

Table of Contents

Chapter 1 – Purpose and Need.....	
Introduction.....	3
The Need for a New Draft.....	3
Background.....	4
Desired Condition.....	7
Proposed Action.....	8
Purpose and Need.....	8
Need for Action.....	9
Decisions to be Made.....	14
Decision Criteria.....	14
Kings River Area and The Sierra Nevada Framework EIS.....	14
Public Involvement.....	15
Issues.....	15
Comments on the Draft EIS.....	16
 Chapter 2 – Alternatives.....	
Introduction.....	3
General Description of the Eight Management Units.....	3
Alternatives Considered.....	36
Alternative 1 – The Proposed Action, Uneven-aged Strategy.....	36
Alternative 2 – No Action.....	38
Alternative 3 – Retain Largest Trees, Uneven-aged Strategy.....	38
Alternative 4 – Fisher Emphasis.....	39
Fisher Conservation Area and Limited Operating Period Guidance.....	42
PSW and Cedar Valley Silvicultural Strategy.....	42
Alternative 5 – Thin from Below.....	44
Summary of Treatment by Alternative.....	44
Design Features Common to Each Action Alternative.....	45
Air Quality (Fuels).....	45
Aquatic Species.....	46
Botanical Resources.....	49
Noxious Weeds.....	50
Herbicide Use.....	50
Heritage Resources.....	51
Roads.....	52
Vegetation.....	52
Soils.....	53
Watershed Design Considerations.....	53
Wildlife.....	56
Adaptive Studies and Experimental Treatments on Kings River Experimental Watershed.....	59
Exceptions to SNFPA Design Measures used in KREW Management Units.....	61
Alternatives Considered but Eliminated from Detailed Study.....	61

Comparison of Alternatives.	65
----------------------------------	----

Chapter 3 – Affected Environment and Environmental Effects.....

Introduction.....	3
Past, Present, and Reasonably Foreseeable Activities in the Kings River Project Area.....	3
Vegetation and Fuel/Fire Behavior Affected Environment.....	8
Historic Forest Conditions	17
Fuel – Fire Behavior.....	30
Vegetation, Fuels and Fire Behavior Effects.....	42
Alternative 1 – Proposed Action.....	43
Alternative 2 – No Action.....	75
Alternative 3 – Retain Largest Trees – Uneven-aged Strategy.....	81
Alternative 4 – Fisher Emphasis.....	84
Alternative 5 – Thin from Below.....	91
Transportation.....	93
Air Quality.....	96
Botanical Resources.....	102
Soil Resources	116
Watershed.....	126
Aquatic Species.....	171
Terrestrial Wildlife.....	198
Migratory Landbirds.....	232
Heritage Resources and Tribal Relations.....	233
Economics.....	242
Human Health and Safety.....	245
Westside Hardwood Management	247
Short-term Uses and Long-term Productivity.....	253
Unavoidable Adverse Effects	253
Cumulative Effects.....	254
Legal and Regulatory Compliance.....	254
Forest Plan Amendment.....	255
Executive Orders.....	256
Special Area Designations.....	257
Other Required Disclosures.....	258

Chapter 4 – References and Lists

Glossary.....	3
Literature Cited.....	16
Interdisciplinary Team.....	56
List of Recipients.....	57
Index.....	59

Appendices

Appendix A - Kings River Project Historic Forest Condition
Appendix B - Strategy for Historical Forest Restoration using Uneven-aged

Silvicultural and Prescribed Fire at the Landscape Scale	
Appendix C - Modeling Existing and Future Vegetation Characteristics, Wildlife Habitat and Fire Behavior Indices in the Kings River Project Area under Three Management Scenarios	
Appendix D - Best Management Practices for the Kings River Project	
Appendix E - Description of Fuels Reduction, Site Preparation, Release, and other Proposed Treatments	
Appendix F - Kings River Project Maps	
Appendix G - Cultural Resources of the Kings River Project	
Appendix H – Description of Cedar Valley Prescription	
Appendix I - An Ecosystem Management Strategy for Southern Sierra Mixed-conifer Forests (PSW)	

List of Tables.....	
2-1. Watershed Restoration Projects - Providence_1.....	2-37
2-2. Watershed Restoration Projects - N_soaproot_2.....	2-38
2-3. Watershed Restoration Projects - Bear_fen_6.....	2-38
2-4. Summary of Treatments by Action Alternatives.....	2-44
2-5. Riparian Conservation Area (RCA) Widths and Definitions.....	2-49
2-6. Protection Measures for Fisher and Habitat.....	2-57
2-7. Current Studies in the Kings River Project.....	2-60
2-8. Comparison of Alternatives.....	2-66
3-1. Past, Present and Reasonably Foreseeable Activities.....	3-4
3-2. Acres of Forest Types for the Current Condition.....	3-10
3-3. Acres of Plantations Proposed for Treatment.....	3-11
3-4. Tree Size Distribution of Forest Conditions.....	3-24
3-5. Current Fire Regime Condition Class.....	3-32
3-6. Results of Wildfire Simulation.....	3-64
3-7. Prescribed Burn Program.....	3-70
3-8 Crown Bulk Density after Treatments by Alternative.....	3-73
3-9. Average Basal Area Mortality after Treatments by Alternative.....	3-73
3-10. Average Crowning Index after Treatments by Alternative.....	3-74
3-11. Fire Simulation within Initial 3 Hours.....	3-80
3-12. Wildfire after Treatments (Alt 3 vs. Alt 2).....	3-83
3-13. Canopy Bulk Density.....	3-83
3-14. Comparison of Weather Variables.....	3-86
3-15. Fire Behavior Comparison of Cool and Hot Season Burn Parameters.....	3-88
3-16. Comparison of Fire Behavior and Consumption between Cool and Hot Burn Prescription.....	3-89
3-17. Comparison of Average Percent of Crowning Trees per Acre and Large Debris Consumed between Two Prescribed Burn Prescriptions.....	3-90
3-18. Road Mileage and Construction Cost Summary.....	3-95
3-19. Tons of Estimated Pollutants, Underburn Program of Work.....	3-98
3-20. Tons of Estimated Pollutants, Underburn Program of Work.....	3-99
3-21. Burn Emissions.....	3-100
3-22. Mechanical Harvesting Emissions.....	3-101

3-23. Tons of Estimated Pollutants – Underburn Program of Work.....	3-102
3-24. Cumulative Effects of Sensitive Plant Species.....	3-112
3-25. Occurrences Affected by Activities.....	3-113
3-26. Determination for Action Alternatives.....	3-114
3-27. Stream Systems, Sub-watersheds and Miles of Stream.....	3-127
3-28. Subset of Flow Estimates.....	3-130
3-29. Stream Flow at Gauging Stations.....	3-131
3-30. Selected Stream Flow Information.....	3-131
3-31. California Designated Beneficial Uses for Dinkey Creek and Big Creek...	3-132
3-32. Water Quality in Big Creek and Dinkey Creek, 1979-1983.....	3-134
3-33. V* Reach Data 2003-2004 (after Morales 2004).....	3-137
3-34. Selected SCI Attributes.....	3-138
3-35. Reaches with Channel Types.....	3-139
3-36. Miles of Road in Riparian Conservation Areas (RCAs) and Number of Stream Crossings.....	3-140
3-37. Comparison of Estimated Average Annual Sediment Production at Road and Stream Crossings.....	3-141
3-38. Summary of ERA by Sub-watershed.....	3-143
3-39. Information Gathered for the Detailed Cumulative Watershed Effects.....	3-145
3-40. Percent Change in Basal Area and Canopy Cover.....	3-150
3-41. Bear Meadow Erosion and Sedimentation Watershed Analysis.....	3-157
3-42. Detailed CWE Assessment – Alternative 1.....	3-162
3-43. Mitigation Measures for Sub-watersheds Currently Over Their Threshold of Concern.....	3-163
3-44. Conclusions of Detailed CWE Assessment – Alternative 5.....	3-163
3-45. Mitigation Measures for Sub-watersheds Currently Over Their Threshold of Concern, Alternative 3.....	3-164
3-46. Effects of Each Alternative on Indicators Selected for the Watershed Analysis.....	3-165
3-47. Aquatic Species Located within Kings River Project.....	3-173
3-48. Predicted Affect on Stream Temperatures – Helicopter Treatments.....	3-182
3-49. Percent Trees in SMZ Based on Current Height Criteria.....	3-185
3-50. Large Woody Debris Data.....	3-187
3-51. Effects of Alternatives on Aquatic Species and Outcome Determinations for Each.....	3-196
3-52. Acres of Forest Types for Current Conditions.....	3-198
3-53. Forest Service Sensitive Species.....	3-201
3-54. Summary of Determinations for All Action Alternatives.....	3-201
3-55. Current CWHR Habitat Acreage.....	3-203
3-56. Changes in Percent of Suitable Nesting/Roosting Habitat for California Spotted Owl Protected Activity Centers.....	3-205
3-57. Current and Post-treatment Suitable Habitat Acres for Two Northern Goshawk Territories.....	3-210
3-58. Selection of MIS for Project-level Habitat Analysis for the Eight Management Units of the Kings River Project.....	3-226
3-59. Present Net Value, Proposed Action.....	3-243

3-60. Present Net Value, No Action.....	3-243
3-61. Present Net Value, Reduction of Harvest Tree Size.....	3-243
3-62. Present Net Value, Reduction of Harvest Tree Size.....	3-244
3-63. Present Net Value, Reduction of Harvest Tree Size.....	3-244

List of Figures.....

1.1 – Pre-1850 Forest Conditions.....	1-8
2-1. General Vicinity Map for the Kings River Project.....	2-3
2-2. Bear_fen_6 Management Unit (Bear_fen) - 2,205 acres.....	2-4
2-3. Bear_fen_6, Land Allocations and Designations.....	2-5
2-4. Bear_fen_6, Aquatic Resource Allocations and Designations.....	2-6
2-5. Bear_fen_6, All Treatments.....	2-7
2-6. El_o_win_1 Management Unit (El_o_win) - 1,357 acres.....	2-8
2-7. El_o_win_1, Land Allocations and Designations.....	2-9
2-8. El_o_win_1, Aquatic Allocations and Designations.....	2-10
2-9. El_o_win_1, All Treatments.....	2-11
2-10. Glen_meadow_1 Management Unit (Glen_mdw) - 1,618 acres.....	2-12
2-11. Glen_meadow_1, Land Allocations and Designations.....	2-13
2-12. Glen_meadow_1, Aquatic Allocations and Designations.....	2-14
2-13. Glen_meadow_1, All Treatments.....	2-15
2-14. Krew_bul_1 Management Unit (Krew_bul) - 1,195acres	2-16
2-15. Krew_bul_1, Land Allocations and Designations.....	2-17
2-16. Krew_bul_1, Aquatic Allocations and Designations.....	2-18
2-17. Krew_bul_1, All Treatments.....	2-19
2-18. Krew_prv_1 Management Unit (Krew_prv) - 1,898 acres.....	2-20
2-19. Krew_prv_1, Land Allocations and Designations.....	2-21
2-20. Krew_prv_1, Aquatic Allocations and Designations.....	2-22
2-21. Krew_prv_1, All Treatments.....	2-23
2-22. North_soaproot_2, Management Unit (N_soapro) - 2,420 acres.....	2-24
2-23. North_soaproot_2, Land Allocations and Designations.....	2-25
2-24. North_soaproot_2 Aquatic Allocations and Designations.....	2-26
2-25. North_soaproot_2, All Treatments.....	2-27
2-26. Providence_1 Management Unit (Prov_1) - 2,015 acres.....	2-28
2-27. Providence_1, Land Allocations and Designations.....	2-29
2-28. Providence_1, Aquatic Allocations and Designations.....	2-30
2-29. Providence_1, All Treatments.....	2-31
2-30. Providence_4 Management Unit (Prov_4) - 1,049 acres.....	2-32
2-31. Providence_4, Land Allocations and Designations.....	2-33
2-32. Providence_4, Aquatic Allocations and Designations.....	2-34
2-33. Providence_4, All Treatments.....	2-35
2-34. Comparison of Southern Sierra Fisher Conservation Area with Map of 85 Percent of all Fisher Detections.....	2-41
3-1. Ongoing Activities in the Project Area.....	3-5
3-2. Active Cattle Allotments.....	3-6
3-3. Off-highway Vehicle and Over-snow Vehicle Routes.....	3-7
3-4. Private Land Ownership.....	3-8

3-5. Average Canopy Cover.....	3-13
3-6. Historical Reference Condition.....	3-18
3-7. Tree Size Distribution – Existing vs. 1900.....	3-19
3-8. Historical Reference Conditions.....	3-21
3-9. Dbh vs. Age in Mixed Conifer Stands.....	3-22
3-10. Historical Reference Conditions.....	3-23
3-11. Current Condition vs. Management Range.....	3-26
3-12. Escalating Wildland Fire Acres Burned (Forest Service only).....	3-31
3-13. Ponderosa Pine/Shrub.....	3-33
3-14. Providence_1.....	3-33
3-15. Ponderosa Pine/Shrub Thinned.....	3-34
3-16. Ponderosa Pine/Shrub Year 2025.....	3-34
3-17. North Fork Fire, 08/01.....	3-35
3-18. North Fork Fire 12/18/01.....	3-35
3-19. Sierra Mixed Conifer Condition.....	3-36
3-20. Bear_fen_6 Existing.....	3-36
3-21. Sierra Mixed Conifer Thinned.....	3-36
3-22. Sierra Mixed Conifer Year 2025.....	3-36
3-23. Rock Creek Fire area 20 years later (2001).....	3-37
3-24. Red Fir Existing Condition.....	3-38
3-25. Krew_bul_1 Existing Condition.....	3-38
3-26. Red Fir Thinned.....	3-38
3-27. Red Fir Year 2025.....	3-38
3-28. Chaparral/Hardwood Existing Condition.....	3-40
3-29. Providence_4 Existing Condition.....	3-40
3-30. Chaparral/Hardwood Thinned.....	3-40
3-31. Chaparral/Hardwood Year 2025.....	3-40
3-32. Risk of Insect Attack.....	3-43
3-33. Stem Area of Large Trees.....	3-45
3-34. Stem Area of Large Trees.....	3-45
3-35. Number of Stands with Tree Removals.....	3-47
3-36. Historic Tree Data.....	3-48
3-37. Regeneration Groups and Openings.....	3-55
3-38. Regeneration Groups and Openings.....	3-56
3-39. Prescribed Burn Severity.....	3-58
3-40. Prescribed Burn Severity.....	3-58
3-41. Effects of Fire on Canopy Cover.....	3-61
3-42. Fire Type.....	3-62
3-43. Flame Length and Fire Condition.....	3-65
3-44. Flame Length and Fire Condition.....	3-66
3-45. No Action Flame Length.....	3-67
3-46. Crown Bulk Density.....	3-72
3-47. Daily Mean Flows.....	3-129
3-48. Monthly Average Flows at the Big Creek Gauging Station.....	3-132
3-49. Yosemite Toad.....	3-178
3-50. Water Temperature Data.....	3-181

3-51. Possible Avenues of Solar Radiation.....	3-181
3-52. Snags within Project Area Streamside Management Zones (SMZs).....	3-183
3-53. Potential for Large Debris Recruitment into Stream Channels.....	3-184
3-54. CBI Landis 8 Habitat Suitability Map overlaid with Kings River Boundary and Management Units with 2008 Female Fisher Den Sites.....	3-214
3-55. Eight Management Units Outlined Fisher Corridor Buffers.....	3-217