



United States Department of Agriculture

Appendices for the Final Environmental Impact Statement

Lake Tahoe Basin Management Unit



Forest
Service

Pacific Southwest
Region

R5-MB-293c
August 2015

USDA is an equal opportunity provider and employer. To file a complaint of discrimination, write: USDA, Office of the Assistant Secretary for Civil Rights, Office of Adjudication, 1400 Independence Ave., SW, Washington, DC 20250-9410 or call (866) 632-9992 (Toll-free Customer Service), (800) 877-8339 (Local or Federal relay), (866) 377-8642 (Relay voice users).

El USDA (Departamento de Agricultura de los Estados Unidos, por sus siglas en inglés) es un proveedor y empleador que ofrece igualdad de oportunidad. Para presentar una denuncia por discriminación, escriba a: USDA, Office of the Assistant Secretary for Civil Rights, Office of Adjudication, 1400 Independence Ave., SW, Washington, DC 20250-9410 o llame al (866) 632-9992 (Llamada Gratuita a Atención al Cliente), (800) 877-8339 (Retransmisión Local o Federal), (866) 377-8642 (Usuarios de Voz y Retransmisión).

This document is the final revision of
the Land Management Plan FEIS
Appendices.

It incorporates the instructions from
the pre-decisional objection period.

Cover photo:

View of Desolation Wilderness, looking north over Dick's Lake
and Fontanillis Lake, with the lower Velmas on the far right.

Credit – all photos, graphs and maps:

U.S. Forest Service staff, Lake Tahoe Basin Management Unit
may be duplicated for public use (not for profit)

Appendices for the FEIS for the Lake Tahoe Basin Management Unit Land Management Plan

Contents

| | |
|--|------|
| Appendix A: Forest Plan Monitoring and Evaluation Plan | A-1 |
| Appendix B: Wild and Scenic River Inventory and Evaluation..... | B-1 |
| Introduction | B-1 |
| River Inventory..... | B-1 |
| Currently Eligible and Suitable Rivers..... | B-4 |
| Rivers Determined to be Not Suitable..... | B-6 |
| Eligibility Evaluation and Classification of Eligible Segments | B-7 |
| Region of Comparison | B-18 |
| Existing Wild and Scenic Rivers Nearby | B-20 |
| Public Involvement..... | B-20 |
| ORV Evaluation Tables..... | B-22 |
| Maps | B-29 |
| Appendix C: Evaluation of Areas for Potential Wilderness | C-1 |
| Introduction | C-1 |
| Overview of Areas Evaluated..... | C-2 |
| Capability | C-10 |
| Availability | C-41 |
| Need for Wilderness | C-43 |
| Agency Recommendation..... | C-51 |
| Effect of Recommendations..... | C-51 |
| Appendix D: LTBMU Climate Change Trend Assessment | D-1 |
| Local trends in climate over the past century | D-3 |
| Regional trends over the last century linked to climate change | D-8 |
| Future predictions | D-14 |
| Appendix E: LTBMU Species Diversity | E-1 |
| E.1. Forest-wide Biological Concepts | E-1 |
| E.2. Species Viability and Species Lists | E-2 |

| | |
|--|------|
| E.2.1. FWS - List of Threatened, Endangered, Proposed, and Candidate Species for the LTBMU | E-7 |
| E.2.2. USFS List of Sensitive Species for the LTBMU | E-8 |
| E.2.3. TRPA Threshold Species and Sensitive Species | E-9 |
| E.2.4. Invasive Species..... | E-10 |
| E.2.5. Species Specific Limited Operating Periods..... | E-18 |
| E.2.6. Full List of Species Considered for the FEIS..... | E-20 |
| Appendix F: Social and Economic Assessment..... | F-1 |
| Introduction | F-1 |
| Study Area | F-1 |
| Background..... | F-4 |
| Economic Conditions and Trends | F-16 |
| Employment Trends..... | F-20 |
| Income | F-23 |
| Unit Economic Contribution Analysis | F-27 |
| Current Conditions of Forest Economic Contribution..... | F-30 |
| Appendix G: Timber Suitability Analysis | G-1 |
| Lands Generally Not Available for Timber Harvest (sec. 62.1)..... | G-1 |
| Lands Suitable for Timber Production (sec. 62.21)..... | G-1 |
| Other Lands Where Trees May Be Harvested for Multiple Use Values Other Than Timber Production (sec. 62.22) | G-1 |
| Other Land Generally Suitable for Timber Harvest (sec. 62.22) | G-2 |
| Timber Sale Program Quantity (TSPQ) and Long-Term Sustained-Yield Capacity (LTSYC) (sec. 65.3) | G-4 |
| Appendix H: Comparison of Alternatives by Management Strategy | H-1 |
| Appendix I: Comparison of Alternatives by Objective | I-1 |
| Appendix J: Alternative A – Standards and Guidelines | J-1 |
| Appendix K: Previous Decisions That Remain in Place..... | K-1 |
| Appendix L: References Cited | L-1 |
| References Cited | L-2 |
| Appendix M: Glossary of Acronyms and Terms..... | M-1 |
| Abbreviations and Acronyms | M-1 |
| Definition of Selected Acronyms | M-2 |
| Appendix N: Response to Comments | N-1 |
| Introduction and Process | N-2 |
| Content Analysis | N-2 |

| | |
|--|-------|
| Response Process | N-3 |
| Response to Comments | N-5 |
| Planning | N-5 |
| Access and Travel Management | N-26 |
| Air Quality | N-34 |
| Aquatic Wildlife Habitat and Species | N-34 |
| Botany | N-37 |
| Climate Change | N-38 |
| Cultural Resources | N-44 |
| Tribal Relations | N-45 |
| Fire and Fuels | N-45 |
| Forest Vegetation..... | N-53 |
| Interpretive Services, Conservation Education, and Visitor Services | N-74 |
| Lands Program | N-74 |
| Recreation..... | N-76 |
| Scenic Resources | N-103 |
| Terrestrial Wildlife Habitat and Species, Including Management Indicator Species (MIS)..... | N-104 |
| Water Quality and Soil Erosion; Watershed Condition | N-143 |
| Wilderness | N-148 |
| Cumulative Environmental Consequences | N-148 |
| Response to EPA Letter | N-151 |
| Comments Received from Federal, State, Local Agencies, and Elected Officials | N-158 |
| Appendix O: LTBMU Effects Analysis..... | O-1 |
| The Unpredictability of Natural Conditions and Human Values Over Time | O-2 |
| The Analytical Methodology Employed in Chapter 3 of the EIS | O-3 |
| The Uncertainty and Risks Associated With Forecasting Environmental Effects | O-3 |

List of Tables

| | |
|---|------|
| Table B 1. LTBMU inventory of rivers | B-1 |
| Table B 2. Tributaries of the Upper Truckee River | B-3 |
| Table B 3. ORVs and Scale of Importance for LTBMU rivers on National Forest System (NFS) Lands | B-22 |
| Table B 4. ORVs and Scale of Importance for tributaries of the Upper Truckee River | B-28 |
| Table C 1. Overview of LTBMU Wilderness | C-8 |

| | |
|---|------|
| Table C 2. Wilderness Capability Ratings (Desolation-Pyramid Roadless) | C-11 |
| Table C 3. Wilderness Capability Ratings (Dardanelles Roadless)..... | C-16 |
| Table C 4. Wilderness Capability Ratings (Freel Roadless)..... | C-21 |
| Table C 5. Wilderness Capability Ratings (Lincoln Creek Roadless)..... | C-26 |
| Table C 6. Wilderness Capability Ratings (Mt. Rose Wilderness and Roadless)..... | C-31 |
| Table C 7. Wilderness Capability Ratings (The Granite Chief Wilderness and Roadless)..... | C-36 |
| Table C 8. Area Availability Resource Criteria..... | C-41 |
| Table C 9. Details of the Availability Assessment for Areas Being Evaluated for Potential Wilderness on the Lake Tahoe Basin Management Unit | C-42 |
| Table C 10. Summary of Assessments (by Area)..... | C-58 |
| Table E 1. Forest Service Sensitive (FSS) List for the LTBMU. | E-8 |
| Table E 2. TRPA Threshold Species List..... | E-10 |
| Table E 3. Terrestrial Invasive Plant Species (Noxious Weed) of Management Concern on LTBMU – as updated (April 2015) | E-14 |
| Table E 4. Aquatic Invasive Species List..... | E-18 |
| Table E 5. Complete List of Species Considered within the LTBMU FEIS..... | E-21 |
| Table F 1. Population 2000-2011..... | F-5 |
| Table F 2. Race and Ethnicity, LTR, 2011 | F-9 |
| Table F 3. Zip Codes for Economic Analysis for the Lake Tahoe Region | F-28 |
| Table F 4. LTBMU Economic Contribution to Lake Tahoe Region (2008) | F-31 |
| Table F 5. Employment by Program Area for the Lake Tahoe Region..... | F-32 |
| Table F 6. Risk Assessment | F-33 |
| Table G 1. LTBMU Timber Sale Program Quantity (by Practice) | G-5 |
| Table G 2. LTBMU Long-Term Sustained Yield Capacity by Vegetation Type | G-6 |
| Table L 1. Specific common locations of materials published by government entities..... | L-1 |

List of Figures

| | |
|---|------|
| Figure B 1. Upper Truckee River recommended wild river segment..... | B-5 |
| Figure B 2. Eagle Creek eligible river segment..... | B-9 |
| Figure B 3. Glen Alpine Creek eligible river segment..... | B-11 |
| Figure B 4. Taylor Creek eligible river segment..... | B-14 |
| Figure B 5. Upper Truckee River recommended and eligible segments | B-16 |
| Figure B 6. Ecological subsections of the Lake Tahoe Basin Management Unit (TEUI) | B-19 |
| Figure B 7. Existing Wild and Scenic Rivers Nearby | B-20 |
| Figure C 1. LTBMU Evaluated Areas and Land Status Map | C-9 |
| Figure C 2. Desolation Wilderness Addition - Pyramid Roadless Map (0519-001) | C-15 |
| Figure C 3. Dardanelles Roadless Area Map (0519-002)..... | C-20 |

| | |
|---|------|
| Figure C 4. Freel/Jobs Peak Roadless Area Map (0519-003)..... | C-25 |
| Figure C 5. Lincoln Creek Roadless Area Map (0519-004)..... | C-30 |
| Figure C 6. Mt. Rose Wilderness and Roadless Additions Area Map (0519-005)..... | C-35 |
| Figure C 7. Granite Chief Wilderness Additions Map (0519-006)..... | C-40 |
| Figure D 1. Annual mean, mean maximum, and mean minimum temperatures at Tahoe City, California, 1910-2008 | D-7 |
| Figure D 2. Mean annual precipitation at Tahoe City, California, 1910-2008. Data from WRCC 2008..... | D-8 |
| Figure D 3. Five-year coefficients of variation in annual precipitation at Tahoe City, California, 1910-2008. Data from WRCC 2008..... | D-9 |
| Figure D 4. Trends in the amount of water contained in the snowpack (“snow water equivalent”) on April 1, for the period 1950-1997. | D-10 |
| Figure D 5. Spatial differences in mean annual temperature (A), and mean annual precipitation (B) between the 1930s and 2000s, as derived by the PRISM climate model. | D-11 |
| Figure D 6. (A) Distribution of major vegetation types in the central and northern Sierra Nevada in the period 1932-1936..... | D-15 |
| Figure D6. (B) Distribution of major vegetation types in the central and northern Sierra Nevada in 2000. | D-16 |
| Figure D 7. MC1 outputs for the Sierra Nevada Ecological Section, current vs. future projections of vegetation extent..... | D-21 |
| Figure D 8. Percent change in projected mean annual area burned for the 2050-2099 period relative to the mean annual area burned for the historical period (1895-2003). | D-22 |
| Figure E 1. Species-at-risk viability evaluation process diagram..... | E-6 |
| Figure F 1. Greater Lake Tahoe Area (GLTA) | F-2 |
| Figure F 2. Lake Tahoe Region by Census County Divisions (CCD) | F-3 |
| Figure F 3. Percent Population, LTR, 2011 | F-6 |
| Figure F 4. Population Change, Regional, 2000-2011 | F-6 |
| Figure F 5. Population Change, LTR, 2000 - 2011 | F-7 |
| Figure F 6. Race and Ethnicity, Regional, 2011 | F-8 |
| Figure F 7. Race and Ethnicity by CCD, LTR, 2011 | F-8 |
| Figure F 8. Poverty by Race and Ethnicity, Regional, 2011 | F-10 |
| Figure F 9. Poverty by Race and Ethnicity, LTR, 2011..... | F-11 |
| Figure F 10. Age Distribution, Regional, 2010..... | F-11 |
| Figure F 11. Age Distribution, LTR, 2010 | F-12 |
| Figure F 12. Educational Attainment, Regional, 2011 | F-12 |
| Figure F 13. Educational Attainment, LTR, 2011..... | F-13 |
| Figure F 14. Housing Occupancy Status, Regional, 2010..... | F-13 |
| Figure F 15. Housing Occupancy Status, LTR, 2010 | F-14 |
| Figure F 16. Housing Tenure, Regional, 2010..... | F-14 |
| Figure F 17. Renter vs. owner-occupied housing, 2010 | F-15 |

| | |
|---|------|
| Figure F 18. Employment by Labor Sector, Regional, 2003..... | F-16 |
| Figure F 19. Regional Comparison of Employment by Industry (NAICS), 2003..... | F-17 |
| Figure F 20. Employment by Industry (NAICS), GLTA and LTR, 2006 | F-17 |
| Figure F 21. Employment Distribution by Industry (NAICS), 2000. Lake Tahoe Region by CCD | F-18 |
| Figure F 22. Regional Unemployment, 2011 | F-19 |
| Figure F 23. Unemployment, Lake Tahoe Region CCDs, 2011 | F-19 |
| Figure F 24. Trends in Employment by Labor Sector, Regional, 1993-2003. | F-20 |
| Figure F 25. Trends in Employment by Industry, Greater Lake Tahoe Region, 2003-2006..... | F-21 |
| Figure F 26. Trends in Employment by Industry, Lake Tahoe Region, 2000-2006..... | F-21 |
| Figure F 27. Trends in Unemployment Rates, Regional, 1990 - 2000 | F-22 |
| Figure F 28. Trends in Unemployment Rates, Lake Tahoe Region, 1990- 2000 | F-22 |
| Figure F 29. Income by Industry, Regional, 2003..... | F-23 |
| Figure F 30. Labor Income by Industry Sector, Lake Tahoe Region, 2006..... | F-24 |
| Figure F 31. Income by Labor Sector, Regional, 2003 | F-24 |
| Figure F 32. Income by Labor Sector, Lake Tahoe Region CCDs, 2003 | F-25 |
| Figure F 33. Percent Change in Personal Income by Labor Sector, Regional, 1993-2003 | F-25 |
| Figure F 34. Relative Income by Industry, Lake Tahoe Region, 2006 | F-26 |
| Figure G 1. Lands Generally Available for Timber Harvest Map | G-3 |
| Figure G 2. Projected Incidental Timber Volume (MMBF)..... | G-7 |
| Figure G 3. Projected Incidental Timber Volume (MMCF)..... | G-7 |