Sierra Nevada Forest Plan Amendment Volume 3, Chapter 3, Part 4

TABLE OF CONTENTS

The Table of Contents is divided into 6 Parts. Each Part begins with page 1. Information at the top and bottom of each page identifies the Part and page number being viewed.

I. Species of the Sierra Nevada	1
4.1. General Methods for Species Assessments	2
4.1.1. Species viability	
4.1.2. Assessing Environmental Consequences	
4.1.3. Species Viability Assessments	
4.1.4. Dealing with Uncertainty	
4.2. Vertebrate Species	1
4.2.1. Broad-Scale Trends in Vertebrate Species	1
Measures Used to Assess Trends in Terrestrial Vertebrate Species	
Methodology for Assessing Terrestrial Vertebrate Species, including Assumptions and	
Limitations	3
I. Affected Environment	
II. Environmental Consequences	6
Summary of Effects of the Alternatives on Terrestrial Vertebrate Species	
4.2.2. Mammals	
4.2.2.1. MULE DEER (Odocoileus hemonius)	23
4.2.3. Birds (Abstracted from Hejl 2000)	28
4.2.3.1. Terrestrial Land Birds	29
Moderate and Low Vulnerability Bird Species	
I. Affected Environment	
II. Environmental Consequences	29
4.2.3.2. Diurnal and Nocturnal Raptors (Abstracted From Keane 2000b)	39
Forest/Woodland Habitats Assessment Group	
Broad Elevational Distribution/ Habitat Generalist Assessment Group	
Low Elevational Distribution/Open Habitats Assessment Group	43
Broad Elevational Distributions/Open Habitats Assessment Group	45
Aquatic Habitats Assessment Group	
4.2.4. Amphibians	
Aquatic, Riparian, and Meadow Associates	
TERRESTRIAL ASSOCIATES	50
(OLD FOREST AND LOWER WESTSIDE HARDWOOD)	
Broad Scale Trends in Amphibians	
4.2.5. Fish	
I. Affected Environment	
II. Environmental Consequences	
4.2.6. Reptiles (Abstracted from Staub 2000)	
Broad Scale Trends in Reptiles	
Affected Environment	
Environmental Consequences	70

4.3. Endangered, Threatened, and Proposed Species	
4.3.1 Mammals	1
4.3.1.1. SIERRA NEVADA BIGHORN SHEEP (Ovis canadensis californiana)	
4.3.2 Birds	
4.3.2.1. BALD EAGLE (Haliaeetus leucocephalus)	
4.3.2.2. CALIFORNIA CONDOR (Gymnogyps californianus)	To
4.3.2.3. SOUTHWESTERN WILLOW FLYCATCHER (Empidonax traillii extimus)	
4.3.3. Amphibians	
4.3.3.1. CALIFORNIA RED-LEGGED FROG (Rana aurora draytonii)	
4.3.4. Fish	
I. Affected Environment	
Little Kern Golden Trout (Oncorhynchus mykiss whitei)	
Piaute Cutthroat Trout (Oncorhynchus clarki seleniris)	
Lahonton Cutthroat Trout (Oncorhynchus clarki henshawi)	
Modoc Sucker (Catostomus microps)	
Warner Sucker (Catostomus warnerensis)	
Shortnose Sucker (Chasmistes brevirostris) and	
Lost River Sucker (Deltistes luxatus)	
Central Valley Chinook, ESUs (Oncorhynchus tshawytscha)	
Spring run, Winter run	
Central Valley Steelhead (Oncorhynchus mykiss irideus)	56
Owens tui chub (Gila bicolor snyderi),	
Cowhead Lake tui chub (G. b. vaccaceps),	
Owens pupfish (Cyprinodon radiosus),	61
Sacramento splittail (Pogonichthys macrolepidotus)	
II. Environmental Consequences	0∠
Overview	2
4.4.1.1. PACIFIC FISHER (Martes pennanti)	
4.4.1.3. SIERRA NEVADA RED FOX	
4.4.1.4. WOLVERINE	
4.4.1.5. PALLID BAT (Antrozous pallidus)	
4.4.1.6. TOWNSEND'S BIG-EARED BAT (Plecotus townsendii)	
Environmental Consequences	
Summary of Consequences to Townsend's Big-Eared Bat	
4.4.1.7. SIERRA NEVADA SNOWSHOE HARE (Lepus americanus)	
4.4.2. Birds	
4.4.2.1. CALIFORNIA SPOTTED OWL	70
4.4.2.2. NORTHERN GOSHAWK	
Preferred Alternative	
4.4.2.3. WILLOW FLYCATCHER (Empidonax traillii)	
4.4.2.4. GREATER SANDHILL CRANE	
4.4.2.5. CALIFORNIA YELLOW-BILLED CUCKOO (Coccyzus americanus occidentalis)	
4.4.3. Amphibians	
WIDELY DISTRIBUTED AND N.O.I. SPECIES	209
4.4.3.1. FOOTHILL YELLOW-LEGGED FROG	209
4.4.3.2. MOUNTAIN YELLOW-LEGGED FROG	
4.4.3.3. YOSEMITE TOAD	
4.4.3.5. NORTHERN LEOPARD FROG	
Species occuring on only One or Two Forests	
4.4.3.6. BATRAČHOSEPS RELICTUS SPECIES COMPLEX	
4.4.3.7. OTHER FOREST SERVICE SENSITIVE SALAMANDERS	232
4.4.4. Fish	
I. Affected Environment	246
GOOSE LAKE LAMPREY (Lampetra tridentata ssp.)	246

CHINOOK SALMON, Fall run (Oncorhyncus tshawytscha)	
EAGLE LAKE RAINBOW TROUT (Oncorhynchus mykiss aquilarum)	250
VOLCANO CREEK GOLDEN TROUT (Oncorhynchus mykiss aguabonita)	252
GOOSE LAKE REDBAND TROUT (Oncorhynchus mykiss ssp.)	
MC CLOUD RIVER REDBAND TROUT (Oncorhynchus mykiss ssp.)	
WARNER VALLEY REDBAND TROUT (Oncorhynchus mykiss ssp.)	
GOOSE LAKE SUCKER (Catostomus occidentalis lacusanserinus)	
LAHONTON LAKE TUI CHUB (Oncorhynchus clarki pectinifer)	
GOOSE LAKE TUI CHUB (Gila bicolor thalassina)	250
HARDHEAD (Mylopharodon conocephalus)	
II. Environmental Consequences	
Environmental Outcomes	
4.4.5 Reptiles	268
4.4.5.1. NORTHWESTERN POND TURTLE (Clemmys marmorata)	268
4.4.5.2. CALIFORNIA LEGLESS LIZARD (Anniella pulchra pulchra)	
4.4.5.3. SIERRA NIGHT LIZARD	
4.4.5.4. PANAMINT ALLIGATOR LIZARD (Elgaria panamintina)	
4.4.5.5. COAST HORNED LIZARD (Phrynosoma coronatum)	276
4.5. Moderate and High Vulnerability Species and Species of Concern	
4.5.1. Mammals	
4.5.1.1. WHITE-TAILED HARE	
4.5.1.2. PYGMY RABBIT (Brachylagus idahoensis)	
4.5.1.3. SPOTTED BAT (Euderma maculatum)	13
4.5.1.4. SMALL-FOOTED MYOTIS (Myotis ciliolabrum)	17
4.5.1.5. SILVER-HAIRED BAT (Lasionycteris noctivagans)	21
4.5.1.6. LONG-LEGGED MYOTIS (Myotis volans)	27
4.5.1.7. HOARY BAT (Lasiurus cinereus)	
4.5.1.8. FRINGED MYOTIS (Myotis thysanodes)	
4.5.1.9. WESTERN MASTIFF BAT (Eumops perotis)	
4.5.1.10. WESTERN RED BAT (Lasiurus blossevillii)	
4.5.1.11. LONG-EARED MYOTIS (Myotis evotis)	
4.5.2. Birds	
4.5.2.1. BAND-TAILED PIGEONS (Columba fasciata)	5
4.5.2.2. BLACK TERN (Chlidonias niger)	
4.5.2.3. FORSTER'S TERN (Sterna forsteri)	
4.5.2.4. SWAINSON'S THRUSH (Catharus ustulatus)	
4.5.2.5. YELLOW-BREASTED CHAT (Icteria virens)	
4.5.2.6. MOUNTAIN WHITE-CROWNED SPARROW	
(Zonotrichia leucophrys oriantha)	
4.5.2.7. BANK SWALLOW (Riparia riparia)	
4.5.2.8. LONG-EARED OWL (Asio otus)	
4.5.2.9. OLIVE-SIDED FLYCATCHER (Contopus cooperi)	96
4.5.2.10. Purple Martin (Progne subis)	103
4.5.3. Amphibians	
4.5.3.1. MOUNT LYELL SALAMANDER (Hydromantes platycephalus)	109
4.5.4. Fish	
I. Affected Environment	
KERN BROOK LAMPREY (Lampetra hubbsi)	
Pacific LAMPREY (Lampetra tridentate tridentate)	112
KERN RIVER RAINBOW TROUT (Oncorhynchus mykiss gilberti)	
OWENS SUCKER (Catostomus fumeiventris)	114
MOUNTAIN SUCKER (Catostomus platyrhynchus)	
EAGLE LAKE TUI CHUB (Gila bicolor ssp.)	
PIT RIVER TUI CHUB (Gila bicolor ssp.)	
SACRAMENTO HITCH (Lavinia exilicauda exilicauda)	
OWENS SPECKLED DACE (Rhinichthys osculus ssp.)	
PIT RIVER ROACH (Lavinia symmetricus mitrulus)	
RED HILLS ROACH (Lavinia symmetricus ssp.)	110

Sierra Nevada Forest Plan Amendment

119
120
120
121
125
126
126
127
132
132
133
1
2
2
3
4
5
5
20
35

Volume 3, Chapter 3

LIST OF TABLES

The Lists of Tables and Figures is divided into 6 Parts. Each Part begins with page 1. Information at the top and bottom of each page identifies the Part and page number being viewed.

(There are no tables or figures in Part 4.1. There are no figures in Part 4.5 or Part 4.6.)

ownership class, compared to aerial extent of each grouping
Table 4.2.1b. Summary statistics calculated for the taxa assigned to eight clusters through a nonhierarchical multivariate clustering technique based on their changes in habitat utilities across alternatives. The first five rows in the body of the table are counts; the remaining rows are averages. Cluster Rsqr is a measure of the degree of correlation between an individual taxon's score and the cluster score
Table 4.2.1c. Cluster scores for the current condition, summarized by major forest types10
Table 4.2.1d. Percentage changes from current conditions in composite cluster scores (the sum of clusters 1 through 8) for each forest type projected through time for Alternative 8 Modified14
Table 4.2.1e. Listing of taxa included in the cluster analysis described in Section 4.2.1
Table 4.2.2.1a. Estimated Deer Populations for the Six DAUs in the Sierra Nevada Forest Plan Amendment Project Area (CDFG 1998). These six DAUs total 28,732,160 acres (44,894 square miles).
Table 4.2.2.1b. Projected Percent Change in Mule Deer Habitat Utility Scores Over 50 Years as a Result of Implementation of the Alternatives (Appendix B)
Table 4.2.3.1a. Number of land bird species (of 142) with more (+), similar (~), or less (-) conifer (CON) or montane hardwood (MHD) habitat units in 50 years under each alternative
Table 4.2.3.1b. Average relative changes in habitat units (in percent) for land birds with optimal habitat in each combination of vegetation and age or structural stage
Table 4.2.3.1c. Consequences of Alternatives on Bird Species34
Table 4.2.3.2a. Distribution of diurnal raptors in the Sierra Nevada Bioregion by assessment groups. 40
Table 4.2.3.2b. Projected percent change in overall habitat utility for raptors in the forest and woodland assessment group, from current conditions to 50 years in the future by FEIS alternative
Table 4.2.3.2c . Projected percent change in overall habitat utility for raptors in the broad elevational distribution/ habitat generalists assessment group, from current conditions to 50 years in the future by FEIS alternative
Table 4.2.3.2d. Projected percent change in overall habitat utility for raptors in the low elevational distribution/ open habitats assessment group, from current conditions to 50 years in the future by FEIS alternative
Table 4.2.3.2e. Projected percent change in overall habitat utility for raptors in the broad elevational distribution/ open habitats assessment group, from current conditions to 50 years in the future by FEIS alternative
Table 4.2.3.2f. Projected percent change in overall habitat utility for raptors in the aquatic habitats assessment group, from current conditions to 50 years in the future by FEIS alternative47

Table 4.2.4a . Aquatic, riparian, and meadow associated amphibian species, criteria for inclusion on the DEIS/FEIS list, risk analysis approach, main habitat association, important habitat elements, and key management issues	7
Table 4.2.4b. Aquatic, riparian, and meadow associated amphibian species distributions across the 11 Sierra Nevada National Forests	
Table 4.2.4c. Forest, woodland, and other habitat associated amphibian species, criteria for inclusion on the DEIS/FEIS list, risk analysis approach, main habitat association, important habitat elements, and key management issues	
Table 4.2.4d. Forest, woodland, and other habitat associated amphibian species distributions across the 11 Sierra Nevada National Forests.	
Table 4.2.4e. Percentages of historic and current distributions (range) of amphibian species at risk that occur across various land allocations	3
Table 4.2.5a. Fishes of concern within the planning area identified by Moyle and others (1996) as declining, or identified through the vulnerability assessment (Appendix R)	
Part 4.3	
Table 4.3.1.1a. Comparison of management activities that could affect habitats for the Sierra Nevada bighorn sheep by alternative	5
Table 4.3.1.1c. The estimated population outcomes through the planning horizon for the Sierra	5
Nevada bighorn sheep.	
Table 4.3.2.1a. Bald eagle breeding population data for California, 1990 to 1999.	
Table 4.3.2.1b. Bald Eagle territories and distribution by national forest	
alternative over the 50 year planning horizon	
Table 4.3.2.1d. Average assessment ratings for the bald eagle	
Table 4.3.2.1e. Estimated population outcomes through the planning horizon for the bald eagle 1	
Table 4.3.2.2a. Comparison of management activities that could affect habitats for the California	
condor by alternative over the 50 year planning horizon	
Table 4.3.2.2b. Average assessment ratings for the California condor	7
Table 4.3.2.2c. Estimated population outcomes through the planning horizon for the California Condor. 1	
Table 4.3.2.3a. Southwestern willow flycatcher status and distribution in California, 19992	
Table 4.3.2.3b. Comparison of management activities that could affect habitats for the Southwestern	
Willow flycatcher by alternative over the 50 year planning horizon	
Table 4.3.2.3c. Average assessment ratings for the Southwestern Willow flycatcher	5
Table 4.3.2.3d. Estimated population outcomes through the planning horizon for the Southwestern Willow flycatcher	6
Table 4.3.3.1a . A summary of primary risk factors and key conservation measures/management (standard and guideline # in parantheses) actions across FEIS alternatives for low to mid-	
elevation species, the California red-legged frog (Rana aurora draytonii) and foothill yellow-legged	
frog (<i>Rana boylii</i>), focusing on the aquatic habitat of these species	
Table 4.3.4a. The preferred water temperature for various life stages of steelhead	ŏ
Table 4.3.4b. Fish species federally endangered, threatened, or proposed for listing and occur on	2
Sierra Nevada national forest lands	
Table 4.3.4d. The assessment ratings over the planning horizon for the Federally listed fish species.6	

Table 4.4.1.1a. Key habitat features for fisher resting and denning sites	
Table 4.4.1.1b. Average home range sizes for fishers in California	4
Table 4.4.1.1c. Level of risk to coarse woody debris by alternative.	12
Table 4.4.1.1d. Outcome ratings for the fisher. Environment outcomes evaluate the estimated	
environmental conditions on Forest Service lands after 50 years under each alternative.	
Population outcomes evaluate the estimated population conditions based on the environment	
outcome and other risk factors.	16
Table 4.4.1.2a. Westside suitable habitat in the marten core elevation range	
(5,500 to 10,000 feet)	20
Table 4.4.1.2b. Eastside suitable habitat for the marten.	
Table 4.4.1.2c. Marten home range sizes in the Sierra Nevada.	21
Table 4.4.1.2d. Projected percent change in habitat utility values for the most frequent marten prey	•
species in the Sierra Nevada, after each alternative has been implemented for 50 years	
Table 4.4.1.2e. Outcome ratings for the marten. Environment outcomes evaluate the estimated	
environmental conditions on Forest Service lands after 50 years under each alternative.	
Population outcomes evaluate the estimated population conditions based on the environment	
outcome and other risk factors.	34
Table 4.4.1.2f. Outcome ratings for the Sierra Nevada red fox. Environment outcomes evaluate the	÷
estimated environmental conditions on Forest Service lands after 50 years under each	
alternative. Population outcomes evaluate the estimated population conditions based on the	
	43
Table 4.4.1.1d. Outcome ratings for the wolverine. Environment outcomes evaluate the estimated	
environmental conditions on Forest Service lands after 50 years under each alternative.	
Population outcomes evaluate the estimated population conditions based on the environment	
outcome and other risk factors.	
Table 4.4.1.5a. Affects of implementing Alternatives 2 through Modified 8	57
Table 4.4.1.5b Average assessment ratings for the pallid bat. Ratings represent average degree or	
confidence in each outcome being realized 50 years in the future	58
Table 4.4.1.5c. Average cumulative effect assessment ratings for the pallid bat. Ratings represent	
average degree of confidence in each outcome being realized 50 years in the future	
Table 4.4.1.6a. Effects of implementing Alternatives 2 through Modified 8	63
Table 4.4.1.6b. Average assessment ratings for the Townsend's big-eared. Ratings represent	
average degree of confidence in each outcome being realized 50 years in the future	64
Table 4.4.1.6c. Average cumulative effect assessment ratings for the Townsend's big-eared bat.	
Ratings represent average degree of confidence in each outcome being realized 50 years in the	
future	
Table 4.4.1.7a. Comparison of management activities that could affect habitats for the Sierra Neva	
snowshoe hare by alternative.	68
Table 4.4.1.7b. Average assessment ratings for the Sierra Nevada snowshoe hare. Ratings	
represent average degree of confidence in each outcome being realized 50 years in the future.	
(See Chapter 4, Part 4.1.5.) Total score for each alternative is 100	
Table 4.4.1.7c. represents the estimated population outcomes through the planning horizon for the	
Sierra Nevada snowshoe hare	
Table 4.4.2.1a. Number of California spotted owl sites by status known on Forest Service lands and	
non-Forest Service lands, since 1987, within the boundaries of the National Forests in the project	
area reported in the California Department of Fish and Game database (Fall 1998)	
Table 4.4.2.1b. Estimates of the finite rate of annual population change (lambda) from four Californ	
spotted owl demographic studies conducted in the Sierra Nevada, 1986-1998. Overall change	
computed by extrapolating lambda over the period of study.	
Table 4.4.2.1c. Range of mean values of some attributes in suitable habitat for spotted owls in Sier	
Nevada mixed-conifer forests (from Verner et al. 1992:96)	. 74
Table 4.4.2.1d. Distribution of known California spotted owl sites by reproductive status and fire	
hazard risk rating.	
Table 4.4.2.1e. Percentage of California spotted owl activity centers in land allocations where limite	
vegetation treatments are allowed	ช4

Table 4.4.2.1f. Projected percent changes in the amount of high and moderate suitability spotted on nesting and foraging habitat from the current to 50 years in the future under the FEIS	Wl
Alternatives	93
Table 4.4.2.1g. Projected percent changes in overall habitat suitability scores based on CWHR	
habitat models from the current to 50 years in the future across the FEIS Alternatives	
Table 4.4.2.1h. Projected percent changes in overall habitat suitability scores for select prey species	es
of California spotted owls based on CWHR habitat models from the current to 50 years in the	00
future across the FEIS Alternatives	
owl habitat following vegetation treatment prescriptions projected in the alternatives	
Table 4.4.2.1j. Number of acres (in thousands) scheduled for vegetation treatments by alternative	
the first and second decades (excludes brush, plantation, and retreatment acres)	
Table 4.4.2.1k. Proportion of the spotted owl activity centers that occur within the urban intermix zo	
by geographic area of concern	
Table 4.4.2.11. Total of the projected annual acres of wildfire burned and the estimated annual acres	
of higher intensity vegetation treatments* (in thousands)	104
Table 4.4.2.1m. Environmental outcome ratings for the California spotted owl. Ratings other than	. 1
"current" represent the outcome most likely to be realized 50 years in the future. (See Chapter Part 4.1.5.)	
Table 4.4.2.2a. Number of northern goshawk breeding territories reported by Sierra Nevada Nation	
Forests	
Table 4.4.2.2b. Distribution of northern goshawk territories reported by Sierra Nevada National	
Forests and in the California Department of Fish and Game database in the Sierra Nevada	
Bioregion by fire hazard risk rating.	
Table 4.4.2.2c. Percent of known northern goshawk breeding territories reported by Sierra Nevada	
National Forests and in the California Department of Fish and Game database that are located	ni t
land allocations (wilderness, integrated biodiversity reserves, old forest emphasis areas) designated to receive limited treatment under each FEIS Alternative	120
Table 4.4.2.2d. Consequences of the alternatives on eight factors affecting northern goshawks	
Table 4.4.2.2e. Projected percent changes in the amount of high and moderate suitability northern	
goshawk nesting and foraging habitat from the current to 50 years in the future across the FEI	
Alternatives	132
Table 4.4.2.2f. Projected percent changes in overall habitat suitability scores based on CWHR hab	
models from the current to 50 years in the future across the FEIS Alternatives.	
Table 4.4.2.2g. Projected percent changes in CWHR habitat suitability for select northern goshawk	
prey species from the current time to year 50 across the FEIS alternatives	
Forests by major land allocation under the preferred alternative. Numbers in parentheses are	лаі
territories located in the California Department of Fish and Game database	137
Table 4.4.2.2i. Estimated outcome ratings for the northern goshawk. Environmental outcomes	
evaluate the estimated environmental conditions on Forest Service lands after 50 years under	
each alternative. Population outcomes evaluate the estimated population conditions based on	
the environment outcome and other risk factors.	
Table 4.4.2.3a. Nest success for willow flycatchers across various studies and years	
Table 4.4.2.3b. Acres of shrubby wet meadows containing known or potential willow flycatcher hab in active, inactive, non-allotments, and outside allotments on Forest Service land within Sierra	ııtat
Nevada Forest Plan Amendment Project Planning Area.	160
Table 4.4.2.3c. Acres of Wet Shrubby Meadows Containing Known or Potential Willow Flycatcher	100
Habitat Inside and Outside 5-mile Buffers in active, inactive, non-allotments and outside	
allotments on National Forest lands in Sierra Nevada Forest Plan Amendment Project Plannin	g
Area	170
Table 4.4.2.3d. Acres of Shrubby Wet Meadows Containing Known or Potential Willow Flycatcher	
Habitat Inside and Outside 100-foot Stream Buffers in active, inactive, non-allotments, and	
outside allotments on National Forest lands in Sierra Nevada Forest Plan Amendment Project Planning Area	
Table 4.4.2.3e. Environmental outcomes for willow flycatchers by alternative.	
Table 4.4.2.3f. Estimate of Wet Shrubby Meadows Containing Known or Potential Willow Flycatches	
Habitat (acres) by Ownership within Sierra Nevada Forest Plan Amendment Project Planning	
	194

	Table 4.4.2.3g. Estimate of Known Willow Flycatcher Sites (acres) by Ownership in active, inactive, non-allotments and outside allotments within Sierra Nevada Forest Plan Amendment Project	
	Planning Area	
	Table 4.4.2.3h. Population outcomes for willow flycatchers by alternative	97
	Table 4.4.2.4a. Comparison of management activities that could affect habitats for the greater sand	
	crane by alternative	
	Table 4.4.2.4b. Average assessment ratings for the greater sandhill crane. 2	:02
	Table 4.4.2.4c. represents the estimated population outcomes through the planning horizon for the	
	greater sandhill crane2	
	Table 4.4.2.5a. Average assessment ratings for the California yellow-billed cuckoo. 2	:08
	Table 4.4.2.5b. represents the estimated population outcomes through the planning horizon for the California yellow-billed cuckoo.	208
	Table 4.4.3.1a. Average assessment ratings for the foothill yellow-legged frog. Ratings represent average degree of confidence in each outcome being realized 50 years in the future. (See Chapter 4, Part I.) Total score for each alternative is 100	213
	Table 4.4.3.2a. Average assessment ratings for the mountain yellow-legged frog. Ratings represent	
	average degree of confidence in each outcome being realized 50 years in the future. (See Chapter 4, Part 1.) Total score for each alternative is 100	
	Table 4.4.3.3a. Average assessment ratings for the Yosemite toad. Ratings represent average	
	degree of confidence in each outcome being realized 50 years in the future. (See Chapter 4, Particular Score for each alternative is 100	
	Table 4.4.3.6a. A summary of primary risk factors and key conservation measures/ management	
	actions (standard and guideline # in parantheses) across FEIS alternatives for high elevation species, the mountain yellow-legged frog (<i>Rana muscosa</i>) and the Yosemite toad (<i>Bufo canoru</i>	(2)
	focusing on the aquatic habitat of these species.	
	Table 4.4.4a. Sierra Nevada bioregion fish focal species	
	Table 4.4.4b. Assessment ratings over the 50 year planning horizon for Forest Service sensitive fish	
	species	
	Table 4.4.4c. represents the assessment ratings over the planning horizon for the Forest Service	
	sensitive fish species.	267
	Table 4.4.5.1a. Comparison of management activities that could affect habitats for the western pondurtle by alternative	d
	Table 4.4.5.2a. Comparison of management activities that could affect habitats for the California	.70
	legless lizard by alternative	73
	Table 4.4.5.4a. Comparison of management activities that could affect habitats for the Panamint	.73
	alligator lizard by alternative	75
	Table 4.4.5.5a. Comparison of management activities that could affect habitats for the coast horned	.7 J 1
	lizard by alternative	
Pa	rt 4.5	
	Table 4.5.1.1a. Average assessment ratings for the white-tailed hare. Ratings represent average degree of confidence in each outcome being realized 50 years in the future. (See Chapter 4, Pa 4.1.5.)	
	Table 4.5.1.1b. Average assessment ratings for the white-tailed hare. Ratings represent average	-
	degree of confidence in each outcome being realized 50 years in the future. (See Chapter 4, Pa	art
	4.1.5.)	5
	Table 4.5.1.2a. Comparison of management activities that could affect habitats for the pygmy rabbit	
	by alternative	
	Table 4.5.1.2b. Average assessment ratings for the pygmy rabbit. Ratings represent average degr	
	of confidence in each outcome being realized 50 years in the future	
	Table 4.5.1.2c. Average cumulative effect assessment ratings for the pygmy rabbit. Ratings	
	represent average degree of confidence in each outcome being realized 50 years in the future	.12
	Table 4.5.1.3a. Affects of implementing Alternatives 2 to Modified 8 on spotted Bat	
	Table 4.5.1.3b. Average assessment ratings for the spotted bat. Ratings represent average degree	
	of confidence in each outcome being realized 50 years in the future	
		_

Table 4.5.1.3c. Average cumulative effect assessment ratings for the spotted bat. Ratings represent	t
average degree of confidence in each outcome being realized 50 years in the future	16
Table 4.5.1.4a. Effects of implementing Alternatives 2 through Modified 8 for the small-footed myotis	.18
Table 4.5.1.4b. Average assessment ratings for the small-footed myotis. Ratings represent average	
degree of confidence in each outcome being realized 50 years in the future	
Table 4.5.1.4c. Average cumulative effect assessment ratings for the small-footed myotis. Ratings	. •
represent average degree of confidence in each outcome being realized 50 years in the future. 2	20
Table 4.5.1.5a. Affects of implementing Alternatives 2 – Modified 8 for the silver-haired bat	
	23
Table 4.5.1.5b. Average assessment ratings for the silver-haired bat. Ratings represent average	
degree of confidence in each outcome being realized 50 years in the future.	24
Table 4.5.1.5c. Average cumulative effect assessment ratings for the silver-haired bat. Ratings	
represent average degree of confidence in each outcome being realized 50 years in the future. 2	
Table 4.5.1.6a. Affects of implementing Alternatives 2 through Modified 8	28
Table 4.5.1.6b. Average assessment ratings for the long-legged myotis. Ratings represent average	
degree of confidence in each outcome being realized 50 years in the future	29
Table 4.5.1.6c. Average cumulative effect assessment ratings for the long-legged myotis. Ratings	
represent average degree of confidence in each outcome being realized 50 years in the future. 3	30
Table 4.5.1.7a. Effects of implementing Alternatives 2 through Modified 8	
Table 4.5.1.7b. represents the assessment ratings for the hoary bat. Ratings represent the average	
degree of confidence in each outcome being realized 50 years in the future	
Table 4.5.1.7c. Average cumulative effect assessment ratings for the hoary bat. Ratings represent	•
average degree of confidence in each outcome being realized 50 years in the future	34
Table 4.5.1.8a. Effects of implementing Alternatives 2 through Modified 8.	
Table 4.5.1.8b. Average assessment ratings for the fringed myotis. Ratings represent average	וכ
	00
degree of confidence in each outcome being realized 50 years in the future.	00
Table 4.5.1.8c. Average cumulative effect assessment ratings for the fringed myotis. Ratings	20
represent average degree of confidence in each outcome being realized 50 years in the future.	
Table 4.5.1.9a. Effects of implementing Alternatives 2 through Modified 8 for the Western mastiff bat	
Table 4.5.1.9b. Average assessment ratings for the Western mastiff bat. Ratings represent average	
degree of confidence in each outcome being realized 50 years in the future	
Table 4.5.1.10a. Affects of implementing Alternatives 2 to Modified 8 for Western red bat. 4	1 5
Table 4.5.1.10b. Average assessment ratings for the Western red bat. Ratings represent average	
degree of confidence in each outcome being realized 50 years in the future4	16
Table 4.5.1.10c. Average cumulative effect assessment ratings for the Western red bat. Ratings	
represent average degree of confidence in each outcome being realized 50 years in the future. 4	
Table 4.5.1.11a. Affects of implementing Alternatives 2 through Modified 84	19
Table 4.5.1.11b. Average assessment ratings for the long-eared myotis. Ratings represent average	
degree of confidence in each outcome being realized 50 years in the future	50
Table 4.5.1.11c. Average cumulative effect assessment ratings for the long-eared myotis. Ratings	
represent average degree of confidence in each outcome being realized 50 years in the future. 5	50
Table 4.5.2.1a. Summary of tables from Part 3.3 "Hardwood Ecosystems."	54
Table 4.5.2.1b. Estimated Population Outcomes for each alternative	
Table 4.5.2.2a. Comparison of management activities in riparian/meadow communities that could	
affect habitat for the black tern	59
Table 4.5.2.2b. Environmental Outcomes of Alternatives on national forest lands	
Table 4.5.2.2c. Environmental Outcomes of Alternatives on national forest lands and non-federal	,,,
lands6	20
	JU
Table 4.5.2.3a. Comparison of management activities in riparian/meadow communities that could	20
	33
Table 4.5.2.3b. Environmental Outcomes of Alternatives on national forest lands for the Forster's terms	n.6
Table 4.5.2.3c. Environmental Outcomes of Alternatives on national forest lands and non-federal	
lands for the Forster's tern6	
Table 4.5.2.4a. Environmental consequences of implementing the proposed alternatives. 7	73
Table 4.5.2.4b. Environmental Outcomes of Alternatives on national forest lands for the Swainson's	
thrush	74
Table 4.5.2.4c. Environmental Outcomes of Alternatives on national forest lands and non-federal	
lands for the Swainson's thrush7	
Table 4.5.2.5a. Comparisons of the Alternatives for the yellow-breasted chat 7	78

Sierra Nevada Forest Plan Amendment

Table 4.5.2.5b. Environmental Outcomes of Alternatives on national forest lands for the yellow-	
breasted chat.	79
Table 4.5.2.5c. Environmental Outcomes of alternatives on national forest lands and non-federal	
lands for the yellow-breasted chat	
Table 4.5.2.6a. Environmental Outcomes.	
Table 4.5.2.6b. Population Outcomes.	.83
Table 4.5.2.7a. Environmental Outcomes of Alternatives on national forest lands for the Bank	
swallow	.87
Table 4.5.2.7b. Environmental Outcomes of alternatives on national forest lands and non-Federal	
lands for the bank swallow	
Table 4.5.2.8a. Relative rankings comparing the contribution of each alternative toward maintaining	}
and restoring hardwood ecosystems sustainability, native species biodiversity in hardwood	
ecosystems, and aquatic, riparian, and meadow ecosystems	.94
Table 4.5.2.8b. Estimated environmental outcomes (after 50 years) by alternative for long-eared ov	vl
on planning area Forest Service lands.	.95
Table 4.5.2.8c. Estimated population outcomes (after 50 years) by alternative for long-eared owl or	ı all
lands in the Sierra Nevada Bioregion	.95
Table 4.5.2.9a. Estimated average annual burn acres during first decade (thousands of acres)*,	
estimated average annual acres treated during first 2 decades (thousands of acres), and relative	ve
overall ranking comparing the contribution of each alternative toward maintaining and providing	j
potential olive-sided flycatcher habitat.	101
Table 4.5.2.9b. Estimated environmental outcomes (after 50 years) by alternative for olive-sided	
flycatcher on planning area Forest Service lands	101
Table 4.5.2.9c. Estimated population outcomes (after 50 years) by alternative for olive-sided	
flycatcher on all lands in the Sierra Nevada Bioregion	
Table 4.5.2.10a. Environmental consequences of implementing the proposed alternatives over the	
year modeling horizon	107
Table 4.5.2.10b. Environmental Outcomes of Alternatives on national forest lands for the purple	
martin	
Table 4.5.2.10c. Environmental Outcomes of Alternatives on national forest lands and non-federal	
lands for the purple martin	
Table 4.5.4a. Moderate and high vulnerability species and species of concern	
Table 4.5.4b. The assessment ratings over the planning horizon for the moderate to high vulnerab	
fish species.	
Table 4.5.4c. The assessment ratings over the planning horizon for the moderate to high vulnerab	
fish species.	125
Table 4.5.5a. Summary of distribution of aquatic invertebrate species with respect to six general	
habitat types. Several species occur in more than one habitat type so several boxes may be	
checked in a row. Asterisks (*) indicate that the habitat is most suitable if it is closely associate	
with cold springs in the immediate vicinity.	
Table 4.5.5b. Summary of land management activities or conditions threatening the viability of aqua	
invertebrate species. The (?) qualifier indicates a potential rather than observed threat that has	í
not been specifically identified in published literature as causing historic or current detrimental	
imnacts	131

Table 4.6.3a. Threatened, endangered, and candidate plant species in Sierra Nevada national	
forests. Please see Biological Assessment for details on federally listed plants.	6
Table 4.6.3b. Summary of endemism, land ownership, and taxonomic characteristics of the 135	
threatened, endangered, proposed, and sensitive (TEPS) plant species	
Table 4.6.3c. Distribution of the 135 threatened, endangered, and sensitive plant species by habitat	
guilds. Species may occur in more than one guild, thus the total is greater than 135. Ten speci	es
did not fit into guild descriptions.	
Table 4.6.3d. Major threats for meadows and seeps guild	. 13
Table 4.6.3e. Major threats for bogs/fens guild	
Table 4.6.3f. Major threats for vernally wet guild	. 14
Table 4.6.3g. Major threats for riparian woodland guild	. 15
Table 4.6.3h. Major threats for riparian forest guild.	. 15
Table 4.6.3i. Major threats for lakeshore guild	. 16
Table 4.6.3j. Major threats for rock outcrop guild	. 16
Table 4.6.3k. Major threats for ultramaphic guild	. 17
Table 4.6.3I. Major Threats for cliff guild	. 17
Table 4.6.3m. Major threats for edaphic specialists guild	. 17
Table 4.6.3n. Major threats for interior forest guild.	. 18
Table 4.6.3o. Major threats for gap phase guild	. 18
Table 4.6.3p. Major threats for fire-following guild	. 19
Table 4.6.3q. Major threats for general openings guild	
Table 4.6.3r. Major threats for species with no guild assignment.	. 20
Table 4.6.3s. High vulnerability species occurring in the yellow pine type as defined by Munz and	
Keck (1968) (includes the mixed conifer belt). These species are most likely to be affected by	
management activities aimed at reducing fuels if they are in general forest, or by grazing and	
trampling by livestock if they occur in meadows surrounded by forests	
Table 4.6.3t. High vulnerability species occurring in the foothill woodland type. These species woul	
be affected by the hardwood strategy	
Table 4.6.3u. High vulnerability species occurring in the chaparral type	
Table 4.6.3v. High vulnerability species not listed in the Calflora database as occurring in the Yellov	N
Pine, Foothill Woodland, or Chaparral Munz types, but affected by the Aquatic, Riparian, and	
	. 27
Table 4.6.3w. Comparison of Habitat and Population Outcome Class for Threatened, Endangered,	
and Sensitive Plant species by alternative.	. 70

LIST OF FIGURES

	the planning area for 578 taxa including mammals, birds, amphibians, and reptiles. 6 Figure 4.2.1b. Relative cumulative frequency distributions for taxa grouped into eight clusters. T horizontal axis refer to the current total habitat utility, summed across forest vegetation types the national forests. The vertical axis is scaled such that cluster are successively stacked. Cluster 1 is on the bottom and ranges from 0 to 100; Cluster 2 ranges from 100 to 200, and s forth. Figures 4.2.1c-h. Relative cluster scores through time for each alternative, summarized over all forest types. Cluster scores are weighted averages of the individual taxa habitat utility values where each taxon belongs to a single cluster. Absolute values for cluster scores were divided the current condition estimate to generate relative scores depicted below. Figure 4.2.1i. The composite cluster score through time for Alternative 8 Modified, summarized of all forest types and taxa.	he on 10 s, d by 11 over
2	art 4.3	
	Figure 4.3.2.1a. Bald Eagle Breeding Population Trend in California, 1977 to 1999	9
Pá	art 4.4	
	Figure 4.4.2.1a. Distribution of owl nest plots by CWHR class on the Sierra, Eldorado, and Lassel National Forests.	75
	Figure 4.4.2.1b. Region-wide projected acres of pooled CWHR classes 4M, 4D, 5M, 5D and 6 Figure 4.4.2.1c. Region-wide projected change in CWHR class 5D.	
	Figure 4.4.2.1d. Region-wide projected change in CWHR class 5M	
	Figure 4.4.2.2a. Region-wide projected acres of pooled CWHR classes 4M, 4D, 5M, 5D and 6	
	Figure 4.4.2.2b. Region-wide projected acres of pooled CWHR class 5D.	
	Figure 4.4.2.2c. Region-wide projected acres of pooled CWHR class 5M.	
	Figure 4.4.2.2d. Region-wide projected acres of pooled CWHR class 4D.	141
	Figure 4.4.2.2e. Region-wide projected acres of pooled CWHR class 4M	142
	Figure 4.4.2.2f. Region-wide projected acres of pooled CWHR class 6	142
	Figure 4.4.2.2g. Region-wide projected change in CWHR habitat utility units for northern goshawl	ks
	across the FEIS alternatives	
	Figure 4.4.2.3a. Number and Distribution of known willow flycatcher sites in the Sierra Nevada Fo	
	Plan Amendment Project Planning Area by Ownership	
	Figure 4.4.2.3b. Cumulative percent of successful and unsuccessful Willow Flycatcher nests fled	
	by date in the Sierra Nevada: 1983, 1984, 1986, 1987, 1997, 1998, and 1999*	173
	-	