas (SCA) Within JDSF
- VII.6.3.9. Comparison of Timber Resource Impacts Across Alternatives
- VII.6.4.1. Common Forest Pests on JDSF
- VII.6.4.2. Proven Hosts for *Phytophthora ramorum*
- VII.6.4.3. Tree Species Found Infected with Pitch Canker Fungus in Nature and Species Susceptible in Greenhouse Tests
- VII.6.4.4. Summary of Sudden Oak Death Woody Material Rules Under State Regulations
- VII.6.5.1. Comparison of Wetland Impacts in Relation to the Various Alternatives

Volume 1B

- VII.6.6.1. Percent CWHR Type, Size and Density for Types Found on JDSF and Relative to the Klamath/North Coast Bioregion
 - VII.6.6.1.1. CWHR vegetation codes
 - VII.6.6.1.2. CWHR Density
 - VII.6.6.1.3. CWHR Size Codes
- VII.6.6.2. Percent CWHR Type, Size and Density for Types Found on JDSF Relative to Mendocino County
- VII.6.6.3. Down Log (>11" DBH) Densities by Forest Type and Ownership in Mendocino County
- VII.6.6.4. Snag (>11" DBH) Densities by Forest Type and Ownership in Mendocino County
- VII.6.6.5. Interpretation of Habitat Classes
- VII.6.6.6. Results of Anova Tests Using Landscape Metrics on Private, Public Managed and Public Reserve Lands
- VII.6.6.7. Threatened, Endangered, and Sensitive Terrestrial Invertebrate, Amphibian, Reptile, Mammal, and Bird Species Potentially Occurring on JDSF
- VII.6.6.8. Partial List of Inland Marbled Murrelet Surveys Resulting in Possible or Positive Detections Within a 10-mile (16-km) Radius of the JDSF Assessment Area; Excluding Surveys Within JDSF
- VII.6.6.9. Partial List of Inland Marbled Murrelet Surveys and Incidental Observations Within a 10-mile (16-km) Radius of the JDSF Assessment Area Excluding Surveys within JDSF
- VII.6.6.10. Partial List of "positive at-sea" Records of Marbled Murrelets in California Near JDSF
- VII.6.6.11. Inland Marbled Murrelet Surveys Conducted in JDSF
- VII.6.6.12. Partial Summary of Territories and Nest Productivity on JDSF from 1998 to 2004
- VII.6.6.13. Summary of JDSF Northern Spotted Owl Surveys
- VII.6.6.14. Ownership of Assessment Area
- VII.6.6.15. Current (2004) and Projected (2010-2060) CWHR Acres by Decade for the Assessment Area Outside of JDSF

- VII.6.6.16. CWHR Habitat Types (acres) for Assessment Area Outside of JDSF, by Planning Period
- VII.6.6.17. Percent Change in Habitat Capability for Species Occurring in the Assessment Area Outside of Jackson Demonstration State Forest for Two Time Periods: Current to 2030 and 2030-2060
- VII.6.6.18. Estimated CWHR acres on Jackson Demonstration State Forest
- VII.6.6.19. Percent Change in Habitat Capability for Species Occurring in Jackson Demonstration State Forest for Two Time Periods: Current to 2030 and 2030– 2060
- VII.6.6.20. Estimated CWHR Acres on Jackson Demonstration State Forest
- VII.6.6.21. Percent Change In Habitat Capability For Species Occurring In Jackson Demonstration State Forest For Two Time Periods: Current To 2030 And 2030-2060
- VII.6.6.22. Estimated CWHR Acres on Jackson Demonstration State Forest
- VII.6.6.23. Percent Change in Habitat Capability for Species Occurring in Jackson Demonstration State Forest for Two Time Periods: Current to 2030 and 2030-2060
- VII.6.6.24. Estimated CWHR acres on Jackson Demonstration State Forest
- VII.6.6.25. Percent Change in Habitat Capability for Species Occurring in Jackson Demonstration State Forest for Two Time Periods: Current to 2030 and 2030 to 2060
- VII.6.6.26. Estimated CWHR Acres on Jackson Demonstration State Forest
- VII.6.6.27. Percent Change in Habitat Capability for Species Occurring in Jackson Demonstration State Forest for Two Time Periods: Current to 2030 and 2030-2060
- VII.6.6.28. Estimated CWHR acres on Jackson Demonstration State Forest
- VII.6.6.29. Percent Change in Habitat Capability for Species Occurring in Jackson Demonstration State Forest for Two Time Periods: Current to 2030 and 2030-2060
- VII.6.6.30. Estimated CWHR Acres on Jackson Demonstration State Forest
- VII.6.6.31. Percent Change in Habitat Capability for Species Occurring in Jackson Demonstration State Forest for Two Time Periods: Current to 2030 and 2030-2060
- VII.6.6.32. Landscape Metrics Across the Assessment Area: Current Conditions.
- VII.6.6.33.a1. Landscape Metrics for Species of Concern by Habitat Suitability Class within JDSF at the End of the First Decade by Alternative
- VII.6.6.33.a2. Total Habitat Area by Suitability Class for Species of Concern by 2030 in the Assessment Area; by Alternative
- VII.6.6.33.b1. Landscape Metrics for Species of Concern by Habitat Suitability Class within JDSF at the End of the First Decade by Alternative
- VII.6.6.33.b2. Total Habitat Area by Suitability Class for Species of Concern by 2030 in the Assessment Area; by Alternative
- VII.6.6.33.c1. Landscape Metrics for Species of Concern by Habitat Suitability Class within JDSF at the End of the First Decade by Alternative

- VII.6.6.33.c2. Total Habitat Area by Suitability Class for Species of Concern by 2030 in the Assessment Area; by Alternative
- VII.6.6.33.d1. Landscape Metrics for Species of Concern by Habitat Suitability Class Within JDSF at the End of the First Decade by Alternative
- VII.6.6.33.d2. Total Habitat Area by Suitability Class for Species Concern by 2030 in the Assessment Area; by Alternative
- VII.6.6.33.e1. Landscape Metrics for Species of Concern by Habitat Suitability Class within JDSF at the End of the First Decade by Alternative
- VII.6.6.33.e2. Total Habitat Area by Suitability Class for Species of Concern by 2030 in the Assessment Area; by Alternative
- VII.6.6.33.f1. Landscape Metrics for Species of Concern by Habitat Suitability Class within JDSF at the End of the First Decade by Alternative
- VII.6.6.33.f2. Total Habitat Area by Suitability Class for Species of Concern by 2030 in the Assessment Area; by Alternative
- VII.6.6.33.g1. Landscape Metrics for Species of Concern by Habitat Suitability Class within JDSF at the End of the First Decade by Alternative
- VII.6.6.33.g2. Total Habitat Area by Suitability Class for Species of Concern by 2030 in the Assessment Area; by Alternative
- VII.6.6.33.h1. Landscape Metrics for Species of Concern by Habitat Suitability Class within JDSF at the End of the First Decade by Alternative
- VII.6.6.33.h2. Total Habitat Area by Suitability Class for Species of Concern by 2030 in the Assessment Area; by Alternative
- VII.6.6.34. Comparison of Wildlife-Related Impacts in Relation to the Various Alternatives
- VII.7.1. Road Characteristics and Estimated Sediment Production for the Watershed Cumulative Effects Assessment Area
- VII.7.2. Number of Road Crossings by Subwatershed and Planning Watershed for Assessment Area
- VII.7.3. Extent of Landslides and Other Forms of Mass Wasting for Noyo and Coastal Planning Watersheds
- VII.7.4. Extent of Landslides and Other Forms of Mass Wasting for Portions of the Big River Panning Watersheds with JDSF Ownership
- VII.7.5. Relative Landslide Potential for Portions of the Big River Watershed within JDSF
- VII.7.6. Relative Landslide Potential for the Noyo River Watershed and Coastal Drainages
- VII.7.7. Comparison of Geology and Soils Related Impacts in Relation to the Various Alternatives
- VII.8.1. Fuel Ranks (by acres) for North Coast Region, Counties, and JDSF
- VII.8.2. Fuel Ranks (by Percent of Area) for North Coast Region, Counties, and JDSF
- VII.8.3. State Responsibility Area and Direct Protection Area for the North Coast Region
- VII.8.4. Average Annual Acres Damaged (CDF Direct Protection Area) by Vegetation Fire Type by County, including total only for the assessment area, 1998-2002

- VII.8.5. State and Regional Summary of Pesticide Use, 2002
- VII.8.6. Comparison of the Hazards and Hazardous Materials Related to Impacts in Relation to the Various Alternatives
- VII.9.1. Summary of Known Heritage Resources at JDSF
- VII.9.2. Summary of Recorded and Known Historic Sites, Structures, and Objects by Type
- VII.9.3. Summary of Archaeological and Archival Collections for JDSF
- VII.9.4. Alternative Comparison for Heritage Resources
- VII.10.1. Major North Coast Region Water Bodies
- VII.10.2. Characteristics of the Planning Watersheds within the JDSF EIR Cumulative Watershed Effects Assessment Area
- VII.10.3. Turbidity Frequency (Turbidity expressed in # days exceeded, 1996-1999)
- VII.10.4. Permitted Surface Water Systems located within the JDSF EIR assessment area
- VII.10.5. Comparison of Hydrology and Water Quality Related Impacts in Relation to the Various Alternatives
- VII.11.1. Summary of Mendocino County Land Use
- VII.11.2. Summary of Land Use in Cumulative Watershed Effects Assessment Area
- VII.11.3. Comparison of Land Use Impacts Among the Various Alternatives
- VII.12.1. Active Timber Harvest Site Equipment and Activity Noise Level Measurements
- VII.12.2. Noise Levels for Helicopters
- VII.12.3. Comparison of Noise Related Impacts Among the Various Alternatives
- VII.14.1. Summary Statistics for Coast Redwood Forest Public Parks and other Public Facilities
- VII.14.2. Fifteen Largest Redwood Forest Public Recreation Facilities
- VII.14.3. Recreational Carrying Capacities
- VII.14.4. Comparison of Recreation Related Impacts Among the Various Alternatives
- VII.15.1. Caltrans Daily Average Traffic Counts at the Broaddus Creek Bridge (2002)
- VII.15.2. Comparison of Traffic and Transportation Related Impacts Among the Various Alternatives
- VIII.1. Summary of Past Timber Harvest in the Cumulative Effects Assessment Area, 1986 through 2004
- VIII.2. Silviculture Classifications System
- VIII.3. Acres Harvested, by Watershed Unit and Silvicultural Class, for Cumulative Watershed Effects Assessment Area, 1986-94 and 1995-2004
- VIII.4. Percentage of Watershed Area Harvested, by Watershed Unit and Silvicultural Class, for Cumulative Watershed Effects Assessment Area, 1986-94 & 1995-2004
- VIII.5. Summary of Cumulative Effects Assessment Area Harvest by Acres and Percent
- VIII.6a. Summary of Cumulative Effects Assessment Area Yarding by Acres and Percent
- VIII.6b. Summary of Road Sediment Modeling

- VIII.7. Watershed Restoration Projects in the Cumulative Effects Assessment Area, 1990 through 2004
- VIII.8. Caltrans Project Summary, 1994-2004
- VIII.9. Anticipated Future Timber Management within the Watershed Cumulative Effects Assessment Area for the next Five-Ten Years
- VIII.10. Summarized Anticipated Future Harvests within the Watershed Cumulative Effects
- VIII.16.1. Comparison of EIR Alternatives for Total Net Carbon Sequestered at End of 100-Year Planning Period.

List of Figures

Volume 1A

- II.1. EIR Process Flow Chart from the CEQA Guidelines
- III.1. Total, Young, Old, and Salvage Harvest Trends for Redwood, 1984-2002
- III.2. Timberland Growing Stock and Ownership by FIA Region
- III.3. Harvest as a Percent of Growth on Private Timberland, Statewide and by Region
- III.4. North Coast Timber Harvest by County, 1990-2003
- III.5. Employment in Wood Manufacturing Jobs for the North Coast Region, by County, 1990-2004
- III.6. Changes in Sawmill Labor Productivity for Mendocino County, 1990-2003
- III.7. Sawmill Jobs per MMBF of Harvest for Mendocino and Humboldt Counties, 1990-2003
- III.8. State Park Visits to Redwood and Beach Parks in Del Norte, Humboldt, and Mendocino Counties
- III.9. Map of Rural Residential Development in the Redwood Region, 2002
- III.10. North Coast Employment Trends by Sector, 1990-2004
- III.11. North Coast Unemployment Trends, by County
- III.12. Manufacturing Workforce Percent and Per Capita Income for North and Central Coast Counties with Redwood Forests
- III.13. Recreation and Travel Industry Workforce Percent and Per Capita Income for North and Central Coast Counties with Redwood Forests
- III.14. Mendocino County Employment by Sector, 1990-2004
- V.1. Acres of Timber Harvest for JDSF Cumulative Watershed Effects Assessment Area, 1986-2004
- V.2. Effects of CWHR Size and Canopy Closure Class on Number of Wildlife Species
- V.3. Cumulative Watershed Effects Assessment Area
- V.4. Splash Dams on the Big River, 1860-1936
- V.5. Coho Presence in the Central Mendocino County Coastal Area
- V.6. Photo Sequence 1
- V.7. Photo Sequence 2
- V.8. Photo Sequence 3
- V.9. Photo Sequence 4
- V.10. Photo Sequence 5
- V.11. Photo Sequence 6
- VII.6.1.1. Habitat Type Frequency, by Gradient Category for JDSF Streams Surveyed
- VII.6.1.2. Sediment in Pools (V*) at Noyo River and Nearby Stream Sites (1992)
- VII.6.1.3. Habitat categories by length of the Little NF Noyo River (1996)
- VII.6.1.4. Habitat categories by length of the NF South Fork Noyo River (1996)
- VII.6.1.5. The distribution of stream temperatures across the Noyo and Big Rivers
- VII.6.1.6. Distribution of stream temperatures along the South Fork Noyo River and Parlin Creek
- VII.6.1.7. Trends in MWAT Stream Temperatures (°C) along the South Fork

Noyo River

- VII.6.1.8. Distribution of stream temperatures along the North Fork Big River, Chamberlain and James Creeks
- VII.6.1.9. MWAT stream temperatures along the Big River
- VII.6.1.10. Average Acres of Timber Harvest per Year in the Noyo River Watershed
- VII.6.1.11. Range of MWATs North Fork Big River Subbasin (**labeled as figure 16**)
- VII.6.1.12. Historical and Present Range of Coho Salmon in California
- VII.6.1.13. Coho Evolutionarily Significant Units in California
- VII.6.1.14. Percent of streams surveyed for which coho salmon presence was detected for all historic coho streams and streams identified in Moyle and Brown's historical list with the the CCC ESU
- VII.6.1.15. Counts of adult coho salmon at Noyo Egg Collecting Station from 1962 to 2002
- VII.6.1.16. Northern California Steelhead ESU
- VII.6.1.17. California Coastal Chinook Salmon ESU
- VII.6.1.18. Age 0+ downstream migrant salmonids in Caspar Creek, CA
- VII.6.1.19. Age 1+ downstream migrant salmonids in Caspar Creek, CA
- VII.6.1.20. Mean density of age 0+ steelhead in various habitats of North and South Forks Caspar Creek
- VII.6.1.21. Mean density of age 1+ steelhead in various habitats of North and South Forks Caspar Creek
- VII.6.1.22. Coho and Steelhead Density
- VII.6.1.23. Map shows Noyo, Big River and coastal drainage riparian conditions and potential sediment yield
- VII.6.2.1. Mushroom Corners
- VII.6.2.2. Changes on Canopy Cover Class by Functional Group for the JDSF Analysis Area Based on the Project Alternative
- VII.6.3.1. Historical Timber Harvests from 1949, North Coast and Mendocino County
- VII.6.3.2. Historical Timber Harvests from 1949, JDSF
- VII.6.3.3. First and Last Period Inventory by Alternative
- VII.6.3.4. First and Last Period Harvest and Growth by Alternative

Volume 1B

- VII.6.6.1. Location of Klamath/North Coast Bioregion
- VII.6.6.1.1. Distribution of CWHR Size and Density Classes across the North Coast Region
- VII.6.6.1.2. Distribution of Redwood and Douglas-fir size and density classes across (a) Mendocino County and (b) North Coast region
- VII.6.6.1.3. Distribution of CWHR Size and Density Classes (a) inside JDSF and (b) outside JDSF for Redwood and Douglas-fir
- VII.6.6.2. Species Richness for Redwood Reproductive and Forage Habitat by CWHR Size and Canopy Classes
- VII.6.6.3. Habitat Meta-Elements for Redwood Forest Type

- VII.6.6.4. Redwood multi-species patterns when animals are assigned to guilds based on how habitat suitability responds to changes in tree size and cover per the CHWR 8.0 Models
- VII.6.6.5. California Land Cover Mapping and Monitoring Program, North Coast Project Area
- VII.6.6.5a. Spatial arrangement and ranking of focal areas (Criterion 2-9) for the Central Subregion Including JDSF and other Ownerships Making up the Assessment Area Possessing Highest Conservation Value Scores
- VII.6.6.6. Extent of Study Area and the Distribution of Owl Sites within the North Coast Ecological Units
- VII.6.6.7. Habitat data for owl circles was partitioned into three land management groups: private, public managed and public reserve.
- VII.6.6.8a. Amount of high capability Northern Spotted Owl Habitat
- VII.6.6.8b. Potential Murrelet Habitat Recruitment Areas and Current Quadratic Mean Diameter of Canopy Trees
- VII.6.6.9. Change in CWHR Types over Time for Assessment Area Outside of JDSF
- VII.6.6.10. Estimated CWHR Acres on JDSF in 2004, 2030, and 2060
- VII.6.6.11. Estimated CWHR acres on Jackson Demonstration State Forest in 2004, 2030 and 2060
- VII.6.6.12. Estimated CWHR acres on Jackson Demonstration State Forest in 2004, 2030 and 2060
- VII.6.6.13. Estimated CWHR acres on Jackson Demonstration State Forest in 2004, 2030 and 2060
- VII.6.6.14. Estimated CWHR acres on Jackson Demonstration State Forest in 2004, 2030 and 2060
- VII.6.6.15. Estimated CWHR acres on Jackson Demonstration State Forest in 2004, 2030 and 2060
- VII.6.6.16. Estimated CWHR acres on Jackson Demonstration State Forest in 2004, 2030 and 2060
- VII.7.1. Estimated surface erosion from roads for planning watersheds across the EIR assessment area
- VII.11.1. Descriptions of Mendocino County Land Use Classes
- VIII.1. Bar Graph of Harvest Acres by Silvicultural Class, Period, and Ownership
- VIII.2. Bar Graph of Area Yarded by Yarding System, Period, and Ownership
- VIII.3. Recovery Potential of Planning Watersheds Across the JDSF EIR Cumulative Effects Assessment Area
- VIII. EMDS In-Stream Channel Survey Model Results
- VIII.5. Location of Splash Dams on the Big River
- VIII.6. Large Wood Removal from Noyo River Tributaries by DFG, 1950s through 1980s
- VIII.7. Channel disturbance in major channels within the Big River watershed including the mainstream and North and South Forks of Big River and Dougherty Creek

List of Map Figures (Compiled at the end of Volume 1B)

- Map Figure A. JDSF Location & Major Roads
- Map Figure B. Planning Watersheds and Cumulative Watershed Assessment Area
- Map Figure C. Aerial Photo Sequence Locator Map
- Map Figure D. Special Concern Areas
- Map Figure E. Stream Class, Fish Distribution, and Passage Barriers
- Map Figure F. Riparian Canopy Cover
- Map Figure G. Timber Harvesting 1986 – 2004 by Period
- Map Figure H. Timber Harvesting 1986 – 2004 by Silviculture Classes
- Map Figure I. Harvest Yarding Methods 1986 – 2004
- Map Figure J. 2004 Vegetation Habitat Class
- Map Figure K. Vegetation Habitat Classes
- Map Figure L. Natural Diversity Database
- Map Figure M. Pacific Fisher
- Map Figure N. Pine Marten
- Map Figure O. Sonoma Red Tree Vole
- Map Figure P. Vaux's Swift
- Map Figure Q. Purple Martin
- Map Figure R. Marbled Murrelet
- Map Figure S. Northern Spotted Owl
- Map Figure T. Northern Goshawk
- Map Figure U. Soils
- Map Figure V. Relative Landslide Potential
- Map Figure W. Relative Landslide Potential – JDSF
- Map Figure X. Land Use Classification
- Map Figure Y. Restoration Projects
- Map Figure Z. Silvicultural Spatial Allocation Plan
- Map Figure AA. Spatial Allocation Plan for Alternative F