

**SACRAMENTO MUNICIPAL UTILITY DISTRICT
UPPER AMERICAN RIVER PROJECT
(FERC NO. 2101)**

**VALLEY ELDERBERRY LONGHORN BEETLE
TECHNICAL REPORT**

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TABLE OF CONTENTS

Section & Description	Page
1.0 INTRODUCTION	1
2.0 BACKGROUND	2
2.1 Valley Elderberry Longhorn Beetle Study Plan	2
2.2 Agency Requested Information	3
3.0 METHODS	4
3.1 Elderberry Surveys.....	4
3.2 Incidental Observations	5
4.0 RESULTS	6
4.1 Elderberry Surveys.....	6
4.2 Incidental Observations	6
5.0 ANALYSIS.....	6
5.1 Known Threats to VELB Persistence	6
5.2 Operation and Maintenance of the UARP Transmission Line	7
6.0 LITERATURE CITED	8

LIST OF TABLES

Table No. & Description	Page
Table 2.1-1. Valley elderberry longhorn beetle study area for the Upper American River Project.....	3
Table 4.1-1. Observations of elderberry plants (<i>Sambucus sp.</i>) during 2002 and 2003 in association with Upper American River Project lands and facilities.....	6

LIST OF APPENIDICES

Appendix & Description

- APPENDIX A FIGURE 4.1-1. LOCATIONS OF ELDERBERRY ALONG THE
UPPER AMERICAN RIVER PROJECT TRANSMISSION LINE
- APPENDIX B REPRESENTATIVE PHOTOGRAPHS OF ELDERBERRY PLANTS
AS OBSERVED DURING HELICOPTER SURVEYS – MAY 29, 2002
[NOTE: ELDERBERRY PLANTS IN PHOTOGRAPHS HAVE
DISTINCTIVE LIGHT-YELLOW FLOWERS]
- APPENDIX C INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS
DURING UPPER AMERICAN RIVER PROJECT RELICENSING
STUDIES, 2002 AND 2003

LIST OF APPLICABLE STUDY PLANS

Description

- Valley Elderberry Longhorn Beetle Study Plan

6.11 Valley Elderberry Longhorn Beetle Study Plan

6.11.1 Pertinent Issue Questions

The valley elderberry longhorn beetle (VELB) study addresses Terrestrial Resource Issue Question:

32. What is the distribution of the valley elderberry longhorn beetle (VELB), what are the known factors (limiting and beneficial) affecting the VELB, and how are these factors influenced by Project operations?

6.11.2 Background

The VELB, a federally listed threatened species, ranged historically throughout the Central Valley, extending up river canyons in the Sierra Nevada foothills to an elevation of about 3,000 feet. VELB are obligate-users of elderberry (*Sambucus mexicana*) plants during their larval stage. Project construction (e.g., new developments), operation (e.g., altered flows), maintenance (e.g., road repair, transmission line maintenance), and associated activities (e.g., recreation) could have direct or indirect effects on elderberries that support VELB. The beetle's use of elderberries is not readily apparent; often the only exterior evidence is an exit hole created by the larvae just prior to pupation. The life cycle takes one or two years to complete with most of that time spent as larvae living within the stems of the plant. Adults generally emerge from late March through June, and adults are short-lived. Flow releases, facility operation/maintenance activities, and vegetation management programs have the potential to affect elderberry plants if present. The U.S. Fish and Wildlife Service (USFWS) has issued specific conservation guidelines for the VELB that include survey protocols and measures for avoiding, protecting, restoring, and monitoring impacted VELB habitat (USFWS 1999). These guidelines apply to elderberry plants with one or more stems measuring 1.0-inch or greater in diameter at ground level that may be directly or indirectly impacted by the construction or operation of a project. All elderberry plants with stems that meet the 1.0-inch-diameter threshold on, or adjacent to, a project site must be thoroughly searched for beetle exit holes and the number of stems tallied by diameter size class for determination of compensation ratios. Elderberry plants lacking stems 1.0-inch or greater in diameter at ground level are considered unsuitable for use by VELB and are not protected under the guidelines. Surveys are valid for a period of two years.

6.11.3 Study Objectives

The objectives of the VELB study are: 1) to determine the distribution of elderberry plants within the study area; 2) to assess the potential for the Project to affect these plants; and 3) apply USFWS protection and/or compensation protocols (USFWS 1999) where direct or indirect adverse impacts to elderberry plants may occur as a result of Project construction, operation, or maintenance.

6.11.4 Study Area and Sampling Sites

The VELB Study Area includes all areas where the Licensee has legal access (e.g., ownership/easement rights, public lands) on or adjacent to (i.e., within 100 feet as per USFWS Protocols for buffer zones) of Project features below 3,000-foot elevation that may be directly or indirectly affected by Project construction (e.g., facility development or expansion, road construction), operation (e.g., recreational developments), and maintenance (e.g., vegetation clearing). These Project features are shown in the table below. Stream reaches below Project facilities are not included in the study area because elderberry plants growing along foothill streams generally occur above the high water mark unlike willow and cottonwood (Personal Communication, R. Arnold, Entomologist, April 19, 2002). As a result, elderberry plants are not likely to occur in stream fluctuation zones and will not be affected by Project operations. However, it is understood that additional study areas (e.g., the developed and dispersed recreation areas being identified by the Recreation TWG and the Project roads being identified through the Project Sources of Sediment Study in coordination with the Recreation and Aquatic TWGs) will be added to this study area where appropriate.

<i>Project Feature</i>	<i>Approx. Elevations (feet)</i>
Jaybird Powerhouse and Switchyard	3,000
Union Valley-Camino T/L (areas below 3,000 ft. elev. from Jaybird Switchyard to Camino Switchyard)	1,800-3,000
Jaybird-White Rock T/L (from Jaybird Switchyard to White Rock Switchyard)	993-3,000
Camino Reservoir and Dam	2,915 –2,918
Camino Penstock (0.3 mile from Camino Tunnel to Camino Powerhouse)	1,950-2,800
Brush Creek Reservoir and Dam	2,915-2,923
Camino Powerhouse and Switchyard	1,950
Camino-Lake T/L right-of-way (from Camino Switchyard to Folsom Junction)	400-1,950
Camino-White Rock T/L (from Camino Switchyard to White Rock Switchyard)	993-1,950
Slab Creek Reservoir and Dam	1,850-1,870
Slab Creek Powerhouse and Switchyard	1620
White Rock Penstock (from White Rock Tunnel to White Rock Powerhouse)	993
White Rock Powerhouse and Switchyard	993
White Rock-Orangevale T/L (from White Rock Switchyard to Folsom Junction)	400-993
White Rock-Hedge T/L (from White Rock Switchyard to Folsom Junction)	400-993
Slab Creek 12 kV Tap Line (from Slab Creek PH to PG&E's 12 kV dist. line)	1,620-1,650
Slab Creek Reservoir Boat Launch (south side of reservoir near dam)	1,850

6.11.5 Information Needed From Other Studies

The locations of elderberry plants will be determined in-part by observations made by botanical field crews while performing rare plant surveys, riparian inventories, and invasive weed surveys. The location of recreation activities that may affect elderberries will be derived from the various recreation studies. Effects of transmission line right-of-way management and other land management activities on elderberries will be determined from the Project Lands Management Studies.

6.11.6 Study Methods and Schedule

Ground surveys for elderberry plants will be performed by field crews during the spring/summer 2002 flowering season for the species. Plants will be located by surveyors on foot, in cars, and by boat, as appropriate to the terrain and within reasonable limits of safety. The locations of all elderberry plants observed will be recorded using Global Positioning System (GPS) units where satellite reception is adequate, or plotted on aerial photos or field maps where reception is inadequate (e.g., deep canyons). For each elderberry location a qualitative assessment will be made of potential threats to the plant, distinguishing between Project- and non-Project influences.

This plan assumes that elderberries identified during this effort will be inspected for use by VELB prior to undertaking any Project-related actions (i.e., a "Project" as described in USFWS protocols) that may adversely affect the plant. As a result, inspections for the beetle and its exit holes will not be conducted during this initial survey effort. If, following analysis of the data (see Analysis section), a determination is made that ongoing Project operations and maintenance are likely to affect elderberries, or when a new Project-related action is proposed that may affect these plants, full USFWS protocols will be implemented. These protocols include: 1) a thorough inspection of the affected plants for beetle exit holes; 2) a complete count (tallied by diameter size class; Table 1 in USFWS protocols) of all stems one inch or greater in diameter at ground level on affected plants; and 3) noting if a plant lies in a riparian or non-riparian area. These data are used to determine the type and extent of compensation required including avoidance, protection, transplanting, and replacement planting of elderberry seedlings/cuttings and associated native riparian trees/shrubs.

6.11.7 Analysis

Data collected in the study and proposed plans for Project-related construction, operation and maintenance will be used to determine the potential for direct or indirect impacts on elderberry plants located during field surveys. As stated above, USFWS protocols for VELB inspections and protection/compensation measures will be implemented for all plants determined to be adversely affected by the Project.

6.11.8 Study Output

Study results will be presented to the Terrestrial Resources Technical Working Group (TWG) and Plenary Group toward the end of 2002. However, the ultimate study output will be a written report that includes the issues addressed, objectives, study area, methods, analysis, results (elderberry locations to be plotted on a GIS-layer for overlay on the UARP vegetation map), discussion, and conclusions. The reports will be prepared in a format that allows the information to be inserted directly into the Licensee-prepared Draft Environmental Assessment that will be submitted to FERC with the Licensee's application for a new license.

6.11.9 Preliminary Estimated Study Cost

SMUD's consultant estimates that this study will cost \$29,000 ± 20 percent.

6.11.10 TWG and Plenary Group Endorsement

Terrestrial TWG representatives from the following agencies/organizations approved this study plan on December 21, 2001: California Department of Fish and Game, Eldorado National Forest, California Sport Fishing Alliance, and SMUD. The Plenary Group approved this study plan on February 6, 2002. The participants at the meeting who said they could "live with" the study plan were California Department of Fish and Game, California Native Plant Society, California Outdoors, California Sportsfishing Protection Alliance, El Dorado County, El Dorado County Citizens for Water, Friends of El Dorado County, National Parks Service, Placer County Water Agency, Sacramento Municipal Utility District, State Water Resources Control Board, Taxpayers of El Dorado County, U.S. Bureau of Land Management and Eldorado National Forest. None of the participants at the meeting said they could not "live with" the study plan though PG&E abstained since this study plan does not apply to the Chili Bar Project.

This study plan was directed back to the TWG for re-evaluation in light of the inclusion of Chili Bar in other studies. At the April 16, 2002 meeting, the Terrestrial TWG determined that the VELB study plan was not a flow-related study, and was referred back to the Plenary Group for approval. On May 1, 2002 the following participants gave Plenary Group approval to the plan: USFS, BLM, USFWS, Taxpayers of El Dorado County, Friends of El Dorado County, Camp Lotus, El Dorado County Water Agency, El Dorado County, Placer County Water Agency, California Department of Fish and Game, California State Water Resources Control Board, Pacific Gas and Electric and Friends of the River. None of the participants at the meeting said they could not "live with" this study plan.

6.11.11 Literature Cited

SMUD (Sacramento Municipal Utility District). 2001. Initial Information Package for Relicensing of the Upper American River Project (FERC Project No. 2101). Sacramento. July 2001.

USFWS (U.S. Department of the Interior, Fish and Wildlife Service). 1999. Conservation guidelines for the valley elderberry longhorn beetle. U.S. Department of the Interior, Fish and Wildlife Service. Sacramento. July 9, 1999. 13 pp.

VALLEY ELDERBERRY LONGHORN BEETLE TECHNICAL REPORT

SUMMARY

This technical report provides the results of surveys for elderberry (*Sambucus* sp.), host plant for the valley elderberry longhorn beetle (VELB) and a federally-listed threatened species, near Upper American River Project (UARP) facilities below 3,000 feet in elevation. Elderberry plants were not inspected for VELB or its exit holes as part of this study. Such inspections would be performed prior to undertaking any UARP-related actions (i.e., a "Project" as described in U.S. Fish and Wildlife Service protocols) that may adversely affect elderberry plants. Surveys were performed by helicopter, car, and on foot as appropriate to the terrain being searched. Elderberry plants or clumps were found at eight sites, all located along the UARP transmission line corridor. No plants were located near powerhouses, dams, or other UARP facilities. All plants located within the transmission line corridor are on privately-owned land upon which SMUD holds a right-of-way easement for purposes of accessing and performing vegetation management and maintenance of transmission line equipment. Transmission line maintenance and vegetation management activities include system inspections, identification of potential hazard trees or other plants, and treatment of such vegetation in compliance with laws and regulations designed to ensure public safety and continued operation of the system.

1.0 INTRODUCTION

This technical report is one in a series of reports prepared by Devine Tarbell & Associates, Inc., (DTA) for the Sacramento Municipal Utility District (SMUD) as an appendix to SMUD's application to the Federal Energy Regulatory Commission (FERC) for a new license for the Upper American River Project (UARP or Project). The report addresses valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*), a federally-listed threatened species, within the study area and includes the following sections:

- **BACKGROUND** – Summarizes the applicable study plan approved by the UARP Relicensing Plenary Group; a brief description of the issue questions addressed, in part, by the study plan; the objectives of the study plan; the study area, and agency information requests. In addition, requests by resource agencies for additions to this technical report are described in this section.
- **METHODS** – A description of the methods used in the study, including a listing of study sites.
- **RESULTS** – A description of the most important data. Copious raw data, photographs, and drawings, are provided by request in a separate compact disc (CD) for additional analysis and review by interested parties.
- **ANALYSIS** – An analysis of the results, where appropriate.
- **LITERATURE CITED** – A listing of all literature cited in the report.

This technical report does not include a detailed description of the UARP Alternative Licensing Process (ALP) or of the UARP, which can be found in the following sections of SMUD's

application for a new license: The UARP Relicensing Process, Exhibit A (Project Description), Exhibit B (Project Operations), and Exhibit C (Construction).

Also, this technical report does not include a discussion of the effects of the UARP on VELB and related environmental resources, nor does the report include a discussion of appropriate protection, mitigation and enhancement (PM&E) measures. An impacts discussion regarding the UARP is included in the applicant-prepared preliminary draft environmental assessment (PDEA) document, which is part of SMUD's application for a new license. Development of resource measures will occur in settlement discussions, which will commence in 2004, and will be reported in the PDEA.

2.0 BACKGROUND

2.1 Valley Elderberry Longhorn Beetle Study Plan

On August 8, 1980, the U.S. Fish and Wildlife Service (USFWS) listed the VELB as a threatened species and established critical habitat designations for the species (45 FR 52803-52807). In response to the status and protections afforded VELB under the federal Endangered Species Act, the UARP Terrestrial Resources Technical Working Group (TWG) developed the UARP Valley Elderberry Longhorn Beetle Study Plan. This plan was approved initially by the TWG on December 21, 2001 and forwarded to the UARP Plenary Group for their review. On February 6, 2002, the UARP Plenary Group directed the plan back to the TWG for consideration of flow-related issues associated with Pacific Gas and Electric Company's Chili Bar Project. The TWG determined that the VELB study was not flow-related and therefore required no amendment. The study plan was referred back to the Plenary Group and was approved by the group on May 1, 2002. The study plan was designed to address, in part, the following issues questions developed by the Plenary Group:

Issue Question 32.	What is the distribution of the valley elderberry longhorn beetle (VELB), what are the known factors (limiting and beneficial affecting the VELB, and how are these factors influenced by Project operations?
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Based on a review and discussion of the initial issue question, the TWG developed the following study objectives:

- Determine the distribution of elderberry plants within the study area.
- Assess the potential for the UARP to affect these plants.
- Apply USFWS protection and/or compensation protocols (USFWS 1999) where direct or indirect adverse impacts to elderberry plants may occur as a result of UARP construction, operation, or maintenance.

The VELB Study Area included all areas where the SMUD had legal access (e.g., ownership/easement rights, public lands) on or adjacent to (i.e., within 100 feet as per USFWS Protocols for buffer zones) of UARP features below 3,000-foot elevation that could be directly or

indirectly affected by UARP construction (e.g., facility development or expansion, road construction), operation (e.g., recreational developments), and maintenance (e.g., vegetation clearing). These UARP features are shown in Table 2.1-1. The search area along the transmission line corridor included the area within approximately 200 feet of the transmission line centerline (i.e., 400-foot total width; this includes the 200-foot defined right-of-way [ROW] plus the 100-foot wide buffer on each side of the ROW). Stream reaches below UARP facilities were not included in the study area because elderberry plants growing along foothill streams generally occur above the high water mark unlike willow and cottonwood (Personal Communication, R. Arnold, Entomologist, April 19, 2002). As a result, elderberry plants that support VELB are not likely to occur in stream fluctuation zones and are not likely to be affected by UARP operations.

UARP Feature	Approx. Elevations (feet)
Jaybird Powerhouse and Switchyard	3,000
Union Valley-Camino T/L (areas below 3,000 ft. elev. from Jaybird Switchyard to Camino Switchyard)	1,800-3,000
Jaybird-White Rock T/L (from Jaybird Switchyard to White Rock Switchyard)	993-3,000
Camino Reservoir and Dam	2,915 –2,918
Camino Penstock (0.3 mile from Camino Tunnel to Camino Powerhouse)	1,950-2,800
Brush Creek Reservoir and Dam	2,915-2,923
Camino Powerhouse and Switchyard	1,950
Camino-Lake T/L right-of-way (from Camino Switchyard to Folsom Junction)	400-1,950
Camino-White Rock T/L (from Camino Switchyard to White Rock Switchyard)	993-1,950
Slab Creek Reservoir and Dam	1,850-1,870
Slab Creek Powerhouse and Switchyard	1620
White Rock Penstock (from White Rock Tunnel to White Rock Powerhouse)	993
White Rock Powerhouse and Switchyard	993
White Rock-Orangevale T/L (from White Rock Switchyard to Folsom Junction)	400-993
White Rock-Hedge T/L (from White Rock Switchyard to Folsom Junction)	400-993
Slab Creek 12 kV Tap Line (from Slab Creek PH to PG&E's 12 kV dist. line)	1,620-1,650
Slab Creek Reservoir Boat Launch (south side of reservoir near dam)	1,850

2.2 Agency Requested Information

In a letter dated December 17, 2003 to SMUD, the agencies identified, by study, information they believed they needed to begin settlement discussions, with the understanding that additional information might be requested. While the Valley Elderberry Longhorn Beetle Study was not specifically addressed, the agencies following general comment regarding terrestrial studies is pertinent:

- Shape files will need to include survey locations and positive sightings/responses.

Figure 4.1-1 (Appendix A) is a GIS map showing locations of elderberry plants within the UARP study area. Representative photos of elderberry plants are provided in Appendix B.

In a May 13, 2004 letter, the agencies stated in regards to the *Valley Elderberry Longhorn Technical Report* (February 2004) the following:

- The extent of elderberry shrubs suitable to support this species should be evaluated for Project-related activities, including dispersed camping and river recreation, below 3,000 feet elevation. An evaluation of elderberry presence at river access points should be conducted. SMUD should also consult with the US Fish and Wildlife Service to review this study report.

The distribution of elderberry plants located in the study area is presented in Section 4.0, Results and shown graphically on Figure 4.1-1 (Appendix A). An analysis of the potential effects of UARP operation and maintenance activities on elderberry plants and VELB is presented in Section 5.2. SMUD has provided this technical report to the USFWS for consideration in pending consultation under Section 7 of the federal Endangered Species Act.

The Terrestrial Resources TWG met on June 7, 2004 to consider “conclusions” relative to the VELB and to develop recommendations for consideration by the Settlement Negotiations Group. The TWG agreed on the following general conclusions:

1. The Issue Questions and Objectives stated in the VELB Study Plan are adequately addressed by the information provided in the *Valley Elderberry Longhorn Beetle Technical Report*.
2. Methods employed were adequate to address Issue Questions and Objectives.
3. Since the host plant for the VELB, elderberry (*Sambucus* sp.), is not necessarily a riparian species, surveys included areas around project facilities, within transmission line corridors and near stream reaches downstream of dams that have major access points on public lands, all below an elevation of 3,000 feet. This survey coverage is adequate to develop conclusions for the protection of VELB during the new license period.

3.0 METHODS

3.1 Elderberry Surveys

Qualified biologists performed surveys for elderberry (*Sambucus* spp.), the VELB host plant, at all UARP facilities below 3,000-ft elevation during the May – July flowering season for the species in both 2002 and 2003 [Note: The USFWS Conservation Guidelines for the VELB identify the 3,000-ft elevation contour as being the known elevation limit for VELB in watersheds on the east side of the Central Valley]. Surveys were conducted either on foot or by using a car, boat, or helicopter as appropriate to the terrain being searched. Helicopter surveys were limited to the UARP transmission line corridor and involved flying at 200-300 feet above ground and at the slowest speed possible while observers searched for flowering elderberry plants. The locations of all elderberry plants observed were recorded using Global Positioning System (GPS) units where satellite reception was adequate, or plotted on aerial photos or field

maps where reception was lacking (e.g., deep canyons, under forest canopy). For each elderberry location a qualitative assessment was made of potential threats to the plant, distinguishing between UARP- and non-UARP influences.

As directed by the approved study plan, stream reaches below UARP facilities were not included in the study area because elderberry plants growing along foothill streams generally occur above the high water mark and are unlikely to be affected by UARP-related changes in flows. However, in response to the May 13, 2004 letter from the agencies (see Section 2.2), a survey for elderberry plants was performed on June 5, 2004 at primary recreation access points along the South Fork American River below 3,000 feet as identified by the Recreation TWG. These locations were:

- Via Forebay Road, SFAR shoreline from Camino Powerhouse to the high water mark of Slab Creek Reservoir;
- Via Chute Camp Road, lower end of Slab Creek Reservoir and SFAR extending approximately 0.25-mile below Slab Creek Dam;
- Via Mosquito Road, shoreline of SFAR extending roughly 200 meters above and below bridge crossing of SFAR; and
- Via Mosquito Road, Meadow Lane, and Holland Drive, the shoreline of SFAR extending roughly 200 meters below White Rock Powerhouse.

Note: The study plan assumes that elderberries identified during this effort would be inspected for use by VELB prior to undertaking any UARP-related actions (i.e., a "Project" as described in USFWS protocols) that may adversely affect the plant. As a result, inspections for the beetle and its exit holes were not conducted during these relicensing surveys. SMUD expects to apply full USFWS protocols if and when a new UARP-related action is proposed that may affect these plants. These protocols include: 1) a thorough inspection of the affected plants for beetle exit holes; 2) a complete count (tallied by diameter size class; Table 1 in USFWS protocols) of all stems one inch or greater in diameter at ground level on affected plants; and 3) noting if a plant lies in a riparian or non-riparian area. These data will be used to determine the type and extent of compensation required including avoidance, protection, transplanting, and replacement planting of elderberry seedlings/cuttings and associated native riparian trees/shrubs.

3.2 Incidental Observations

Biologists engaged in these field surveys also recorded incidental observations of wildlife for purposes of generating a comprehensive species list for the UARP area. Data recorded for each observation generally included: species, date of observation, location, and any remarkable behavior or activity exhibited by the animals observed.

4.0 RESULTS

4.1 Elderberry Surveys

No federally-designated critical habitat for VELB occurs in the UARP vicinity and no elderberry plants were found adjacent to UARP facilities (i.e., dams, powerhouses, switchyards, appurtenant facilities) below 3,000 feet except along the UARP transmission line corridor. Elderberry shrubs or clumps were located at eight sites within the 400-foot wide search area (see description of Study Area in Section 2.1) along the transmission line corridor during 2002 and 2003 surveys (Table 4.1-1; Figure 4.1-1, Appendix A). Plants found at these locations were located directly beneath the transmission line or immediately adjacent to the line, and in one location (Point 007 on Figure 4.1-1) a large plant was growing entirely within the steel lattice cage of the support tower. No elderberry plants were located at any of the key recreation access points surveyed. Representative photographs of elderberry plants observed during helicopter surveys are provided in Appendix B.

4.2 Incidental Observations

Biologists recorded approximately 140 species of birds and mammals during UARP field studies including this VELB Study. These incidental observations are provided in Appendix C.

Observation Date	Survey Method	Location (Way Point # UTM, NAD 83)	Description
05-29-2002	Helicopter	WP 001 671222mE; 4285627mN	Estimate of 5 shrubs on west side of Green Valley Road crossing.
05-29-2002	Helicopter	WP 002 671268mE; 4285636mN	Plant found along Green Valley Rd. (1 shrub)
05-29-2002	Helicopter	WP 003 671940mE; 4285838mN	East of Green Valley Road (1 shrub)
05-29-2002	Helicopter	WP 004 684932mE; 4289324mN	West of Weber creek (5 shrubs)
06-14-2003	Ground	WP 005 689700mE; 4291800mN	Big Canyon E of Hwy 193 (numerous small shrubs)
05-29-2002	Helicopter	WP 006 695844mE; 4292351mN	N of Lava Cap Winery (numerous small shrubs)
05-29-2002	Helicopter	WP 007 695912mE; 4292411mN	N of Lava Cap Winery (numerous shrubs one within T-line cage)
06-16-2003	Ground	WP 008 702772mE; 4293252mN	SSW of Iowa Hill along the T-line in Brushy Canyon (numerous small shrubs)

5.0 ANALYSIS

5.1 Known Threats to VELB Persistence

Documented threats to persistence of the VELB include habitat loss and fragmentation, pesticide and herbicide use, and egg predation by the exotic Argentine ant (*Linepithema humile*) (USFWS

1984, Huxel 2000, Collinge *et al.* 2001). Riparian forests, the primary habitat of VELB, have been severely depleted within the species' range over the last two centuries as a result of expansive agricultural and urban development (Thompson 1977, Katibah 1984, USFWS 2003). There is no comparable information on loss of non-riparian VELB habitat such as elderberry savanna, mixed chaparral-woodlands, or grasslands adjacent to riparian habitat, which are more characteristic of elderberry locations along the UARP transmission line. However, urban and agricultural (e.g., vineyards, orchards) along the transmission line corridor have resulted in loss of native habitat that could have supported elderberry plants.

Barr (1991) found that small, isolated habitat remnants were less likely to be occupied by the VELB than larger patches suggesting that isolated elderberry shrubs do not typically provide long-term habitat for this species. Most of the elderberry plants located within the UARP transmission line corridor are single, isolated shrubs in upland habitats. As a result, occupancy of these shrubs by VELB, or at least long-term viability of any VELB subpopulations, is likely compromised by the species' limited dispersal capabilities (Barr 1991, Huxel 2000, Collinge *et al.* 2001, USFWS 2003).

Elderberry shrubs currently located within or adjacent to the right-of-way are all located on private lands upon which SMUD holds a right-of-way easement for purposes of accessing and performing both routine and emergency maintenance on the transmission line and management of the vegetation within the corridor in a manner that will ensure safe operation of the line. As a result, elderberry plants identified during this study may be at risk from both UARP (i.e., vegetation management activities) and non-UARP (i.e., Private Landowner) actions.

5.2 Operation and Maintenance of the UARP Transmission Line

Operation and maintenance of the UARP transmission system are performed according to standard industry procedures and in accordance with the requirements of State of California law for public health and safety, including California Public Utilities Commission (CPUC) General Order 95, Rule 35, Public Resources Code 4293 (Tree Trimming and Removal), Public Resources Code 4292, and CPUC General Order 112-E, to keep facilities clear of trees and other fire hazards. Other governmental requirements specify maintenance practices to prioritize, inspect, and maintain overhead electrical transmission lines placed under the control of the California Independent System Operator.

Vegetation management activity includes routine inspections of linear facilities and identification of potential hazards/trees that may violate conductor clearance laws and requirements. The degree of needed vegetation management often depends upon voltage and the height of the conductors. Management of such vegetation may include cutting, trimming, pruning, or clearing vegetation by manual or mechanical means as well as directed herbicide applications or stump treatments to comply with state laws and requirements, protect the integrity of SMUD's facilities, and/or maintain safe and reliable access to facilities for purposes of inspection and operation. In most situations, clearing of low-growing trees and shrubs such as elderberry is not needed to accomplish these safety and maintenance objectives.

Other routine maintenance activities associated with the UARP transmission line that have the potential to affect elderberry plants include, insulator replacement, cross arm replacement, and road maintenance (occasional blading of existing access roads). Emergency activities may be required in the event of disaster or "Acts of God" (50 CFR §402.05). Events such as fire, landslides and intense storms may disable electric transmission systems and appropriate emergency response actions must be taken to prevent or mitigate loss of, or damage to life, health, property, or essential public services.

6.0 LITERATURE CITED

Barr, C. B. 1991. The distribution, habitat, and status of the valley elderberry longhorn beetle *Desmocerus californicus dimorphus*. U.S. Fish and Wildlife Service, Sacramento, California.

Collinge, S. K., M. Holyoak, J. T. Marty, and C. B. Barr. 2001. Riparian habitat fragmentation and population persistence of the threatened Valley Elderberry Longhorn Beetle in central California. *Biological Conservation* 100:103-113.

Huxel, G. R. 2000. The effect of the Argentine ant on the threatened valley elderberry longhorn beetle. *Biological Invasions* 2:81-85.

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APPENDIX A

FIGURE 4.1-1. LOCATIONS OF ELDERBERRY ALONG THE UPPER AMERICAN RIVER PROJECT TRANSMISSION LINE

Upper American River Project



Figure 4.1-1
Locations of Elderberry
(sambucus sp.)
Below 3000ft Elevation
Along the UARP
Transmission Line,
2002-2003

 Valley Elderberry Location (*sambucus sp.*)

 Transmission Line

 Divided Highway

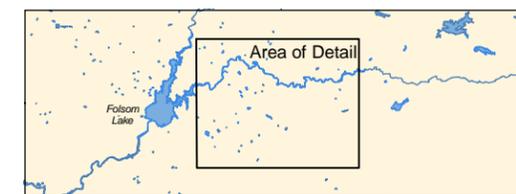
 Other Highway

 County Roads

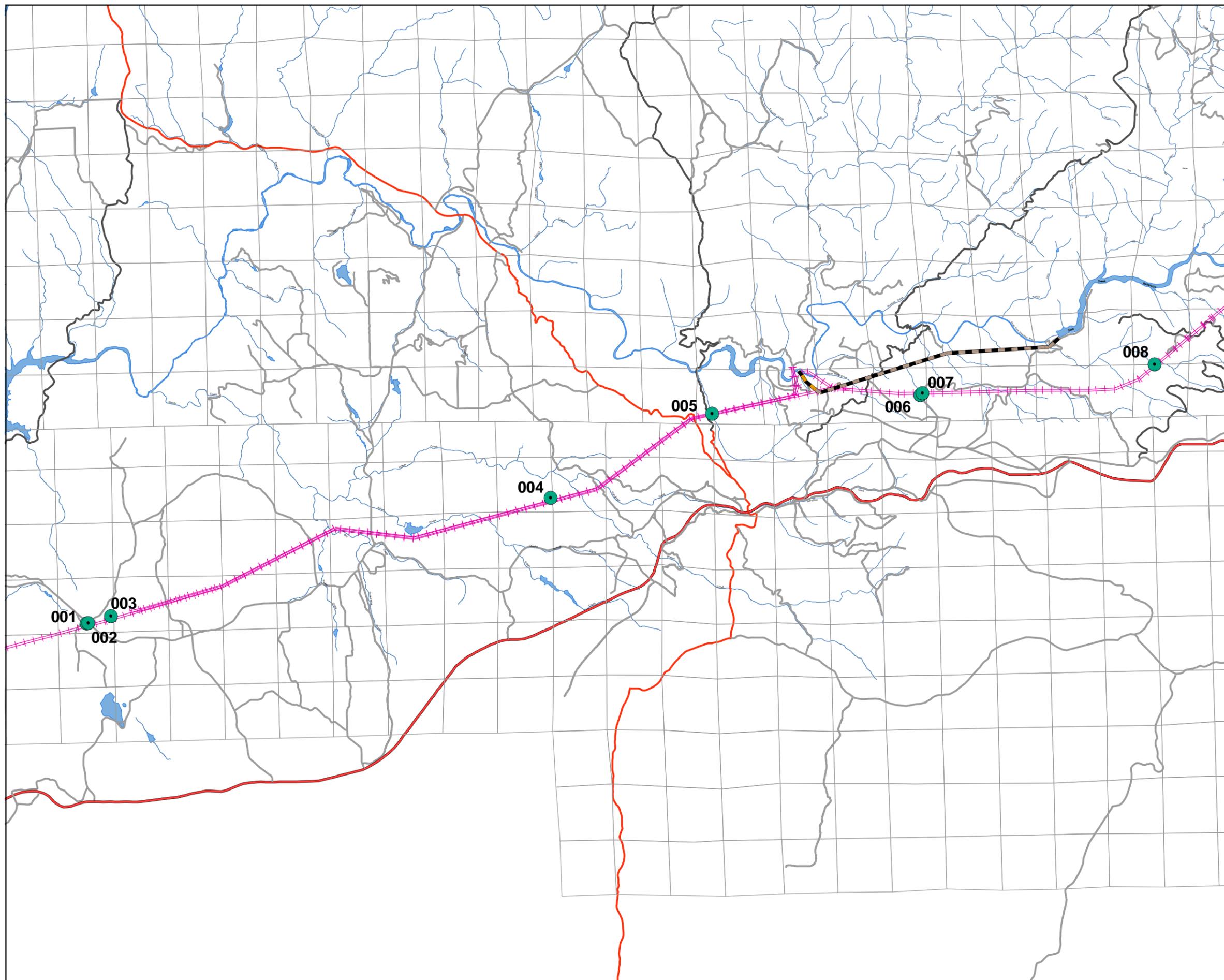
 Other Roads

 Penstock

 Tunnel



SCALE 1:110,000



APPENDIX B

REPRESENTATIVE PHOTOGRAPHS OF ELDERBERRY PLANTS OBSERVED DURING HELICOPTER SURVEYS MAY 29, 2002

Note: elderberry plants in photographs have distinctive light yellow flowers







APPENDIX C

INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UPPER AMERICAN RIVER PROJECT RELICENSING STUDIES, 2002 AND 2003

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
Various	Lower Transmission Line	Acorn woodpecker		
Various	Lower Transmission Line	American crow		
N/A	Silver Creek	American dipper		
N/A	Lower Transmission Line	American goldfinch		
Various	Lower Transmission Line	American kestrel		
04/09/03	Union Valley Reservoir	American pipit	1	Near Wolf Creek CG
05/14/02	Robbs Powerhouse	American robin		
05/15/02	Jaybird Springs Road	American robin		
06/10/02	Various	American robin		
06/11/02	Various	American robin		Partially albino with all white tail feathers at Wolf Ck CG
06/12/02	Various	American robin		
06/13/02	Various	American robin		
06/14/02	Jaybird Springs Road	American robin		
06/20/02	Union Valley Reservoir	American robin		
07/09/02	Union Valley Reservoir	American robin		
04/08/03	Ice House Road	American robin		
04/09/03	Union Valley Reservoir	American robin		
05/06/03	Peavine Ridge Road	American robin		
05/13/03	Iowa Hill	American robin		
05/09/03	Union Valley Reservoir	American white pelican	8	
05/13/03	Iowa Hill	Anna's hummingbird		
06/12/02	Union Valley Reservoir	Bald eagle	2	Adults perched on tree across from Fashoda Beach
06/12/02	Various	Bald eagle		
06/17/02	Union Valley Reservoir	Bald eagle	1	
06/26/02	Loon Lake	Bald eagle	1	Perched on pine east of boat ramp
08/28/02	Loon Lake	Bald eagle	1	Perched between Main and Auxillary dams
10/01/02	Union Valley Reservoir	Bald eagle	1	On south shore across from Sunset Boat ramp
10/01/02	Ice House Reservoir	Bald eagle	1	Soaring above Strawberry CG
10/28/02	Union Valley Reservoir	Bald eagle	2	Pair in Granlee's Point nest stand
11/14/02	Union Valley Reservoir	Bald eagle	2	
11/27/02	Ice House Reservoir	Bald eagle	3	2 adults and 1 juvenile at SFSC inlet
01/07/03	Union Valley Reservoir	Bald eagle	6	Adults and subadults

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
01/08/03	Union Valley Reservoir	Bald eagle	2	
01/09/03	Union Valley Reservoir	Bald eagle	1	Caught "muk-luk", Adult non-resident bird
02/04/03	Union Valley Reservoir	Bald eagle	Several	
02/06/03	Union Valley Reservoir	Bald eagle	2	
02/14/03	Union Valley Reservoir	Bald eagle	1	
03/27/03	Union Valley Reservoir	Bald eagle	Several	Copulation and territory defense
04/09/03	Union Valley Reservoir	Bald eagle	2	Adults incubating
04/22/03	Union Valley Reservoir	Bald eagle	1	Incubating
05/06/03	Union Valley Reservoir	Bald eagle	1	
05/07/03	Union Valley Reservoir	Bald eagle	1	On nest
05/07/03	Loon Lake	Bald eagle	3	1 ad., 2 juv. Near boat ramp
05/19/03	Ice House Reservoir	Bald eagle	1	Foraging
05/20/03	Loon Lake	Bald eagle	3	Ad. On possible nest tree, subadult in Pleasant area
06/17/03	Union Valley Reservoir	Bald eagle	1	
06/24/03	Slab Creek Reservoir	Bald eagle	1	
05/24/01	South Fork Silver Creek	Band-tailed pigeon	50-70	Observed during helicopter reconnaissance
06/26/02	Trail to Rubicon Reservoir	Band-tailed pigeon	20-30	
05/14/02	Gerle Creek Reservoir	Barn swallow	1	
05/14/02	Gerle Canal	Barn swallow		Nesting under bridge
05/14/02	Robbs Powerhouse	Barn swallow		
N/A	Buck Island Reservoir	Beaver		
10/21/02	Chili Bar Reach	Belted kingfisher	Several	
06/19/03	Loon Lake	Belted kingfisher	1	
07/28/03	Union Valley Reservoir	Belted kingfisher	4	
07/10/02	Jaybird Springs Road	Black bear	1	Approximately 1 year old near Jaybird Tunnel Adit
04/08/03	Gerle Creek Canal	Black bear		Tracks in snow appear to enter and exit canal
04/09/03	Union Valley Reservoir	Black bear		Tracks on shoreline near Camino Cove
N/A	Lower Transmission Line	Black phoebe		
05/15/02	Jaybird Springs Road	Black-headed grosbeak		
05/13/03	Iowa Hill	Black-headed grosbeak		
04/09/03	Peavine Ridge Road	Black-tailed hare	1	
05/15/02	Jaybird Springs Road	Black-throated gray warbler		

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
05/13/03	Iowa Hill	Black-throated gray warbler		
05/15/02	Jaybird Springs Road	Blue grouse	1	
07/09/02	Union Valley Reservoir	Blue grouse		
06/17/02	Union Valley Reservoir	Blue-winged teal	2	Male-female pair
05/06/03	Union Valley Reservoir	Blue-winged teal	2	Probable pair
07/17/03	Ice House Road	Bobcat	1	Crossing road near Robbs Resort
04/09/03	Union Valley Reservoir	Bonaparte's gull	3	1 in adult plumage
Various	Various	Brazilian free-tailed bat		See Technical Report on Bats
06/10/02	Various	Brewer's blackbird		
06/19/02	Gerle Creek Reservoir	Brewer's blackbird		
07/09/02	Union Valley Reservoir	Brewer's blackbird		
07/28/03	Union Valley Reservoir	Brewer's blackbird		
06/13/02	Various	Brown creeper		
06/20/02	Union Valley Reservoir	Brown creeper		
07/08/02	Various	Brown creeper		
07/09/02	Union Valley Reservoir	Brown creeper		
06/12/02	Various	Brown-headed cowbird	1	Wench Creek Campground
06/19/02	Gerle Creek Reservoir	Brown-headed cowbird	1	
06/03/03	Gerle Creek Reservoir	Brown-headed cowbird	2	
05/14/02	Gerle Creek Reservoir	Bufflehead	2	
05/29/02	Bufflehead Pond	Bufflehead	2	2 males
06/11/02	Bufflehead Pond	Bufflehead	1	1 male
06/13/02	Ice House Reservoir	Bufflehead	3	1 male, 2 females
06/18/02	Bufflehead Pond	Bufflehead	2	2 females
07/16/02	Bufflehead Pond	Bufflehead	2	Females
10/28/02	Gerle Creek Reservoir	Bufflehead	6	1 male, 5 females
11/04/02	Gerle Creek Reservoir	Bufflehead	4	2 males, 2 females
11/18/02	Gerle Creek Reservoir	Bufflehead	3	Females
02/04/03	Ice House Reservoir	Bufflehead	6	
02/04/03	Union Valley Reservoir	Bufflehead	10	5 in Jones Fk; 4 m. & 1 f. in Cam. Cove. In courtship flight
02/06/03	Union Valley Reservoir	Bufflehead	Several	
03/26/03	Gerle Creek Reservoir	Bufflehead	4	Courtship flight with 3 males

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
03/26/03	Union Valley Reservoir	Bufflehead	2	Male-female pair at Fashoda Beach
03/27/03	Union Valley Reservoir	Bufflehead	2	Male-female pair
04/08/03	Gerle Creek Reservoir	Bufflehead	20+	About equal numbers of both sexes and some pairs
04/08/03	Loon Lake	Bufflehead	Several	
04/09/03	Union Valley Reservoir	Bufflehead	13	
04/22/03	Gerle Creek Reservoir	Bufflehead	7	3 males, 4 females
05/06/03	Union Valley Reservoir	Bufflehead	6	4 males, 2 females
05/07/03	Wood Duck Pond	Bufflehead	1	Male
05/07/03	Gerle Creek Reservoir	Bufflehead	4	Pairs
05/20/03	Loon Lake	Bufflehead	9	4 males, 5 females
05/21/03	Loon Lake	Bufflehead	4	
05/21/03	Gerle Creek Reservoir	Bufflehead	4	2 pairs with males in post-breeding plumage
06/03/03	Bufflehead Pond	Bufflehead	2	Males
06/03/03	Gerle Creek Reservoir	Bufflehead	1	Male
10/07/03	Union Valley Reservoir	Bufflehead	2	
05/14/02	Robbs Powerhouse	California ground squirrel		
10/28/02	Ice House Road	California ground squirrel	1	Road kills
11/18/02	Ice House Road	California ground squirrel		
02/04/03	Ice House Reservoir	California gull	1	
Various	Various	California myotis		See Technical Report on Bats
Various	Lower Transmission Line	California quail		
Various	Various	California spotted owl		See Report on California spotted owl
05/14/02	Gerle Creek Reservoir	Canada goose	3	Including 1 gosling
05/14/02	Gerle Canal	Canada goose	1	Swimmin in canal. Tracks on levee.
05/29/02	Union Valley Reservoir	Canada goose	Approx. 60	Camino cove
06/11/02	Union Valley Reservoir	Canada goose	110-120	Grazing in shallow water at Camino Cove
06/11/02	Gerle Creek Reservoir	Canada goose		Scat along Gerle Canal
06/12/02	Union Valley Reservoir	Canada goose	65	Granlee's Point Cove
06/17/02	Union Valley Reservoir	Canada goose	320	Including 1 gosling
06/19/02	Gerle Creek Reservoir	Canada goose	3	2 adults with 1 gosling
07/09/02	Union Valley Reservoir	Canada goose	60-70	Adults feeding in meadow east of Camino Cove CG
03/26/03	Gerle Creek Reservoir	Canada goose	5	

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
03/27/03	Union Valley Reservoir	Canada goose	5	2 pairs and a single
04/08/03	Gerle Creek Reservoir	Canada goose	8	
04/08/03	Ice House Reservoir	Canada goose	1	
04/09/03	Union Valley Reservoir	Canada goose	22+/-	Scattered around north shore coves
04/22/03	Gerle Creek Reservoir	Canada goose	Several	Heard only
05/06/03	Union Valley Reservoir	Canada goose	62	Mostly pairs around Camino Cove
05/07/03	Gerle Canal	Canada goose	2	Pair
05/07/03	Loon Lake	Canada goose	2	
05/07/03	Ice House Reservoir	Canada goose	2	
05/20/03	Loon Lake	Canada goose	10	8 in Pleasant arm
05/21/03	Loon Lake	Canada goose	2	
05/21/03	Gerle Creek Reservoir	Canada goose	4	2 pair
06/17/03	Union Valley Reservoir	Canada goose	303	
06/17/03	Ice House Reservoir	Canada goose	36	Including 5 goslings
06/19/03	Loon Lake	Canada goose	53	Including 1 gosling
06/19/03	Gerle Creek Reservoir	Canada goose	4	Adults being fed by campers
07/28/03	Union Valley Reservoir	Canada goose	80	
07/28/03	Ice House Reservoir	Canada goose	24	Including 4 YOY
07/29/03	Loon Lake	Canada goose	26	
10/07/03	Union Valley Reservoir	Canada goose	40	One with black on white neck collar #2/38
05/15/02	Jaybird Springs Road	Canyon wren	1	
05/14/02	Robbs Powerhouse	Cassins finch	4	Non-breeding plumage
09/23/02	Ice House Road	Chipmunk sp		Road kills
11/18/02	Ice House Road	Chipmunk sp		
06/20/02	Union Valley Reservoir	Chipping sparrow		
07/08/02	Various	Chipping sparrow		
07/09/02	Union Valley Reservoir	Chipping sparrow		
05/06/03	Peavine Ridge Road	Chipping sparrow		
07/28/03	Union Valley Reservoir	Chipping sparrow		
06/17/03	Union Valley Reservoir	Cinnamon teal	2	Pair in cove east of Camino Cove
05/15/02	Jaybird Springs Road	Cliff swallow		
05/15/02	White Rock Powerhouse	Cliff swallow		Nesting beneath crane facility

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
07/10/02	Jaybird Springs Road	Common bushtit		
02/04/03	Ice House Reservoir	Common goldeneye	1	
03/26/03	Gerle Creek Reservoir	Common goldeneye	3	Females
12/30/02	Union Valley Reservoir	Common loon	1	
05/07/03	Loon Lake	Common loon	1	
05/07/03	Ice House Reservoir	Common loon	1	
05/14/02	Gerle Creek Reservoir	Common merganser	30-50	
06/11/02	Union Valley Reservoir	Common merganser	10	1 female with 9 YOY
06/13/02	Ice House Reservoir	Common merganser	2	2 females near dam
06/17/02	Union Valley Reservoir	Common merganser	9	Including 8 YOY
06/19/02	Gerle Creek Reservoir	Common merganser	10	1 female with 9 YOY
06/26/02	Rubicon Reservoir	Common merganser		
09/16/02	Gerle Creek Reservoir	Common merganser	6	
09/23/02	Gerle Creek Reservoir	Common merganser	2	
10/01/02	Union Valley Reservoir	Common merganser	4	
10/01/02	Loon Lake	Common merganser	4	
10/28/02	Loon Lake	Common merganser	2	Male-female pair
11/04/02	Loon Lake	Common merganser	2	Male-female pair
11/11/02	Loon Lake	Common merganser	2	Males
11/11/02	Gerle Creek Reservoir	Common merganser	2	Males
11/18/02	Gerle Creek Reservoir	Common merganser	1	Female perched on log boom then flew to north end
11/18/02	Ice House Reservoir	Common merganser	4	Males
12/30/02	Gerle Creek Reservoir	Common merganser	1	Male
12/30/02	Union Valley Reservoir	Common merganser	1	Female
02/04/03	Ice House Reservoir	Common merganser	1	Male
02/04/03	Union Valley Reservoir	Common merganser	5	Females
02/06/03	Union Valley Reservoir	Common merganser	Several	
03/26/03	Gerle Creek Reservoir	Common merganser	2	Females
04/08/03	Loon Lake	Common merganser	2	
04/08/03	Ice House Reservoir	Common merganser	2	
04/09/03	Union Valley Reservoir	Common merganser	8	Scattered around north shore coves
05/06/03	Union Valley Reservoir	Common merganser	4	

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
05/07/03	Loon Lake	Common merganser	3	
05/20/03	Loon Lake	Common merganser	10	5 males, 5 females
05/21/03	Loon Lake	Common merganser	2	
06/03/03	Gerle Creek Reservoir	Common merganser	1	Female
06/17/03	Union Valley Reservoir	Common merganser	2	Females
06/17/03	Ice House Reservoir	Common merganser	11	
06/19/03	Loon Lake	Common merganser	11	
07/17/03	Gerle Creek Canal	Common merganser	7	1 female with 6 YOY about 300 yards n. of Forebay
07/28/03	Union Valley Reservoir	Common merganser	16	Including 10 YOY
07/28/03	Ice House Reservoir	Common merganser	19	Including 15 YOY
07/29/03	Loon Lake	Common merganser	52	Including 31-32 YOY
10/07/03	Union Valley Reservoir	Common merganser	8	
11/25/03	Union Valley Reservoir	Common merganser	3	
N/A	Rubicon Reservoir	Common nighthawk		
06/03/03	Loon Lake	Common poorwill	1	
05/14/02	Ice House Road	Common raven		
06/10/02	Various	Common raven		
06/11/02	Various	Common raven		
06/12/02	Various	Common raven		
06/13/02	Various	Common raven		
07/08/02	Various	Common raven		
07/09/02	Union Valley Reservoir	Common raven		
04/08/03	Ice House Road	Common raven		
04/09/03	Union Valley Reservoir	Common raven		
05/06/03	Peavine Ridge Road	Common raven		
05/13/03	Iowa Hill	Common raven		
07/28/03	Union Valley Reservoir	Common raven		
10/22/03	Iowa Hill	Common raven	20	
09/23/02	Gerle Creek Reservoir	Cooper's hawk	1	
09/30/02	Gerle Creek Reservoir	Cooper's hawk	1	
07/09/02	Union Valley Reservoir	Coyote		
07/10/02	Union Valley Reservoir	Coyote	1	

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
10/07/02	Union Valley Reservoir	Coyote	1	
11/11/02	Ice House Road	Coyote		Tracks
05/15/02	Jaybird Springs Road	Dark-eyed junco		
06/10/02	Various	Dark-eyed junco		
06/12/02	Various	Dark-eyed junco		
06/13/02	Various	Dark-eyed junco		
06/20/02	Union Valley Reservoir	Dark-eyed junco		
07/08/02	Various	Dark-eyed junco		
07/09/02	Union Valley Reservoir	Dark-eyed junco		Nest with young in meadow east of Camino Cove CG
07/10/02	Jaybird Springs Road	Dark-eyed junco		
05/06/03	Peavine Ridge Road	Dark-eyed junco		
05/13/03	Iowa Hill	Dark-eyed junco		
07/28/03	Union Valley Reservoir	Dark-eyed junco		
10/22/03	Iowa Hill	Dark-eyed junco		
10/01/02	Loon Lake	Double-crested cormorant	1	
06/20/02	Union Valley Reservoir	Douglas squirrel		
07/08/02	Various	Douglas squirrel		
07/09/02	Union Valley Reservoir	Douglas squirrel		
09/03/02	Ice House Road	Douglas squirrel		Road kills
09/09/02	Ice House Road	Douglas squirrel		Road kills
10/14/02	Ice House Road	Douglas squirrel	2	Road kills
10/28/02	Ice House Road	Douglas squirrel	2	Road kills
11/18/02	Ice House Road	Douglas squirrel		
04/08/03	Ice House Road	Douglas squirrel	1	
11/25/03	Union Valley Reservoir	Douglas squirrel		
11/18/02	Loon Lake	Duck sp.	12	Too distant to identify but probably Common mergansers
02/06/03	Union Valley Reservoir	Eared grebe	1	
04/09/03	Union Valley Reservoir	Eared grebe	3	Non-breeding plumage
10/07/03	Union Valley Reservoir	Eared grebe	1	
Various	Lower Transmission Line	European starling		
Various	Union Valley Reservoir	Flammulated owl		
06/10/02	Various	Fox sparrow		

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
07/09/02	Union Valley Reservoir	Fox sparrow		
Various	Various	Fringed myotis		See Technical Report on Bats
N/A	Ice House Road	Golden eagle		
06/12/02	Various	Golden-crowned kinglet		
06/13/02	Various	Golden-crowned kinglet		
06/14/02	Jaybird Springs Road	Golden-crowned kinglet		
Various	Ice House Road	Golden-mantled ground squirrel		
06/14/02	Jaybird Springs Road	Gray fox		
05/24/01	South Fork Silver Creek	Great blue heron	1	Observed during helicopter reconnaissance
06/17/02	Union Valley Reservoir	Great blue heron	1	Camino cove
10/01/02	Union Valley Reservoir	Great blue heron	1	
10/21/02	Chili Bar Reach	Great blue heron	Several	
06/17/03	Union Valley Reservoir	Great blue heron	1	
07/28/03	Union Valley Reservoir	Great blue heron	4	
07/28/03	Ice House Reservoir	Great blue heron	3	On south shore
07/29/03	Loon Lake	Great blue heron	1	Pleasant area
11/25/03	Union Valley Reservoir	Great blue heron	1	
Various	Jaybird Springs Road	Great horned owl		
09/30/02	Loon Lake	Grebe sp.	1	Probably eared grebe
10/01/02	Union Valley Reservoir	Green heron	1	
06/12/02	Road 12N0XA	Hairy woodpecker		
07/09/02	Union Valley Reservoir	Hairy woodpecker		
06/10/02	Various	Hammond's flycatcher		
N/A	Lower Transmission Line	Hermit thrush		
06/20/02	Union Valley Reservoir	Hermit warbler		
Various	Lower Transmission Line	House finch		
05/06/03	Union Valley Reservoir	Killdeer		
06/19/03	Loon Lake	Killdeer	1	
05/14/02	Gerle Creek Reservoir	Kinglet sp.		
06/11/02	Various	Kinglet sp.		
06/12/02	Various	Kinglet sp.		
06/20/02	Union Valley Reservoir	Kinglet sp.		

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
07/08/02	Various	Kinglet sp.		
07/09/02	Union Valley Reservoir	Kinglet sp.		
04/09/03	Union Valley Reservoir	Lesser scaup	1	Jones Fork arm
06/12/02	Various	Lewis' woodpecker		
06/19/02	Gerle Creek Reservoir	MacGillvray's warbler		
06/20/02	Union Valley Reservoir	MacGillvray's warbler		
06/11/02	Union Valley Reservoir	Mallard		Several in eclipse plumage
06/17/02	Union Valley Reservoir	Mallard	25	Including 18 YOY
06/18/02	Bufflehead Pond	Mallard	1	female
09/09/02	Bufflehead Pond	Mallard	2	1 male - 1 female
10/07/02	Union Valley Reservoir	Mallard	1	Camino cove
03/27/03	Union Valley Reservoir	Mallard	13	Flying low over water
04/08/03	Ice House Reservoir	Mallard	1	Male
04/09/03	Union Valley Reservoir	Mallard	36	Many pairs and at least one flock of 27 flying
04/22/03	Wood Duck Pond	Mallard	6	3 pairs
05/06/03	Union Valley Reservoir	Mallard	23	
05/20/03	Loon Lake	Mallard	2	Pair
05/21/03	Loon Lake	Mallard	2	
06/17/03	Union Valley Reservoir	Mallard	46	Including 25 YOY
06/17/03	Ice House Reservoir	Mallard	3	
07/28/03	Union Valley Reservoir	Mallard	39	Including 15 YOY
10/07/03	Union Valley Reservoir	Mallard	7	
06/13/02	Various	Mountain bluebird		
05/14/02	Gerle Creek Reservoir	Mountain chickadee		
06/11/02	Various	Mountain chickadee		
06/12/02	Various	Mountain chickadee		
06/20/02	Union Valley Reservoir	Mountain chickadee		
07/08/02	Various	Mountain chickadee		
N/A	Union Valley Reservoir	Mountain lion		Tracks
06/10/02	Various	Mountain quail		
06/11/02	Various	Mountain quail		
06/12/02	Road 12N0XA	Mountain quail		

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
06/13/02	Various	Mountain quail		
10/22/03	Iowa Hill	Mountain quail		
06/13/02	Various	Mourning dove		
06/14/02	Jaybird Springs Road	Mourning dove		
05/06/03	Peavine Ridge Road	Mourning dove		
09/09/02	Ice House Road	Mule deer		Adult crossed road 0.2 mi east of Loon Lake dump station
11/25/02	Highway 50	Mule deer	6	Road kills at lower elevations including many bucks
03/26/03	Peavine Ridge Road	Mule deer	2	Young deer
04/09/03	Ice House Road	Mule deer	4	Cleveland Corral
05/06/03	Peavine Ridge Road	Mule deer	5	At least 1 small buck
07/17/03	Ice House Road	Mule deer	1	Road kill. Small buck with 2-in antlers in velvet
10/22/03	Iowa Hill	Mule deer	1	3-point buck near edge of clear-cut on NE side of area
06/13/02	Various	Nashville warbler		
06/14/02	Various	Nashville warbler		
05/13/03	Iowa Hill	Nashville warbler		
06/10/02	Various	Northern flicker		
06/12/02	Road 12N0XA	Northern flicker		
06/13/02	Various	Northern flicker		
06/20/02	Union Valley Reservoir	Northern flicker		
07/09/02	Union Valley Reservoir	Northern flicker		
05/06/03	Peavine Ridge Road	Northern flicker		
05/13/03	Iowa Hill	Northern flicker		
10/22/03	Iowa Hill	Northern flicker		
07/15/03	Jaybird Springs Road	Northern goshawk	1	Responded to broadcast call
N/A	Lower Transmission Line	Northern harrier		
N/A	Lower Transmission Line	Northern mockingbird		
N/A	Lower Transmission Line	Northern pocket gopher		
N/A	Lower Transmission Line	Oak titmouse		
05/14/02	Gerle Creek Reservoir	Olive-sided flycatcher	1	
06/11/02	Various	Orange-crowned warbler		
06/20/02	Union Valley Reservoir	Orange-crowned warbler		
05/14/02	Jones Fork Powerhouse	Osprey		Active nest about 150-200 m east of powerhouse

APPENDIX C. INCIDENTAL OBSERVATIONS OF 140 +/- BIRDS AND MAMMALS DURING UARP RELICENSING STUDIES, 2002-2003

Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
06/12/02	Jones Fork Powerhouse	Osprey		Incubating
06/12/02	Road 12N0XA	Osprey	2	Nests near Ice House Road and near end of road
06/13/02	Ice House Reservoir	Osprey	4	Active nest at southeast arm of reservoir
06/17/02	Union Valley Reservoir	Osprey	2	Nest located between Jones Fk and Lone Rock CG
06/17/02	Union Valley Reservoir	Osprey	2	Nest in Dam Grove
06/26/02	Loon Lake	Osprey	1	
07/06/02	Loon Lake	Osprey	2	Near Pleasant CG
07/15/02	Loon Lake	Osprey	1	Foraging near PH and flying westward with fish
03/26/03	Big Hill	Osprey	1	Flying over big hill to the northeast
04/08/03	Ice House Reservoir	Osprey	2	
04/09/03	Union Valley Reservoir	Osprey	3	Pair in Jones Fork arm and 1 on Ice House Rd. nest
05/06/03	Union Valley Reservoir	Osprey	4	Nests at various locations
05/07/03	Ice House Reservoir	Osprey	1	Foraging
05/07/03	Ice House Road	Osprey	2	Adding sticks to nest near road
05/20/03	Loon Lake	Osprey	1	Foraging
05/21/03	Gerle Creek Reservoir	Osprey	1	Flying high overhead
06/03/03	Loon Lake	Osprey	1	Carrying fish westward near aux. Boat ramp
06/05/03	Union Valley Reservoir	Osprey	1	Incubating on nest along south shore in burn area
06/17/03	Union Valley Reservoir	Osprey	2	
06/17/03	Ice House Reservoir	Osprey	2	Incubating
06/19/03	Loon Lake	Osprey	1	
06/24/03	Slab Creek Reservoir	Osprey	1	
07/14/03	Union Valley Reservoir	Osprey	Several	Nests active
07/17/03	Union Valley Reservoir	Osprey	3	Ad. Feeding 2 young on south side of reservoir
07/28/03	Union Valley Reservoir	Osprey	Several	Nestlings in at least 2 nests
07/28/03	Ice House Reservoir	Osprey	2	On nest
07/29/03	Loon Lake	Osprey		
06/14/02	Jaybird Springs Road	Pacific-slope flycatcher		
07/10/02	Jaybird Springs Road	Pacific-slope flycatcher		
04/09/03	Union Valley Reservoir	Pied-billed grebe	2	South shore near burn area and Sunset beach
10/07/03	Union Valley Reservoir	Pied-billed grebe	1	
06/11/02	Gerle Dam Access Road	Pileated woodpecker	1	Responded in agitated manner to goshawk call

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Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
07/10/02	Jaybird Springs Road	Pileated woodpecker		
10/28/02	Union Valley Reservoir	Pileated woodpecker	1	
12/30/02	Ice House Road	Pileated woodpecker	1	Near Big Creek CG
06/04/03	Jaybird Springs Road	Pileated woodpecker	1	
06/18/02	Wentworth Springs	Pine grosbeak	Several	
05/15/02	White Rock Powerhouse	Pygmy owl		Heard only
07/28/03	Union Valley Reservoir	Raccoon		Tracks
N/A	Union Valley Reservoir	Red crossbill		
05/14/02	Gerle Creek Reservoir	Red-breasted nuthatch		
06/11/02	Various	Red-breasted nuthatch		
06/20/02	Union Valley Reservoir	Red-breasted nuthatch		
07/09/02	Union Valley Reservoir	Red-breasted nuthatch		
04/08/03	Ice House Road	Red-breasted nuthatch		
04/09/03	Union Valley Reservoir	Red-breasted nuthatch	1	
11/25/03	Union Valley Reservoir	Red-breasted nuthatch		
N/A	Ice House Road	Red-breasted sapsucker		
N/A	Lower Transmission Line	Red-shouldered hawk		
06/11/02	Gerle Canal	Red-tailed hawk	2	Soaring above canal
06/17/02	Union Valley Reservoir	Red-tailed hawk	1	
07/09/02	Union Valley Reservoir	Red-tailed hawk		
12/30/02	Union Valley Reservoir	Red-tailed hawk	1	Perched on dam
02/14/03	Union Valley Reservoir	Red-tailed hawk	1	
04/09/03	Union Valley Reservoir	Red-tailed hawk	1	Near Robbs Peak PH
05/06/03	Union Valley Reservoir	Red-tailed hawk	4	Juvenile near osprey nest in Dam Grove; 1 ad. In Camino
07/28/03	Union Valley Reservoir	Red-tailed hawk		
07/09/02	Union Valley Reservoir	Red-winged blackbird		
10/28/02	Loon Lake	Ringed-bill gull	1	
05/14/02	Gerle Creek Reservoir	Ring-necked duck	2	
11/11/02	Highway 50	Ringtail	1	Road kill on Hwy 50 1.7 miles west of Fresh Pond
N/A	South Fork American River	River otter		
05/15/02	Camino Powerhouse	Rough-winged swallow		
N/A	Union Valley Reservoir	Ruby-crowned kinglet		

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Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
06/11/02	Gerle Creek Reservoir	Ruddy duck	2	Male-female pair
10/14/02	Gerle Creek Reservoir	Ruddy duck	1	female
06/12/02	Various	Scrub jay		Ice House Road near Hwy 50
06/11/02	Gerle Canal	Sharp-shinned hawk	2	Soaring above canal
02/04/03	Ice House Road	Snowshoe hare	1	Near cleveland corral
03/27/03	Union Valley Reservoir	Snowshoe hare	1	On road between Camino Cove and Wolf Creek CG
06/05/03	Union Valley Reservoir	Snowshoe hare	1	In transitional pelage - brown w/white feet and tail
06/13/02	Silver Creek	Song sparrow	Several	Sparrows in streamside meadow below Ice House Dam
06/20/02	Union Valley Reservoir	Song sparrow		
06/19/02	Gerle Creek Reservoir	Spotted sandpiper	1	
06/17/03	Union Valley Reservoir	Spotted sandpiper		
07/28/03	Ice House Reservoir	Spotted sandpiper	2	In southeast arm
07/29/03	Loon Lake	Spotted sandpiper	4	
05/15/02	Jaybird Springs Road	Spotted towhee		
05/14/02	Gerle Creek Reservoir	Steller's jay		
06/10/02	Various	Steller's jay		
06/11/02	Various	Steller's jay		
06/12/02	Various	Steller's jay		
06/13/02	Various	Steller's jay		
06/20/02	Union Valley Reservoir	Steller's jay		
07/08/02	Various	Steller's jay		
07/09/02	Union Valley Reservoir	Steller's jay		
04/08/03	Ice House Road	Steller's jay		
05/06/03	Peavine Ridge Road	Steller's jay		
05/13/03	Iowa Hill	Steller's jay		
07/28/03	Union Valley Reservoir	Steller's jay		
N/A	Lower Transmission Line	Striped skunk		
06/12/02	Road 12N0XA	Townsend's solitaire		
11/18/02	Ice House Road	Townsend's solitaire	1	On Loon Lake Road
02/04/03	Union Valley Reservoir	Tundra swans	3	Flying over reservoir
06/10/02	Various	Turkey vulture		
06/11/02	Various	Turkey vulture		

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Date (YR-MO-DY)	General Location	Species	Number Seen		Comments
06/12/02	Various	Turkey vulture			
05/06/03	Peavine Ridge Road	Turkey vulture			
N/A	White Rock Powerhouse	Violet-green swallow			
11/18/02	Ice House Road	Western bluebird	10		On Loon Lake Road
07/08/02	Various	Western gray squirrel			
09/03/02	Ice House Road	Western gray squirrel			Road kills
09/23/02	Ice House Road	Western gray squirrel			Road kills
10/28/02	Ice House Road	Western gray squirrel	1		Road kills
05/13/03	Iowa Hill	Western gray squirrel			
11/25/03	Union Valley Reservoir	Western gray squirrel			
03/06/03	Union Valley Reservoir	Western grebe	2		
05/15/02	White Rock Powerhouse	Western kingbird			
Various	Lower Transmission Line	Western meadowlark			
Various	Various	Western screech owl			
05/15/02	Jaybird Springs Road	Western tanager			
06/11/02	Various	Western tanager			
06/20/02	Union Valley Reservoir	Western tanager			
07/08/02	Various	Western tanager			
05/13/03	Iowa Hill	Western tanager			
06/19/03	Bufflehead Pond	Western tanager	1		
05/13/03	Iowa Hill	White-breasted nuthatch			
06/19/03	Bufflehead Pond	White-breasted nuthatch	1		
Various	Loon Lake	White-crowned sparrow			
06/11/02	Various	White-headed woodpecker			
06/12/02	Wench Creek Campground	White-headed woodpecker			Nesting in Campground sign
07/08/02	Various	White-headed woodpecker			
Various	Lower Transmission Line	White-tailed kite			
07/09/02	Union Valley Reservoir	Wild turkey			
06/13/02	Various	Williamson's sapsucker			
06/13/02	Various	Wilson's warbler			
06/20/02	Union Valley Reservoir	Wilson's warbler			
11/25/02	Union Valley Tunnel Adit	Winter wren	1		

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Date (YR-MO-DY)	General Location	Species	Number Seen	Comments
04/22/03	Wood Duck Pond	Wood duck	2	Male-female pair
05/07/03	Wood Duck Pond	Wood duck	2	Male-female pair
05/21/03	Wood Duck Pond	Wood duck	2	Pair
06/05/03	Junction Reservoir	Wood duck	1	Male in non-breeding plumage
07/09/02	Union Valley Reservoir	Yellow-headed blackbird		
05/14/02	Gerle Creek Reservoir	Yellow-rumped warbler		
05/15/02	Jaybird Springs Road	Yellow-rumped warbler		
06/12/02	Various	Yellow-rumped warbler		
06/13/02	Various	Yellow-rumped warbler		
06/20/02	Union Valley Reservoir	Yellow-rumped warbler		
07/09/02	Union Valley Reservoir	Yellow-rumped warbler		
05/06/03	Peavine Ridge Road	Yellow-rumped warbler		
Various	Various	Yuma myotis		