

# **PLACER COUNTY Natural Resources Report**

**A Scientific Assessment of Watersheds, Ecosystems and  
Species of the Phase I Planning Area**



*Placer County Planning Department, 2004*

# **PLACER COUNTY NATURAL RESOURCES REPORT**

---

*A Scientific Assessment of Watersheds, Ecosystems, and Species of the Phase I Planning Area*

Prepared By:

Jones & Stokes  
2600 "V" Street

Sacramento, California 95818-1914

Contact: Edward C. Beedy, Ph.D., Principal-in-Charge

Prepared for Placer County Planning Department

DeWitt Center

11414 "B" Avenue

Auburn, California 95603

Contact: Loren Clark, Assistant Planning Director

**April 2004**

---

## **Acknowledgments**

Jones & Stokes wishes to acknowledge the following individuals who provided technical assistance for this project and performed technical reviews of the draft Natural Resources Report: Mr. Jeff Finn and Dr. Todd Keeler-Wolf of the California Department of Fish and Game, Ms. Lori Rinek of the U.S. Fish and Wildlife Service, Mr. John Baker of the National Marine Fisheries Service, and Dr. Peter Brussard of the University of Nevada, Reno. We also thank the Sierra Business Council for financial assistance in producing the Final Natural Resources Report.

---

# TABLE OF CONTENTS

<b>Executive Summary</b>	<b>I</b>
<b>Chapter 1: Introduction</b>	<b>13</b>
Background and Purpose	13
Goals and Objectives	13
Watershed-Based Approach	13
<b>Chapter 2. Methods</b>	<b>17</b>
Phase I Planning Area Ecosystems and Watersheds	17
Watershed Boundaries	17
Ecosystem Classification Systems	17
Large-Patch Ecosystems	17
Small-Patch Ecosystems	17
Plant Diversity	18
Plant Species Lists	18
Invasive Nonnative Plants	19
Special-Status Plant Lists and Habitat Matrices	19
Animal Diversity	20
Animal Species Lists	20
Special-Status Animal Lists	20
Wildlife Habitat Relationships Matrix	20
Ecosystem and Land Cover Mapping	21
Aerial Photograph Interpretation and Mapping	21
Geographic Information System (GIS) Mapping and Analysis	22
Background	22
Data Sources and Management	22
Screening and Selection of Data Themes	22
Overview of GIS-Based Techniques	23
Ecosystem Data Themes	24

Error Correction Process	24
Verification of Watershed Data Themes	24
Feedback and Data Correction	25
<b>Chapter 3. Results of Watershed Analysis</b>	<b>29</b>
Phase I Planning Area Watersheds	29
Plant Diversity	29
Special-Status Plants	29
Special-status Plant and Habitat Relationships	30
Unique Features of Placer County Phase I Planning Area Plant Communities	30
Nonnative Invasive Plants	31
Animal Diversity	32
Special-Status Animals	32
Wildlife and Habitat Relationships	33
Aquatic and Open Water Ecosystems	34
Lacustrine (Reservoirs, Ponds, and Lakes)	34
Riverine (Rivers and Creeks)	36
Barren Ecosystems	40
Barren (Rock Outcrops, Cliffs, and Disturbed Lands)	40
Herbaceous Ecosystems	41
Annual Grassland	41
Fresh Emergent Wetland	43
Seasonal Wetland	46
Vernal Pools and Complexes	47
Shrub Ecosystems	50
Foothill Chaparral	50
Forested Ecosystems	53
Valley Foothill Riparian	53
Foothill Hardwood Woodland	55
Blue Oak Woodland	56

Valley Oak Woodland	57
Interior Live Oak Woodland	57
Mixed Hardwood	59
Oak-Foothill Pine Woodland	60
Oak Woodland-Savanna	62
Ponderosa Pine Forest	62
Agricultural Ecosystems	65
Rice	65
Row Crops	66
Alfalfa	67
Unidentified Croplands	67
Irrigated Pasture	67
Vineyards	68
Orchards	68
Urban Ecosystems	69
Urban/Suburban	70
Rural-Residential	70
Rural-Residential/Forested	71
Urban Parks and Golf Courses	72
Urban Riparian	72
Urban Woodland	72
Urban Wetland	73
Small-Patch Ecosystems	73
Landscape and Golf Course Ponds	73
Stock Ponds	73
Springs and Seeps	73
Mehrten Formation Soils	74
Serpentine Soils	75

## **Chapter 4. Species Accounts** **81**

Legenere	82
Dwarf Downingia	86
Bogg's Lake Hedge-hyssop	89
Ahart's Dwarf Rush	93
Red Bluff Dwarf Rush	96
Vernal Pool Fairy Shrimp	99
Vernal Pool Tadpole Shrimp	103
California Linderiella	106
Valley Elderberry Longhorn Beetle	109
Central Valley Chinook Salmon (Fall/Winter Runs)	113
Central Valley Steelhead	118
Foothill Yellow-legged Frog	123
California Red-legged Frog	128
Western Spadefoot Toad	134
California Tiger Salamander	138
Giant Garter Snake	143
Western Pond Turtle	147
Northern Harrier	152
Bald Eagle	155
Swainson's Hawk	159
Ferruginous Hawk	165
Rough-legged Hawk	169
Peregrine Falcon	173
California Black Rail	177
Yellow-billed Cuckoo	180
Western Burrowing Owl	183
Bank Swallow	186
Yellow Warbler	189

Yellow-breasted Chat	193
Grasshopper Sparrow	196
Modesto Song Sparrow	199
Tricolored Blackbird	202

**Chapter V: Citations 211**

Printed References	211
Personal Communications	238

**Tables 241**

*Tables*

---

Table 1. Placer County Wildlife Habitat Relationships Classification of Habitat and Land Cover Types in the Phase I NCCP/HCP Planning Area.

Table 2. A Crosswalk for Comparing the Placer County Wildlife Habitat Relationships System with Other California Vegetation Classification Systems.

Table 3. Noxious Weeds and Other Invasive Non-native Plants Known to Occur in Placer County.

Table 4. Working List of Covered Plant and Animal Species in the Phase I NCCP/HCP Planning Area of Placer County.

Table 5. Extent, Percent Private, and Elevation Range in Large-Patch Ecosystems in the Phase I NCCP/HCP Planning Area of Placer County.

Table 6. Extent, Percent Private, and Elevation Range of Small-Patch Ecosystems in the Phase I NCCP/HCP Planning Area of Placer County.

**List of Preparers 259**

**Figures and Appendices**

*Figures*

---

Figure 1. Placer County Phase I NCCP/HCP Planning Area.

Figure 2. NCCP/HCP Special-Status Plants in Large-Patch Ecosystems in the Phase I NCCP/HCP Planning Area of Placer County.

Figure 3. Total Vertebrates in Large-Patch Ecosystems in the Phase I NCCP/HCP Planning Area of Placer County.

Figure 4. Total Breeding Vertebrates in Large-Patch Ecosystems in the Phase I NCCP/HCP Planning Area of Placer County.

Figure 5. NCCP/HCP Special-Status Animals in Large-Patch Ecosystems in the Phase I NCCP/HCP Planning Area of Placer County.



Figure 6. Aquatic Ecosystems

Figure 7. Barren: Rocks, Cliffs, and Disturbed Areas

Figure 8. Annual Grassland

Figure 9. Wetlands

Figure 10. Vernal Pools

Figure 11. Foothill Chaparral

Figure 12. Foothill Riparian and Valley Oak Woodland

Figure 13. Foothill Hardwood Woodland and Oak Woodland-Savanna

Figure 14. Oak-Foothill Pine Woodland and Ponderosa Pine Forest

Figure 15. Agricultural Land

Figure 16. Urban

Figure 17. Serpentine Soils

Figure 18. Mehrten Formation Soils

Figure 19. Springs and Seeps

Figure 20. Stock Ponds and Landscape and Golf Course Ponds

Figure 21. Legenere

Figure 22. Dwarf Downingia

Figure 23. Bogg's Lake Hedge-hyssop

Figure 24. Ahart's Dwarf Rush

Figure 25. Red Bluff Dwarf Rush

Figure 26. Vernal Pool Fairy Shrimp

Figure 27. Vernal Pool Tadpole Shrimp

Figure 28. California Linderiella

Figure 29. Valley Elderberry Longhorn Beetle

Figure 30. Chinook Salmon (Fall/Winter Runs)

Figure 31. Central Valley Steelhead

Figure 32. Foothill Yellow-legged Frog

Figure 33. California Red-legged Frog

Figure 34. Western Spadefoot Toad

Figure 35. California Tiger Salamander

Figure 36. Giant Garter Snake

Figure 37. Western Pond Turtle

Figure 38. Northern Harrier

Figure 39. Bald Eagle (wintering)

Figure 40a. Swainson's Hawk (breeding)

Figure 40b. Swainson's Hawk (foraging)

Figure 41. Ferruginous Hawk (wintering)

Figure 42. Rough-legged Hawk (wintering)

Figure 43. Peregrine Falcon (wintering)

Figure 44. California Black Rail

Figure 45. Yellow-billed Cuckoo

Figure 46. Burrowing Owl

Figure 47. Bank Swallow (breeding)

Figure 48. Yellow Warbler (breeding)

Figure 49. Yellow-breasted Chat (breeding)

Figure 50. Grasshopper Sparrow (breeding)

Figure 51. Modesto Song Sparrow (breeding)

Figure 52a. Tricolored Blackbird (breeding)

Figure 52b. Tricolored Blackbird (foraging)

Figures XI-1 to XI-39. Vegetation Maps for Individual Watersheds in the Phase I NCCP/HCP Planning Area

## **Appendices**

---

Appendix I. Placer County Watershed Survey Protocols

Attachment I-1. Placer County Wildlife Habitat Relationship Classification Land Cover and Habitat Types in the Phase I NCCP/HCP Planning Area (see Table 1)

Attachment I-2. A Crosswalk for Comparing the Placer County Wildlife Habitat Relationships System with Other California Vegetation Classification Systems (see Table 2)

Attachment I-3. Phase I Planning Area Special-Status Animal Species (see Table 4)

Attachment I-4. Suitable Habitats for Special-Status Species in the Placer County Phase I Area (see Appendices IV and VII)

Attachment I-5. Noxious Weeds and Other Invasive Non-native Plants Known to Occur in Placer County (see Table 3)

Appendix II. Vascular Plant Species With Documented or Recorded Occurrence in Placer County.

Appendix III. Special-Status Plants With Known or Potential Occurrence in Placer County.

Appendix IV. Placer County Phase I Planning Area Special-Status Plant and Habitat Relationships Matrix.

Appendix V. Vertebrate Species With Known or Potential Occurrence in Placer County.

Appendix VI. Special-Status Animals With Known or Potential Occurrence in Placer County.

Appendix VII. Placer County Phase I Planning Area Wildlife and Habitat Relationships Matrix.

Appendix VIII. Compiled and Evaluated Data Themes for the Phase I NCCP/HCP Planning Area.

Appendix IX. Validation Process for Selected Data Themes used for the Phase I NCCP/HCP Planning Area.

Appendix X. Watershed Statistics

Appendix X-1. Acreages of Large-Patch Ecosystems in Watersheds of the Phase I NCCP/HCP Planning Area.

Appendix X-2. Small-Patch Ecosystems and Nonhabitat Themes in Watersheds of the Phase I NCCP/HCP Planning Area.

Appendices XI-3 to XL-40. Watershed Summaries.