Placer County Water Agency
Middle Fork American River Project
(FERC No. 2079)

FINAL

AQ 12 – SPECIAL-STATUS AMPHIBIAN AND AQUATIC REPTILE SUPPLEMENTAL REPORT

CALIFORNIA RED-LEGGED FROG PROTOCOL-LEVEL SURVEY REPORT

Placer County Water Agency
P.O. Box 6570
Auburn, CA 95604

February 2010

Table of Contents

Page

List of Tables

List of Maps

List of Appendices

1.0 INTRODUCTION

This report provides the results of California red-legged frog (CRLF) (*Rana draytonii*) protocol-level presence/absence surveys conducted for the relicensing of Placer County Water Agency's (PCWA's) Middle Fork American River Project (MFP or Project). Specifically, this report provides a detailed description of the methods and results of U.S. Fish and Wildlife Service (USFWS) protocol-level presence/absence surveys completed in 2009.

In 2008, a protocol-level site assessment was prepared in accordance with the USFWS *Revised Guidance on Site Assessments and Field Surveys for California Red-legged Frogs* (Guidance) (USFWS 2005) and with the study approach for CRLF site assessment surveys described in PCWA's AQ 12 – Special-Status Amphibian and Aquatic Reptile Technical Study Plan (TSP). The study area for the CRLF Site Assessment encompassed one mile around all existing Project facilities and features, Project recreation facilities, stakeholder-identified dispersed concentrated use areas, and river/stream reaches potentially affected by the MFP within the historic range of the species (below 5,000 feet in elevation) (PCWA 2008). The study area also included one mile around potential Project betterments/improvements (less than 5,000 feet in elevation), including proposed new facilities, roads, trails; staging and disposal sites; as well as potential new inundation areas.

On March 27, 2008, USFWS provided a letter to PCWA stating that following review of the CRLF Site Assessment Report (PCWA 2008), USFWS determined that protocol-level presence/absence surveys of four aquatic features that appeared to provide suitable habitat for the CRLF were required for relicensing of the MFP. The four aquatic features identified by USFWS as potential breeding habitat for CRLF included the Ralston Ridge Pond and three Horseshoe Bar ponds (C, E, and F; Map AQ 12 CRLF-1). Refer to Appendix A for a copy of this letter (PCWA 2008).

2.0 STUDY OBJECTIVES

The objectives of the CRLF protocol-level surveys as described in the AQ 12 – TSP are:

- Document the distribution and abundance of CRLF populations in the study area, as required by USFWS.

3.0 STUDY IMPLEMENTATION

Study elements described in the AQ 12 – TSP were initiated in 2007 and completed in 2009. A summary of the study elements that have been completed for this report, any deviations from the TSP, outstanding study elements, and proposed modifications to the TSP are described below.

3.1. STUDY ELEMENTS COMPLETED

Following submittal of the CRLF Site Assessment Report to USFWS in 2008, USFWS determined that protocol-level presence/absence CRLF surveys were required at four aquatic features. The following describes the study elements completed for the CRLF protocol-level presence/absence surveys.

- Completed CRLF surveys in accordance with the USFWS Guidance (USFWS 2005). USFWS decontamination guidelines were implemented during the surveys.
- Completed CRLF surveys in areas requested by USFWS that were accessible and could be safely surveyed by a qualified biologist. Protocol-level surveys consisted of up to eight visits (two day visits and four night visits during the breeding season and one day and one night visit during the non-breeding season).
- Prepared a CRLF survey report that included the following:
  - Copies of datasheets;
  - Copies of field notes;
  - GPS data for all surveyed sites;
  - Photographs of individual CRLFs observed during surveys and habitats where the individual was observed; and
  - GIS map documenting the location of each individual CRLF observed during the surveys.
- Notified USFWS within three working days if a CRLF was detected at any location.
- Prepared and submitted a California Native Species Field Survey Form for all CRLF recorded to the California Natural Diversity Database (CNDDB).
- Recorded any incidental sightings of CRLF during implementation of any aquatic technical studies.

3.2. DEVIATIONS FROM THE AQ 12 – TSP

There were no deviations from the AQ 12 – TSP.

3.3. OUTSTANDING STUDY ELEMENTS

There are no outstanding study elements.

3.4. PROPOSED MODIFICATIONS TO THE AQ 12 – TSP

There are no proposed modifications to the AQ 12 – TSP.

4.0 EXTENT OF STUDY AREA

Four aquatic features were identified by USFWS as potential breeding habitat for CRLF in the study area—the Ralston Ridge Pond and three Horseshoe Bar ponds (Ponds C, E, and F; Map AQ 12 CRLF-1). These aquatic features are: (1) within the current range of the CRLF; (2) within one mile of the MFP Project; and (3) for the Ralston Ridge Pond, is the location of a documented CRLF occurrence.

5.0 STUDY APPROACH

Protocol-level presence/absence surveys for CRLF were conducted in accordance with USFWS Guidance (USFWS 2005). Surveys were conducted by qualified biologists by kayak, float tube, and by foot. Refer to Appendix B for copies of the biologists' resumes. Surveys were lead by Jeff Alvarez, a recognized CRLF biologist who holds a valid 10(a)1(A) permit.

During all surveys, weather conditions were suitable for collecting accurate and reliable field data. At all times during surveys air temperatures were warmer than 50º F and wind speed was less than 5 miles per hour. No surveys were conducted in rain, fog, or heavy clouds.

5.1. CRLF BREEDING SEASON SURVEYS

The USFWS Guidance recommends conducting two day surveys and four night surveys during the CRLF breeding season, which begins April 15 and ends on June 30 in the Sierra Nevada Mountains and other high-elevation locations (USFWS 2005). Breeding season surveys for this study were conducted from April 28 through June 24, 2009. Provided below is a description of the day and night breeding survey methods.

5.1.1. Day Surveys

Two day surveys were conducted during the CRLF breeding season to locate CRLF larvae, metamorphs, and egg masses. The surveys took place at least seven days apart. Surveys were conducted at least one hour after sunrise and one hour before sunset.

At all survey locations the banks of the ponds were scanned with binoculars. At the Ralston Ridge Pond, two biologists walked the perimeter of the pond. Both the near and far banks were scanned with binoculars. Due to thick vegetation present along the perimeter of the Horseshoe Bar ponds (C, E, and F), the banks were surveyed from the water. Two qualified biologists searched the shoreline and aquatic habitat by kayak or float tubes. Field observations and notes on conditions during surveys were recorded on datasheets developed by USFWS (Appendix C).

5.1.2. Night Surveys

Four night surveys were conducted to locate adult and metamorphosed CRLF. The surveys took place at least seven days apart. Night surveys were conducted at least one hour after sunset.

During night surveys, a Maglite 4D Cell flashlight was held at eye-level and used to search for eye shine and individuals along banks and within the ponds. Field observations and notes on conditions during surveys were recorded on datasheets developed by USFWS (Appendix C).

5.2. CRLF NON-BREEDING SEASON SURVEYS

The USFWS Guidance recommends conducting one day and one night survey during the CRLF non-breeding season, which occurs July 1 through September 30. At least one survey must be conducted prior to August 15. Non-breeding season surveys for this study were conducted on July 14, 2009. Provided below is a description of the day and night non-breeding survey methods.

5.2.1. Day Surveys

One day survey took place during the non-breeding season. The survey was conducted during July to locate metamorphosing sub-adult and non-breeding adult CRLF. The survey was conducted at least one hour after sunrise and one hour before sunset. Refer to Section 5.1.1 for a detailed description of survey methods.

5.2.2. Night Surveys

One night survey was also conducted during the non-breeding season. Night surveys were conducted during July to locate adult and metamorphosed CRLF. The survey was conducted at least one hour after sunset. Refer to Section 5.1.2 for a detailed description of survey methods.

6.0 STUDY RESULTS

This section provides a summary of the results of CRLF breeding and non-breeding surveys. All observations, survey dates, and weather conditions during surveys were recorded on datasheets developed by the USFWS and are provided in Appendix C. A summary of the survey results is provided in Table AQ 12 CRLF-1. A detailed description of CRLF habitat at the survey sites is provided in the CRLF Site Assessment Report included as Attachment A of the AQ 12 – TSR – 2007 (PCWA 2008).

The following briefly describes each of the ponds included in the protocol-level presence/absence surveys. Detailed descriptions and assessments for all four ponds are provided in the CRLF Site Assessment Report (PCWA 2008). Representative photographs of the ponds are provided in Appendix D.

Ralston Ridge

The Ralston Ridge Pond is an ephemeral pool north of Pennsylvania Point, on the western end of Ralston Ridge. The site, which is on a right-of-way below a PG&E transmission line, was almost completely burned in the Ralston Ridge Wildfire of 2006 and remains almost completely denuded. The pond appears to have been formed in a depression caused by ground disturbance and erosion resulting from logging operations. The only known CRLF record within the Site Assessment study area was from this site. In June 2001, a single adult CRLF was observed by biologists conducting surveys for the Pacific Gas and Electric Company (PG&E) (CNDDB 2007, PG&E 2004). Refer to Map AQ 12 CRLF-1 for the location of this pond.

Horseshoe Bar (C, E, and F)

The land at Horseshoe Bar was dewatered in the 1850s when gold miners rerouted the original course of the Middle Fork American River (MFAR) through what is now called the Tunnel Chute. Several ponds at this location represent impoundments that were created in the widening of old mining excavations. Three ponds were surveyed at this location based on guidance from USFWS. There are no recorded CRLF occurrences documented in these ponds. Specifically, protocol-level surveys were conducted at Ponds C, E, and F. Refer to the Horseshoe Bar inset in Map AQ 12 CRLF-1 for the location of these ponds in relation to the site.

6.1. CRLF BREEDING SEASON SURVEYS

Day breeding surveys were conducted on April 28 and May 5, 2009. Night breeding surveys were conducted on May 5, May 19, June 16, and June 24, 2009. No CRLF egg masses or individuals of any life stage were observed during day or night CRLF breeding season surveys at the Ralston Ridge Pond or the Horseshoe Bar ponds (C, E, and F).

Egg masses as well as all life stages of Pacific treefrog (*Pseudacris regilla*) were observed during surveys at the Ralston Ridge Pond. Other species observed include predaceous diving beetle and sign of raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), bobcat (*Lynx rufus*), and black bear (*Ursus americanus*).

All life stages of bullfrog (*Lithobates catesbeianus*) as well as adult Pacific treefrog were observed during surveys at the Horseshoe Bar ponds (C, E, and F). Other species observed include crayfish, minnow, western toad (*Bufo boreas*), western pond turtle (*Actinemys marmorata)*, green heron (*Butorides virescens*), and river otter (*Lontra canadensis*).

6.2. CRLF NON-BREEDING SEASON SURVEYS

The day and night non-breeding survey was conducted on July 14, 2009. No CRLF were observed during the day or night CRLF non-breeding season surveys at the Ralston Ridge Pond or the Horseshoe Bar ponds (C, E, and F).

Larval and metamorph Pacific treefrog were observed at the Ralston Ridge pond. Other species observed include Sierra gartersnake (*Thamnophis couchii*). All life stages of bullfrogs were observed at the Horseshoe Bar ponds (C, E, and F). Other species observed include adult western toad and sign of river otter.

7.0 LITERATURE CITED

California Department of Fish and Game (CDFG). 2007. California Natural Diversity Database. RareFind 3.0.5. Rancho Cordova, CA.

Placer County Water Agency (PCWA). 2008. FINAL AQ 12 – Special-Status Amphibian and Aquatic Reptile Technical Study Report. PCWA Middle Fork American River Project (FERC Project No. 2079). June 2008.

Pacific Gas and Electric Company (PG&E), 2004. California Red-Legged Frog Surveys Report, Ralston Ridge Pond, Placer County, California. San Ramon, CA.

United States Fish and Wildlife Service (USFWS). 2005. Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog. August 2005.

TABLES

Table AQ 12 CRLF-1. California Red-legged Frog Protocol-Level Survey Results Summary.

Site	Date	Survey Type Breeding/ Non-breeding	Day/ Night Survey	Survey Conditions					Observations		
				Cloud Cover/ Precipitation/ Humidity	Air/Water Temperature (ºF)	Wind Speed (mph)	Visibility	Moon Phase	CRLF	Other Amphibians	Potential Threats/ Incidental Species
Ralston Ridge Pond	4/28/2009	Breeding	Day	10% / None / Low	60 / 50	2 - 3	Good	Waxing crescent	None	Pacific treefrog *(Pseudacris regilla)*	black bear (*Ursus americanus*) (tracks), racoon (*Procyon lotor*) (tracks), predaceous diving beetle
	5/5/2009	Breeding	Night	Mostly clear / None / Low	50 / 55	1 - 2	Good	Waxing gibbous	None	Pacific treefrog	
	5/19/2009	Breeding	Day	Clear / None / High	76 / 60	2 - 3	Good	Waning crescent	None	Pacific treefrog	
		Breeding	Night	Mostly clear / None/ High	70 / 60	1 - 2	Good	Waning crescent	None	Pacific treefrog	
	6/16/2009	Breeding	Night	20% / None / High	60 / 62	1 - 2	Good	Waning crescent	None	Pacific treefrog	black bear (tracks), skunk (*Mephitis mephitis*) (tracks), bobcat (*Lynx rufus*) (tracks)
	6/24/2009	Breeding	Night	Mostly clear / None / Low	78 / 65	1 - 2	Good	Waxing crescent	None	Pacific treefrog	
	7/14/2009	Non-breeding	Day	Clear / None / Low	94 / 71	3	Good	Waning gibbous	None	Pacific treefrog	Sierra gartersnake (*Thamnophis couchii*), cattle grazing
		Non-breeding	Night	Clear / None / Low	80 / 71	1	Good	Waning gibbous	None	Pacific treefrog	Sierra gartersnake
Horseshoe Bend Pond C	4/28/2009	Breeding	Day	10% / None / Low	64-69 / 50	3 - 4	Good	Waxing crescent	None	bullfrog (*Lithobates catesbeianus*)	bullfrog
	5/5/2009	Breeding	Night	Mostly clear / None / Low	55 / 55	1 - 2	Good	Waxing gibbous	None	bullfrog , western toad (*Bufo boreas*)	bullfrog
	5/19/2009	Breeding	Day	Mostly clear / None / High	76 / 60	3	Good	Waning crescent	None	bullfrog	bullfrog
		Breeding	Night	Mostly clear / None / High	68 / 60	1 - 2	Good	Waning crescent	None	bullfrog	bullfrog , crayfish, hardhead minnow/pikeminnow
	6/16/2009	Breeding	Night	20% / None / High	56 / 62	< 1	Good	Waning crescent	None	bullfrog	bullfrog
	6/24/2009	Breeding	Night	Mostly clear / None / Low	72 / 65	1	Good	Waxing crescent	None	bullfrog	bullfrog
	7/14/2009	Non-breeding	Day	Clear / None / Low	96 / 70	2 - 3	Good	Waning gibbous	None	bullfrog	bullfrog
		Non-breeding	Night	Clear / None / Low	80 / 70	< 1	Good	Waning gibbous	None	bullfrog	bullfrog

Table AQ 12 CRLF-1. California Red-legged Frog Protocol-Level Survey Results Summary (continued).

Site	Date	Survey Type Breeding/ Non-breeding	Day/ Night Survey	Survey Conditions					Observations		
				Cloud Cover/ Precipitation/ Humidity	Air/Water Temperature (ºF)	Wind Speed (mph)	Visibility	Moon Phase	CRLF	Other Amphibians	Potential Threats/ Incidental Species
Horseshoe Bend Pond E	4/28/2009	Breeding	Day	10% / None / Low	64-69 / 50	4	Good	Waxing crescent	None	bullfrog	bullfrog, river otter (*Lontra canadensis*) observed nearby at Pond D, Western pond turtle (*Actinemys marmorata*)
	5/5/2009	Breeding	Night	Mostly clear / None / Low	60 / 55	1 - 2	Good	Waxing gibbous	None	bullfrog , Pacific treefrog	bullfrog
	5/19/2009	Breeding	Day	Mostly clear / None / High	78 / 60	3	Good	Waning crescent	None	bullfrog	bullfrog
		Breeding	Night	Mostly clear / None / High	67 / 60	1 - 2	Good	Waning crescent	None	bullfrog , western toad	bullfrog
	6/16/2009	Breeding	Night	20% / None / High	57 / 62	1 - 2	Good	Waning crescent	None	bullfrog , western toad	bullfrog
	6/24/2009	Breeding	Night	Mostly clear / None / Low	74 / 65	1 - 2	Good	Waxing crescent	None	bullfrog , western toad	bullfrog, crayfish, green heron (*Butorides virescens*)
	7/14/2009	Non-breeding	Day	Clear / None / Low	97 / 70	2 - 3	Good	Waning gibbous	None	bullfrog	bullfrog
		Non-breeding	Night	Clear / None / High	73 / 70	< 1	Good	Waning gibbous	None	bullfrog	bullfrog
Horseshoe Bend Pond F	4/28/2009	Breeding	Day	10% / None / Low	64-69 / 50	4	Good	Waxing crescent	None	bullfrog	bullfrog
	5/5/2009	Breeding	Night	Mostly clear / None / Low	60 / 55	4	Good	Waxing gibbous	None	bullfrog , Pacific treefrog	bullfrog
	5/19/2009	Breeding	Day	Mostly clear / None / High	78 / 60	3	Good	Waning crescent	None	bullfrog	bullfrog
		Breeding	Night	Mostly clear / None / High	65 / 60	1 - 2	Good	Waning crescent	None	bullfrog	bullfrog
	6/16/2009	Breeding	Night	Clear / None / High	58 / 63	< 1	Good	Waning crescent	None	bullfrog	bullfrog , mallard hen (*Anas platyrhynchos*) nesting
	6/24/2009	Breeding	Night	Mostly clear / None / Low	74 / 65	< 1	Good	Waxing crescent	None	bullfrog	bullfrog , crayfish
	7/14/2009	Non-breeding	Day	Clear / None / Low	97 / 70	4	Good	Waning gibbous	None	bullfrog	bullfrog , river otter (scat)
		Non-breeding	Night	Clear / None / Low	72 / 70	1 - 2	Good	Waning gibbous	None	bullfrog	bullfrog , green heron, mallard hen nesting

MAPS

APPENDIX A
USFWS March 28, 2008 Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2008-TA-0986-1

MAR 2 7 2008

Mr. Mal Toy
Director of Resource Development
Placer County Water Agency
P.O. Box 6570
Auburn, California 95604

Subject: Review of California Red-Legged Frog Site Assessment for the Middle Fork American River Project (FERC No. 2079), Placer County, California.

Dear Mr. Toy:

This is in response to the February 19, 2008, *California Red-legged Frog Site Assessment Report* that was submitted to the U.S. Fish and Wildlife Service (Service) for review. Placer County Water Agency is in the process of obtaining a new license to operate the existing hydroelectric power generation project along the Middle Fork of the American River, Placer County, California. At issue are the potential effects of the project on the threatened California red-legged frog (*Rana aurora draytonii*) (frog). This letter is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

The nearest known California red-legged frog population is approximately 2 miles north of the project near Michigan Bluff, California, and an additional known frog occurrence is located within 1 mile of the project boundary on Ralston Ridge. Because no frogs have been identified as occupying the Ralston Ridge site in the years following its 2001 discovery, it is possible that this site represents dispersal habitat for the frog. Searches of areas surrounding the Ralston Ridge site have not located a source California red-legged frog population. Given the lack of barriers between Ralston Ridge and Michigan Bluff, the individual located in 2001 could have dispersed from the known Michigan Bluff population. A frog dispersing from the Michigan Bluff site to Ralston Ridge would cross the Middle Fork of the American River in a reach affected by this proposed project. Therefore, the Service concludes this project may affect this listed species.

Furthermore, in order to adequately assess the effects of the project on the frog, additional areas of suitable habitat should be surveyed for this listed species. While no frogs have been detected at Ralston Pond since 2001, the pond was last surveyed in 2004. Since 2001, no protocol level surveys have been conducted at this site. Because the Ralston Ridge pond appears to provide

suitable habitat for the California red-legged frog, we recommend protocol level surveys of this aquatic feature be conducted following the Service's 2005, *Revised Guidance on Site Assessment and Field Surveys for the California Red-legged Frog* (Guidelines), and the results of these surveys be submitted to the Service for review

The area identified in the site assessment as Horseshoe Bar contains suitable breeding habitat for the California red-legged frog. Given that Horseshoe bar is located approximately 2.8 miles from the known Michigan Bluff frog population, is within the same watershed, and maintains connectivity with the known population, it is probable that the ponds at Horseshoe Bar contain this listed frog. Therefore since three ponds located at Horseshoe Bar (ponds C, E, and F) appear to provide suitable breeding habitat for the frog, we recommend protocol level surveys of these aquatic features be conducted following the Service's 2005, Guidelines. Since the Horseshoe Bar ponds are located on private property, we understand that access to conduct surveys may be an issue. If permission to conduct surveys is not granted, based on connectivity with, and proximately to, a known frog population, Placer County Water Agency should assume presence of this listed amphibian and analyze the effects that the proposed project may have on a California red-legged frog population at Horseshoe Bar.

Please address any questions or concerns regarding this response on the Middle Fork American River Project to Jeremiah Karuzas, or Amy Fesnock, acting Forest and Foothills Branch Chief, at (916) 414-6600.

Sincerely,

Cay C. Goude
Assistant Field Supervisor

cc:
Service List – Middle Fork American River Project

APPENDIX B
Biologist Resumes

Curriculum Vitae

JEFF ALVAREZ-WILDLIFE BIOLOGIST

P.O. Box 579805
Modesto, California 95357
(209) 815-5660
Jeff@thewildlifeproject.com

RESEARCH POSITIONS:

The Wildlife Project (7/90-date)
Wildlife Biologist: Designed, developed and tested wildlife management techniques and equipment. Prepared grant proposals for various research projects for reptiles, amphibians, bats, and rodents. Sought and received funding for proposed projects. Implemented, managed, and collected data, for various research projects. Documented findings and published results.

Smithsonian Institution - Department of Zoological Research (2/93-8/95)
Research Biologist: Designed and implemented a study to determine the habitat suitability and distribution of San Joaquin Kit Fox in Alameda and Contra Costa Counties, CA. Also determined habitat suitability for San Joaquin Kit Fox in Fresno, Madera, Mariposa, Merced, Stanislaus, and Tuolumne Counties, CA, and assisted in the development of management goals. Analyzed data; wrote, submitted and defended a report to the Calif. Dept. of Fish and Game.

PUBLICATIONS:

Fellers, G. M., A Launer, G. Rathbun, S. Bobzien, J. Alvarez, D. Sterner, R. Seymour, and M, Westphal. 2001. Overwintering tadpoles in the red-legged frog (*Rana aurora draytonii*). Herpetological Review 32:156–157.

Alvarez, J. A. 2004. Use of artificial egg laying substrate to detect California tiger salamanders (*Ambystoma californiense*). Herpetological Review 35: 45–46.

Alvarez, J. A. 2004. An easily constructed Tuttle trap for bats. Wildlife Society Bulletin 32:264–266.

Alvarez, J. A., C. Dunn, and A. Zuur. 2004. Response of California red-legged frogs to predatory fish removal. Transactions of the Western Section of the Wildlife Society 38/39:9–12.

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Alvarez, J. A. 2005. Unanticipated predation of California red-legged frog at constructed wetlands (California). Ecological Restoration 21:66-67.

Alvarez, J. A. 2005. A compilation of observations of Alameda Whipsnake outside of typical habitat. Transactions of the Western Section of the Wildlife Society 41:21-25.

Alvarez, J. A. 2006. Use of artificial basking substrate to detect and monitor western pond turtles (*Emmys marmorata*). Western North American Naturalist 66:129-131.

Alvarez, J. A. 2006. *Masticophis lateralis euryxanthus* (Alameda whipsnake) Habitat. Herpetological Review 37:233.

Alvarez, J. A. 2006. *Actinemys marmorata*. (Pacific Pond Turtle) Habitat. Herpetological Review 37:339-340.

Alvarez, J. A. 2008. *Complete List of the Vertebrates of California, 6th edition*. 24 pp. The Wildlife Project Press. 23 pp.

Alvarez, J. A., M. A. Shea, J. L. Alvarez. *In Press*. California tiger salamander and California red-legged frog sympatry in eastern Contra Costa County, CA. California Fish and Game.

Alvarez, J., C. Dunn, and M. A. Shea. *In Press*. Colonization and use of constructed wetlands by California red-legged frogs. Journal or Herpetology.

PERMITS

Recovery permit [10(a)1(A)].
VERTEBRATES: California tiger salamander, Alameda Whipsnake, California red-legged frog; and named as a permittee for San Francisco garter snake

INVERTEBRATES: conservancy fairy shrimp, longhorn fairy shrimp, San Diego fairy shrimp, Riverside fairy shrimp, and vernal pool tadpole shrimp.

RESEARCH PROJECTS IN PROGRESS:

Colonization and use of constructed wetlands by California tiger salamanders.

Removing mosquito fish from ponds utilized by threatened amphibians.

Collateral impacts to threatened amphibians using mitigation wetlands; recommendations for improvement.

Microhabitat characteristics at oviposition sites of California red-legged frogs.

A parsimonious key to California garter snakes: a simplified method for identifying California *Thamnophis*.

Alvarez, J. A. The fairy shrimps of western North America. The Wildlife Project Press, Modesto, CA.

PRESENTATIONS:

Response of California red-legged frogs to predatory fish removal. Western Section of the Wildlife Society Conference, 2000.

Colonization and use of constructed wetlands by California red-legged frogs. Western Section of the Wildlife Society Conference, 2000.

Review of five years of California red-legged frog (*Rana aurora draytonii*) survey results at the Los Vaqueros watershed: is there an optimal time to survey? Western Section of the Wildlife Society Conference, 2004.

Foods of Bullfrogs in Kellogg Creek, California. Western Section of the Wildlife Society Conference, 2004.

Extirpation as a management tool: can controlling bullfrogs benefit a population of red-legged frogs? A preliminary report. Western Section of the Wildlife Society Conference, 2007.

INVITED PRESENTATIONS AND WORKSHOPS:

Mammals: a review of the worldwide orders. Oakland Zoological Society, annually 1997-2005.

California tiger salamander management at the Los Vaqueros Watershed. San Francisco Bay Chapter of The Wildlife Society, 1999.

Managing California tiger salamanders in a drinking water watershed—a five-year update. San Francisco Bay Chapter of The Wildlife Society, 2003.

Western pond turtle management: lessons learned and recommendations for the future. San Francisco Bay Chapter of The Wildlife Society, 2005.

Rare pond species survey techniques: California red-legged frog, California tiger salamander, western pond turtle. Laguna Foundation and The Wildlife Project, Rohnert Park, CA

WORK EXPERIENCE:

The Wildlife Project - *Self-employed.* (7/90-date).
Biological Consultant: Determined the status of common and listed species including listed fairy shrimp; Tehachapi slender, yellow-blotched, and California tiger salamanders; California red-legged, mountain yellow-legged, and foothill yellow-legged frogs, Alameda whipsnake, desert tortoise, western pond turtle, black rail, clapper rail, California least tern, western burrowing owl, pallid bat, Townsend's big-eared bat, San Joaquin kit fox, and many other species on various sites throughout central California. Assessed the biotic component (plants and animals) of proposed development sites for conservation organizations, private industry, and governmental agencies within California and west-central Nevada.

Offered wildlife survey techniques workshops for the general public and colleagues. Developed and tested new techniques and equipment for surveying wildlife. Conducted environmental education programs for civic and peer groups with an emphasis towards vertebrate natural history, endangered and threatened species conservation, and career choices in biological fields.

Prepared various documents including EIRs, BAs, NESs, EAs and site-specific documentation from field surveys. Offered oral presentations in support of findings.

Contra Costa Water District – (9/98-5/00).
Wildlife Biologist: Implemented mitigation monitoring for California tiger salamander, California red-legged frog, western pond turtle, San Joaquin kit fox, Alameda whipsnake, western burrowing owl, golden eagle, bald eagle, long-horned fairy shrimp and other species within the upper Kellogg Creek Watershed. Monitored and managed small mammal and raptor populations. Designed and implemented a recreational fisheries program for public recreation in the Los Vaqueros Reservoir. Monitored, managed, and maintained native and non-native fish stock in the reservoir and watershed. Assessed and monitored other special status wildlife, plants and artificial wetlands. Suppressed fires and enforced ordinances under water district jurisdiction. Analyzed data and assembled various documents and reports

Jones and Stokes Associates, Inc. - (10/94-8/00).
Biological Consultant: Implemented mitigation plans for California tiger salamander and monitored and assessed several (PIT-tagged) populations over a several year period. Captured, marked, relocated, and monitored California red-legged frogs, and western pond turtles in the upper Kellogg Creek Watershed. Maintained salamander, frog, and turtle traps and exclusion fence lines.

Assisted in the assessment of habitat suitability for San Joaquin kit fox in Alameda, and Contra Costa Counties. Assessed habitat suitability and presence of protected bat species on various State, Federal, and private properties. Assessed habitat suitability and status of red-legged frogs in 11 different Counties. Conducted presence/absence surveys for red-legged frogs, spadefoot toad, arroyo toad, California tiger salamander, pond turtle, giant garter snake, Alameda whipsnake, two-striped garter snake, desert tortoise, western burrowing owl, golden eagle, pallid bat, Townsend's big-eared bat, kit fox, and fairy shrimp species.

INTENSIVE LISTED-SPECIES SURVEYS:

California Tiger Salamander (*Ambystoma californiense*) - 2105 hours of intensive surveys including trapping and marking salamanders in 5 different counties.

California Red-legged Frog (*Rana draytonii*) - 2745 hours of intensive surveys including long-term monitoring all life stages, presence absence surveys, in 12 different counties throughout California.

Alameda Whipsnake (*Masticophis lateralis euryxanthus*) - 1940 hours protocol level surveys including trapping and marking snakes in 2 different counties.

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*) - 1170 hours protocol level surveys including trapping and marking snakes in 1 county.

Desert Tortoise (*Gopherus agassizii*) - 552 hours protocol level surveys in 3 different counties.

San Joaquin Kit Fox (*Vulpes macrotis mutica*) - 830 hours of protocol levels kit fox surveys in 11 different counties throughout California.

EDUCATION AND ON-GOING TRAINING:

Undergraduate education - *Wildlife*, Humboldt State University, Arcata, California - emphasis on understanding the natural history and management of vertebrates. 1988-1990.

1994. Natural history and handling of western bats. *Bat Conservation International.* Strong emphasis on trapping and handling techniques, and identification of bats and their habitat.

1998. Conservation and identification of fairy shrimp. *Denton Belk, PhD.* Emphasis on identification of fairy shrimp and their habitat.

2006. Biology and Conservation of the Alameda Whipsnake. *Karen Swaim*. Emphasis on the identification of Alameda Whipsnake and its habitat.

Peter J. Graf

SENIOR STAFF SCIENTIST – AQUATIC STUDIES

DISCIPLINE/SPECIALTY

- Aquatic Ecology
- Fisheries Biology
- Instream Flow Surveying
- Data Analysis
- Special Status Species Surveys

EDUCATION

- M.S., Biology, University of Nevada, Reno, 2006
- B.S., Environmental Science, University of Colorado, 2001

TRAINING/CERTIFICATIONS

- Protocol-level CRLF Surveys
- EPA Ambient Water Quality Monitoring
- MatLab Statistical Modeling
- ArcView GIS
- Program MARK
- S-Plus Statistics
- ENVI 3.2 (Remote Imagery)

SUMMARY OF QUALIFICATIONS

Mr. Graf has a strong interdisciplinary background in aquatic ecology and environmental sciences. For 10 years he has been involved in field-based fisheries studies. His primary focus has been on aquatic issues related to hydroelectric licensing including fisheries, amphibians, and instream flow studies. Specifically, Mr. Graf has lead habitat mapping studies, fish population studies, hardhead distribution surveys, entrainment studies, and foothill yellow-legged and California red-legged protocol-level surveys. Mr. Graf also has experience conducting hydraulic and instream flow surveys.

RELEVANT EXPERIENCE

HYDROELECTRIC LICENSING

Aquatic Studies Senior Scientist – Middle Fork American River Integrated Hydroelectric Licensing Project (Placer County Water Agency), Western Slope Sierra Nevada

Mr. Graf played a leading role in the design and implementation of the aquatic studies associated with the hydroelectric re-licensing process on the Middle Fork American River. The studies implemented on the project included:

- Fisheries population and distribution
- Foothill yellow-legged frog habitat use and distribution
- Instream flow surveys and modeling
- Protocol-level California red-legged frog surveys
- Benthic and drift macroinvertebrate collection
- Hydraulic modeling
- Fish entrainment

Senior Staff Biologist – Big Creek Strategic Alternative Licensing Project, Central Sierra Nevada, California

Mr. Graf assisted in the monitoring of spawning activity and radio-tagged adult hardhead along key stream reaches of the San Joaquin River. Mr. Graf also assisted in the monitoring of stream temperatures and reservoir temperature profiles.

FISHERIES BIOLOGY

Fisheries Biologist – Road Condition and Stream Crossing Habitat, Prince of Wales, Alaska

This project assessed the stream habitat and water quality in the vicinity of road crossing. Mr. Graf was responsible for identifying anadromous fish rearing streams and the condition of culverts in relation to fish passage. Duties included surveying, electrofishing, data management, planning and organizing field work in remote field stations.

Fisheries Biologist – Road Condition Surveys, Seward, Alaska

Mr. Graf trained USFS employees on to perform road survey and stream habitat assessments.

Fisheries Biologist – USDA Forest Service, Sitka, AK

Mr. Graf operated and maintained a remote fish wier, provided daily updates of salmon population status, collected water quality data, and assessed the condition of spawning habitat.

Research Assistant – National Geographic/Mekong, Wetland Biodiversity Project, Thailand
Mr. Graf was a field assistant and lead surgeon for Giant catfish movement and conservation project. Mr. Graf assisted in the implementation of acoustic telemetry planning and data collection.

Ecologist – Point Reyes and Golden Gate NP, Coastal, CA
In this study Mr. Graf assisted in data collection related to stream restoration and hydrology projects in Point Reyes NP and the Golden Gate NP.

EMPLOYMENT HISTORY

- ENTRIX, Inc., Staff Senior Scientist, Aquatic Ecology, 2007-to date
- ENTRIX, Inc., Staff Scientist, Aquatic Ecology, 8/2006-2007
- University of Nevada at Reno, Graduate Research Assistant, 8/2003-5/2005
- PBS Environmental, Fish Biologist, 4/2002-8/2002
- US Forest Service, Field Technician, 4/2001-10/2001

ROBERTSON - BRYAN, INC.
Solutions for Progress

Ann M. Crisp

Project Biologist

Ms. Ann M. Crisp is a terrestrial biologist with more than 6 years of experience. Ms. Crisp is experienced in conducting a wide range of biological surveys, including special-status plants and noxious weeds, bald eagle nesting and wintering surveys, and vegetation community mapping. Ann has conducted vegetation surveys throughout the Central Valley and Sierra regions of California, as well as northwest Oregon. Ann conducted field studies and drafted biological assessments for various projects. She assisted in the development of the technical study reports for Placer County Water Agency Middle Fork American River Hydroelectric Project Relicensing.

EDUCATION B.S., Wildlife Biology, 2004, University of California, Davis

REPRESENTATIVE PROJECT EXPERIENCE

LOS VAQUEROS WATERSHED–CCWD, CONTRA COSTA COUNTY

Ms. Crisp attended a field visit/training at several stock ponds at the Los Vaqueros Watershed in July 2009. Ms. Crisp, under the supervision of permitted biologist, Jeff Alvarez, dip-netted for California tiger salamander and California red-legged frog larvae in stock ponds. As part of the field work, 33 California tiger salamander larvae and over 480 California red-legged frog larvae were captured and released. Ms. Crisp also observed 17 adult California red-legged frogs.

NEVADA IRRIGATION DISTRICT LOWER CASCADE CANAL–BANNER/CASCADE PIPELINE PROJECT

Ms. Crisp completed special-status plant surveys to comply with measures in the Lower Cascade Canal–Banner/Cascade Pipeline Project Final Environmental Impact Report.

PLACER COUNTY WATER AGENCY MIDDLE FORK AMERICAN RIVER HYDROELECTRIC RELICENSING PROJECT

Project biologist for the Middle Fork American River Project (MFP) Integrated Licensing Process (ILP) for the Placer County Water Agency (PCWA). Researched and compiled information on existing biological resources for the Preliminary Application Document. Coordinated and executed technical studies in the Sierra (1,100 feet to 5,300 feet in elevation) for biological resources, including special-status plants, noxious weeds, and special-status wildlife such as bald eagle. Conducted data management and assisted in the development of technical study reports and presentations based on the conclusions of field studies.

BIG CREEK SYSTEM HYDROELECTRIC RELICENSING PROJECT

Project biologist for the Big Creek System Alternative Licensing Process (ALP) for Southern California Edison Company (SCE). This project has submitted applications to the Federal Energy Regulatory Commission

(FERC) for four projects: Big Creek Nos. 1 & 2 (FERC No. 2175); Big Creek Nos. 2A, 8, and Eastwood (FERC No. 67); Big Creek No. 3 (FERC No. 120); and Mammoth Pool (FERC No. 2085). Assisted in field studies in preparation of the biological resources component of the FERC license, including wildlife and botanical—special-status plant species, noxious weeds and plants of cultural concern for Native Americans—for a nearly 1,500-square-mile watershed in the Upper San Joaquin River.

BIG CREEK NO. 4 HYDROELECTRIC ENVIRONMENTAL TRAINING AND COMPLIANCE PROJECT

Project biologist for the Big Creek No. 4 Traditional Licensing Process (TLP) for SCE. Assisted in the preparation of the documents supporting various management plans, including yearly monitoring reports for the Noxious Weed Management Plan and Valley Elderberry Longhorn Beetle Management Plan. Assisted in the development and implementation of compliance-related products for Big Creek No. 4.

KAWEAH HYDROELECTRIC PROJECT

Project biologist for the SCE Kaweah Hydroelectric Project (Federal Energy Regulatory Commission Project No. 298). Completed a Biological Assessment (BA) that evaluated to what extent, if any, maintenance activities of the Project may affect valley elderberry longhorn beetle (VELB).

NEVADA IRRIGATION DISTRICT COLE SIPHON REPLACEMENT PROJECT BIOLOGICAL RESOURCES ASSESSMENT

The Cole Siphon Replacement Project Biological Resources Assessment was completed for a proposed pipeline replacement. The project, located in Grass Valley, involved the replacement and rerouting of an existing pipeline to a new alignment. As project biologist, completed a literature review, reconnaissance survey and prepared a biological assessment and CEQA compliance documentation.

NEVADA IRRIGATION DISTRICT ELIZABETH GEORGE WATER TREATMENT PLANT

Ms. Crisp was a member of the team that conducted CEQA compliance and documentation for the Nevada Irrigation District's expansion of the E. George WTP to meet future community potable water demands associated with planned and approved development envisioned in the City of Grass Valley 2020 General Plan and the Nevada County General Plan. Ann's tasks included assisting in the preparation of the biological resources section of the Initial Study / Mitigated Negative Declaration. Concurrent with the expansion of the water treatment plant, NID proposes to construct improvements to the existing facility to reliably meet state and federal drinking water standards.

NEVADA IRRIGATION DISTRICT WATER LINE EXTENSION AND AD/CFD PROJECTS

Ms. Crisp is currently working with NID to complete biological resource surveys and prepare necessary documentation for over 15 water line extension and other infrastructure improvement projects in the NID Service Area. Following completion of necessary surveys, agency consultation, and reporting, NID will have necessary documentation and permitting approvals to streamline project design and construction.

CALIFORNIA DEPARTMENT OF FISH AND GAME RESOURCE ASSESSMENT PROGRAM

Research technician for the Resource Assessment Program of the California Department of Fish and Game (CDFG). Conducted long-term reptile and amphibian surveys on various CDFG Wildlife Areas and Ecological Reserves. Conducted small mammal mark-recapture surveys using live traps, California tiger salamander larval dipnet surveys, and burrowing owl nesting surveys. One objective of these studies was to investigate species response to seasonal flood events. Ms. Crisp collaborated in the design of vegetation sampling protocol and implemented the protocol at all wildlife survey areas.

Ms. Crisp also conducted field-based vegetation sampling to classify vegetation types to alliance level on multiple Wildlife Areas and Ecological Reserves, and was responsible for data management and preparation for inclusion in a statewide database.

TRAINING

Rare Pond Species Workshop (western pond turtle, California red-legged frog, and California tiger salamander), Laguna de Santa Rosa Foundation, Rohnert Park, California, 2009.

Ecology and Conservation of California Bats, San Francisco State University Sierra Nevada Field Campus, Sattley, California, 2007.

PROFESSIONAL AFFILIATIONS

The Wildlife Society

APPENDIX C

California Red-legged Frog Protocol-level Survey Datasheets

TABLE OF CONTENTS

Page

Ralston Ridge Pond Field Survey Datasheets

Survey results reviewed by:			
	(FWS Field Office)	(date)	(biologist)

Date of Survey: 04/28/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **Placer, Ralston Ridge Pond, 10S 698480, 4319611 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): (**1**) **2** **3** **4** **5** **6** **7** **8**

Begin Time:	~ 5:30 PM	**End Time:**	~ 5:45 PM
Cloud Cover:	10%	**Precipitation:**	None
Air Temp:	60°F	**Water Temp:**	~ 50°F
Wind Speed:	2-3 mph	**Visibility Conditions:**	Good
Moon Phase:	Waxing crescent	**Humidity:**	Low

Description of weather conditions: Clear and sunny w/scattered clouds, breezy.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBSERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	1000s	O	larvae		100%
Pseudacris regilla	8	O	adult		100%
Pseudacris regilla	100s	O	egg mass		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Black bear (*Ursus americanus*) (tracks), raccoon (*Procyon lotor*) (tracks), predaceous diving beetle

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by:			
	(FWS Field Office)	(date)	(biologist)

Date of Survey: 05/05/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **Placer, Ralston Ridge Pond, 10S 698480, 4319611 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

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Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** (**2**) **3** **4** **5** **6** **7** **8**

Begin Time:	10:30 PM	**End Time:**	10:50 PM
Cloud Cover:	Mostly clear	**Precipitation:**	None
Air Temp:	50°F	**Water Temp:**	55°F
Wind Speed:	1-2 mph	**Visibility Conditions:**	Good
Moon Phase:	Waxing gibbous	**Humidity:**	Low

Description of weather conditions: Clear, cool.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	1	O	larvae		100%
Pseudacris regilla	20	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **05/19/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **Placer, Ralston Ridge Pond, 10S 698480, 4319611 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** (**3**) **4** **5** **6** **7** **8**

Begin Time: 4:30 PM **End Time:** 4:45 PM

Cloud Cover: Clear **Precipitation:** None

Air Temp: 76°F **Water Temp:** 60°F

Wind Speed: 2-3 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: Warm, clear, breezy.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **05/19/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **Placer, Ralston Ridge Pond, 10S 698480, 4319611 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

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Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** (**4**) **5** **6** **7** **8**

Begin Time: 8:50 PM **End Time:** 9:05 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 70°F **Water Temp:** 60°F

Wind Speed: 1-2 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: _____

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	100s	O	larvae		100%
Pseudacris regilla	4	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **06/16/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Crisp, Ann (last name, first name

Site Location: **Placer, Ralston Ridge Pond, 10S 698480, 4319611 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

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Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** **4** (**5**) **6** **7** **8**

Begin Time:	8:49 PM	**End Time:**	9:05 PM
Cloud Cover:	20%	**Precipitation:**	None
Air Temp:	60°F	**Water Temp:**	62°F
Wind Speed:	1-2 mph	**Visibility Conditions:**	Good
Moon Phase:	Waning crescent	**Humidity:**	High

Description of weather conditions: Mostly clear, calm evening.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	10-20	O	metamorph		100%
Pseudacris regilla	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

black bear (tracks), skunk (*Mephitis mephitis*) (tracks), bobcat (*Lynx rufus*) (tracks).

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **06/24/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **Placer, Ralston Ridge Pond, 10S 698480, 4319611 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

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Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** **4** **5** (**6**) **7** **8**

Begin Time: 9:00 PM **End Time:** 9:15 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 78°F **Water Temp:** 65°F

Wind Speed: 1-2 mph **Visibility Conditions:** Good

Moon Phase: Waxing crescent **Humidity:** Low

Description of weather conditions: Mostly clear and still.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by:			
	(FWS Field Office)	(date)	(biologist)

Date of Survey: 07/14/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Crisp, Ann (last name, first name)

Site Location: **Placer, Ralston Ridge Pond, 10S 698480, 4319611 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** **BREEDING** (**NON-BREEDING**)

Survey Number (circle one): **1** **2** **3** **4** **5** **6** (**7**) **8**

Begin Time:	7:27 PM	**End Time:**	7:44 PM
Cloud Cover:	Clear	**Precipitation:**	None
Air Temp:	94°F	**Water Temp:**	71°F
Wind Speed:	3 mph	**Visibility Conditions:**	Good
Moon Phase:	Waning gibbous	**Humidity:**	Low

Description of weather conditions: Clear and warm.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	100s	O	larvae		100%
Pseudacris regilla	100s	O	metamorph		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Sierra garter snake (*Thamnophis couchii*) (adult) in water and along edge. Recent cattle grazing removed much of aquatic vegetation.

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: 07/14/2009 (mm/dd/yy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Crisp, Ann (last name, first name)

Site Location: **Placer, Ralston Ridge Pond, 10S 698480, 4319611 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) **BREEDING** (**NON-BREEDING**)

Survey Number (circle one): **1 2 3 4 5 6 7** (**8**)

Begin Time: 9:00 PM **End Time:** 9:10 PM

Cloud Cover: Clear **Precipitation:** None

Air Temp: 80°F **Water Temp:** 71°F

Wind Speed: 1 mph **Visibility Conditions:** Good

Moon Phase: Waning gibbous **Humidity:** Low

Description of weather conditions: Clear, calm, and warm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	27	O	metamorph		100%
Pseudacris regilla	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Sierra gartersnake (1) observed along shore and in pond.

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Horseshoe Pond C Field Survey Datasheets

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: 04/28/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **El Dorado, Pond "C" Horseshoe Bar, 10S 0693375, 4319879 (NAD83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: Placer County Water Agency – Middle Fork American River Project

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): (**1**) **2 3 4 5 6 7 8**

Begin Time: ~ 3 PM **End Time:** ~ 4 PM

Cloud Cover: 10% **Precipitation:** None

Air Temp: 64° – 69° F **Water Temp:** 50° F

Wind Speed: 3-4 mph **Visibility Conditions:** Good

Moon Phase: Waxing crescent **Humidity:** Low

Description of weather conditions: Clear, sunny day with scattered clouds, light wind.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	18	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: 05/05/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **El Dorado, Pond "C" Horseshoe Bar, 10S 0693375, 4319879 (NAD83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: Placer County Water Agency – Middle Fork American River Project

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** (**2**) **3** **4** **5** **6** **7** **8**

Begin Time: 9:15 PM **End Time:** 9:45 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 55°F **Water Temp:** 55°F

Wind Speed: 1-2mph **Visibility Conditions:** Good

Moon Phase: Waxing gibbous **Humidity:** Low

Description of weather conditions: Clear, cool, calm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	1	O	adult		100%
Lithobates catesbeianus	1	O	subadult		100%
Lithobates catesbeianus	11	O	larvae		100%
Bufo boreas	1	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____
(FWS Field Office) (date) (biologist)

Date of Survey: **05/19/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **El Dorado, Pond "C" Horseshoe Bar, 10S 0693375, 4319879 (NAD83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** (**3**) **4** **5** **6** **7** **8**

Begin Time: 3:35 PM **End Time:** 4:05 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 76°F **Water Temp:** 60°F

Wind Speed: 3 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: Clear, slight breeze.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	2	O	subadult		100%
Lithobates catesbeianus	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Approx. 5 minnow/pikeminnow, possibly hardhead.

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **05/19/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **El Dorado, Pond "C" Horseshoe Bar, 10S 0693375, 4319879 (NAD83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** (**4**) **5** **6** **7** **8**

Begin Time: 9:55 PM **End Time:** 10:20 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 68°F **Water Temp:** 60°F

Wind Speed: 1-2 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: Clear, slight breeze.

Brand name and model of light used to conduct surveys: Maglite, 4 D-Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	2	O	adults		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Crayfish, minnow/pikeminnow – possibly hardhead.

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by:	
	(FWS Field Office) (date) (biologist)

Date of Survey: **06/16/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Crisp, Ann (last name, first name

Site Location: **El Dorado, Pond "C" Horseshoe Bar, 10S 0693375, 4319879 (NAD83)**
(County, general location name, GPS coordinates)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** **(NIGHT)** **(BREEDING)** **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** **4** **(5)** **6** **7** **8**

Begin Time:	11:40 PM	**End Time:**	11:55 PM
Cloud Cover:	20%	**Precipitation:**	None
Air Temp:	56°F	**Water Temp:**	62°F
Wind Speed:	<1 mph	**Visibility Conditions:**	Good
Moon Phase:	Waxing crescent	**Humidity:**	High

Description of weather conditions: Partly cloudy, calm evening.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	14	O/H	adult		100%
Lithobates catesbeianus	24	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by:	
	(FWS Field Office) (date) (biologist)

Date of Survey: **06/24/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **El Dorado, Pond "C" Horseshoe Bar, 10S 0693375, 4319879 (NAD83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** **(NIGHT)** **(BREEDING)** **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** **4** **5** **(6)** **7** **8**

Begin Time: 11:00 PM **End Time:** 11:25 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 72°F **Water Temp:** 65°F

Wind Speed: 1 mph **Visibility Conditions:** Good

Moon Phase: Waxing crescent **Humidity:** Low

Description of weather conditions: Warm and calm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	16	O/H	adult		100%
Lithobates catesbeianus	1	O	subadult		100%
Lithobates catesbeianus	26	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by:			
	(FWS Field Office)	(date)	(biologist)

Date of Survey: 07/14/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Crisp, Ann (last name, first name)

Site Location: **El Dorado, Pond "C" Horseshoe Bar, 10S 0693375, 4319879 (NAD83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** **BREEDING** (**NON-BREEDING**)

Survey Number (circle one): **1** **2** **3** **4** **5** **6** (**7**) **8**

Begin Time:	6:22 PM	**End Time:**	6:45 PM
Cloud Cover:	Clear	**Precipitation:**	None
Air Temp:	96°F	**Water Temp:**	70°F
Wind Speed:	2-3 mph	**Visibility Conditions:**	Good
Moon Phase:	Waning gibbous	**Humidity:**	Low

Description of weather conditions: Clear and sunny.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	47	O	larvae		100%
Lithobates catesbeianus	4	O	metamorph		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: 07/14/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Crisp, Ann (last name, first name)

Site Location: **El Dorado, Pond "C" Horseshoe Bar, 10S 0693375, 4319879 (NAD83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: Placer County Water Agency – Middle Fork American River Project

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) **BREEDING** (**NON-BREEDING**)

Survey Number (circle one): **1 2 3 4 5 6 7** (**8**)

Begin Time:	10:20 PM	**End Time:**	10:37 PM
Cloud Cover:	Clear	**Precipitation:**	None
Air Temp:	80°F	**Water Temp:**	70°F
Wind Speed:	<1 mph	**Visibility Conditions:**	Good
Moon Phase:	Waning gibbous	**Humidity:**	Low

Description of weather conditions: Calm and warm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	18	O	larvae		100%
Lithobates catesbeianus	3	O	metamorph		100%
Lithobates catesbeianus	2	O	subadult		100%
Lithobates catesbeianus	9	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

unknown fish

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Horseshoe Pond E Field Survey Datasheets

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: 04/28/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **El Dorado, Pond "E", Horseshoe Bar, 10S 0694051, 4319686 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): (**1**) **2 3 4 5 6 7 8**

Begin Time:	~ 12 PM	**End Time:**	~ 1 PM
Cloud Cover:	10%	**Precipitation:**	None
Air Temp:	64°F–69°F	**Water Temp:**	~ 50°F
Wind Speed:	4 mph	**Visibility Conditions:**	Good
Moon Phase:	Waxing crescent	**Humidity:**	Low

Description of weather conditions: Clear, sunny day with scattered clouds, light wind.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBSERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	100s	O	larvae		100%
Lithobates catesbeianus	2	O	subadult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

sculpin (riffle?), river otter (*Lontra canadensis*) observed nearby at Pond D

Other notes, observations, comments, etc.:

Western pond turtle (*Actinemys marmorata*) (6) adults basking.

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: 05/05/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **El Dorado, Pond "E", Horseshoe Bar, 10S 0694051, 4319686 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: Placer County Water Agency – Middle Fork American River Project

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** (**2**) **3** **4** **5** **6** **7** **8**

Begin Time: 8:50 PM **End Time:** 9:10 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 60°F **Water Temp:** 55°F

Wind Speed: 1 - 2 **Visibility Conditions:** Good

Moon Phase: Waxing gibbous **Humidity:** Low

Description of weather conditions: Clear, calm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	1	O	adult		100%
Lithobates catesbeianus	3	O	subadult		100%
Lithobates catesbeianus	100s	O	larvae		100%
Pseudacris regilla	6	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **05/19/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **El Dorado, Pond "E", Horseshoe Bar, 10S 0694051, 4319686 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** (**3**) **4** **5** **6** **7** **8**

Begin Time: 3:05 PM **End Time:** 3:25 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 78°F **Water Temp:** 60°F

Wind Speed: 3 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: Clear, slight breeze.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **05/19/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **El Dorado, Pond "E", Horseshoe Bar, 10S 0694051, 4319686 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** (**4**) **5** **6** **7** **8**

Begin Time: 10:30 PM **End Time:** 10:45 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 67°F **Water Temp:** 60°F

Wind Speed: 1-2 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: Clear, calm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	8	O	adult		100%
Lithobates catesbeianus	2	O	subadult		100%
Bufo boreas	1	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **06/16/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Crisp, Ann (last name, first name

Site Location: **El Dorado, Pond "E", Horseshoe Bar, 10S 0694051, 4319686 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** **4** (**5**) **6** **7** **8**

Begin Time: 10:55 PM **End Time:** 11:15 PM

Cloud Cover: 20% **Precipitation:** None

Air Temp: 57°F **Water Temp:** 62°F

Wind Speed: 1-2 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: Clear, light breeze.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	13	O/H	adult		100%
Lithobates catesbeianus	100s	O	larvae		100%
Bufo boreas	1	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **06/24/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **El Dorado, Pond "E", Horseshoe Bar, 10S 0694051, 4319686 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** **4** **5** (**6**) **7** **8**

Begin Time:	10:35 PM	**End Time:**	10:55 PM
Cloud Cover:	Mostly clear	**Precipitation:**	None
Air Temp:	74°F	**Water Temp:**	65°F
Wind Speed:	1-2 mph	**Visibility Conditions:**	Good
Moon Phase:	Waxing crescent	**Humidity:**	Low

Description of weather conditions: Clear, calm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	5	O/H	adult		100%
Lithobates catesbeianus	5	O	subadult		100%
Lithobates catesbeianus	3	O	metamorph		100%
Lithobates catesbieanus	100s	O	larvae		100%
Bufo boreas	1	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Crayfish, green heron (*Butorides virescens*).

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (Date) (Biologist)

Date of Survey: 07/14/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Crisp, Ann (last name, first name)

Site Location: **El Dorado, Pond "E", Horseshoe Bar, 10S 0694051, 4319686 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** **BREEDING** (**NON-BREEDING**)

Survey Number (circle one): **1** **2** **3** **4** **5** **6** (**7**) **8**

Begin Time:	5:45 PM	**End Time:**	6:14 PM
Cloud Cover:	Clear	**Precipitation:**	None
Air Temp:	97°F	**Water Temp:**	70°F
Wind Speed:	2-3 mph	**Visibility Conditions:**	Good
Moon Phase:	Waning gibbous	**Humidity:**	Low

Description of weather conditions: Clear and sunny.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	15	O	adult		100%
Lithobates catesbeianus	10	O	subadult		100%
Lithobates catesbeianus	75	O	metamorph		100%
Lithobates catesbeianus	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by:			
	(FWS Field Office)	(date)	(biologist)

Date of Survey: 07/14/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Crisp, Ann (last name, first name)

Site Location: **El Dorado, Pond "E", Horseshoe Bar, 10S 0694051, 4319686 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) **BREEDING** (**NON-BREEDING**)

Survey Number (circle one): **1** **2** **3** **4** **5** **6** **7** (**8**)

Begin Time:	10:50 PM	**End Time:**	11:12 PM
Cloud Cover:	Clear	**Precipitation:**	None
Air Temp:	73°F	**Water Temp:**	70°F
Wind Speed:	Calm	**Visibility Conditions:**	Good
Moon Phase:	Waning gibbous	**Humidity:**	High

Description of weather conditions: Clear, calm, and warm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	17	O	adult		100%
Lithobates catesbeianus	100s	O	larvae		100%
Lithobates catesbeianus	87	O	metamorph		100%
Lithobates catesbeianus	5	O	subadult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Horseshoe Pond F Field Survey Datasheets

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: 04/28/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **El Dorado, Pond "F", Horseshoe Bar, 10S 0693905, 4319632 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): (**1**) **2 3 4 5 6 7 8**

Begin Time:	~ 11 AM	**End Time:**	~ 12 PM
Cloud Cover:	10%	**Precipitation:**	None
Air Temp:	64°F–69°F	**Water Temp:**	~ 50°F
Wind Speed:	4 mph	**Visibility Conditions:**	Good
Moon Phase:	Waxing crescent	**Humidity:**	Low

Description of weather conditions: Clear, sunny day with scattered clouds, light wind.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBSERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	1	O	adult		100%
Lithobates catesbeianus	1	O	subadult		100%
Lithobates catesbeianus	84	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: 05/05/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Graf, Peter (last name, first name)

Site Location: **El Dorado, Pond "F", Horseshoe Bar, 10S 0693905, 4319632 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** **(NIGHT)** **(BREEDING)** **NON-BREEDING**

Survey Number (circle one): **1** **(2)** **3** **4** **5** **6** **7** **8**

Begin Time:	8:15 PM	**End Time:**	8:45 PM
Cloud Cover:	Mostly clear	**Precipitation:**	None
Air Temp:	60°F	**Water Temp:**	55°F
Wind Speed:	4 mph	**Visibility Conditions:**	Good
Moon Phase:	Waxing gibbous	**Humidity:**	Low

Description of weather conditions: Clear, cool, slight breeze.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	1	O	adult		100%
Lithobates catesbeianus	1	O	subadult		100%
Lithobates catesbeianus	27	O	larvae		100%
Pseudacris regilla	4	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by:			
	(FWS Field Office)	(date)	(biologist)

Date of Survey: 05/19/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **El Dorado, Pond "F", Horseshoe Bar, 10S 0693905, 4319632 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** (**3**) **4** **5** **6** **7** **8**

Begin Time:	2:45 PM	**End Time:**	3:00 PM
Cloud Cover:	Mostly clear	**Precipitation:**	None
Air Temp:	78°F	**Water Temp:**	60°F
Wind Speed:	3 mph	**Visibility Conditions:**	Good
Moon Phase:	Waning crescent	**Humidity:**	High

Description of weather conditions: Clear, slight breeze.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	2	H	adult		100%
Lithobates catesbeianus	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **05/19/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **El Dorado, Pond "F", Horseshoe Bar, 10S 0693905, 4319632 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** (**4**) **5** **6** **7** **8**

Begin Time: 10:50 PM **End Time:** 11:10 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 65°F **Water Temp:** 60°F

Wind Speed: 1-2 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: Clear, calm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	4	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **06/16/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Crisp, Ann (last name, first name

Site Location: **El Dorado, Pond "F", Horseshoe Bar, 10S 0693905, 4319632 (NAD 83)**
(County, general location name, GPS coordinates)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** **(NIGHT)** **(BREEDING)** **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** **4** **(5)** **6** **7** **8**

Begin Time: 10:20 PM **End Time:** 10:43 PM

Cloud Cover: Clear **Precipitation:** None

Air Temp: 58°F **Water Temp:** 63°F

Wind Speed: <1 mph **Visibility Conditions:** Good

Moon Phase: Waning crescent **Humidity:** High

Description of weather conditions: Clear, calm evening.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	9	O/H	adult		100%
Lithobates catesbeianus	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.: Mallard (*Anas platyrhynchos*) hen nesting along shore.

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (date) (biologist)

Date of Survey: **06/24/2009** (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name

Survey Biologist: Graf, Peter (last name, first name

Site Location: **El Dorado, Pond "F", Horseshoe Bar, 10S 0693905, 4319632 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey Number (circle one): **1** **2** **3** **4** **5** (**6**) **7** **8**

Begin Time: 10:05 PM **End Time:** 10:30 PM

Cloud Cover: Mostly clear **Precipitation:** None

Air Temp: 74°F **Water Temp:** 65°F

Wind Speed: <1 mph **Visibility Conditions:** Good

Moon Phase: Waxing crescent **Humidity:** Low

Description of weather conditions: Clear, calm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	23	O/H	adult		100%
Lithobates catesbeianus	5	O	subadult		100%
Lithobates catesbeianus	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

crayfish

Other notes, observations, comments, etc.:

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by:			
	(FWS Field Office)	(date)	(biologist)

Date of Survey: 07/14/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Crisp, Ann (last name, first name)

Site Location: **El Dorado, Pond "F", Horseshoe Bar, 10S 0693905, 4319632 (NAD 83)**
(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: Placer County Water Agency – Middle Fork American River Project

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): (**DAY**) **NIGHT** **BREEDING** (**NON-BREEDING**)

Survey Number (circle one): **1** **2** **3** **4** **5** **6** (**7**) **8**

Begin Time:	5:10 PM	**End Time:**	5:30 PM
Cloud Cover:	Clear	**Precipitation:**	None
Air Temp:	97°F	**Water Temp:**	70°F
Wind Speed:	4 mph	**Visibility Conditions:**	Good
Moon Phase:	Waning gibbous	**Humidity:**	Low

Description of weather conditions: Sunny, clear.

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	21	O	adult		100%
Lithobates catesbeianus	2	O	subadult		100%
Lithobates catesbeianus	67	O	metamorph		100%
Lithobates catesbeianus	100s	O	larvae		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Other notes, observations, comments, etc.:

River otter (*Lontra canadensis*) scat along "trail" to pond.

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

Survey results reviewed by: _____

(FWS Field Office) (Date) (Biologist)

Date of Survey: 07/14/2009 (mm/dd/yyyy)

Survey Biologist: Alvarez, Jeff (last name, first name)

Survey Biologist: Crisp, Ann (last name, first name)

Site Location: **El Dorado, Pond "F", Horseshoe Bar, 10S 0693905, 4319632 (NAD 83)**

(County, general location name, UTM Coordinates or Lat./Long. or T-R-S)

****ATTACH A MAP (include habitat types, important features, and species location)****

Proposed project name: **Placer County Water Agency – Middle Fork American River Project**

Brief description of proposed action:

PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project designed to control and conserve waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams. The MFP system consists of two major storage reservoirs, five smaller regulating reservoirs and diversion pools, and five powerhouses. The MFP supplies water for homes, industry, and agriculture within western Placer County. PCWA operates the MFP under the terms of the FERC License No. 2079. The current license will expire on February 28, 2013, and PCWA will be seeking a new license for the MFP pursuant to the FERC's ILP regulations.

Type of Survey (circle one): **DAY** **(NIGHT)** **BREEDING** **(NON-BREEDING)**

Survey Number (circle one): **1** **2** **3** **4** **5** **6** **7** **(8)**

Begin Time:	11:20 PM	**End Time:**	11:40 PM
Cloud Cover:	Clear	**Precipitation:**	None
Air Temp:	72°F	**Water Temp:**	70°F
Wind Speed:	1-2 mph	**Visibility Conditions:**	Good
Moon Phase:	Waning gibbous	**Humidity:**	Low

Description of weather conditions: Clear, warm, and calm.

Brand name and model of light used to conduct surveys: Maglite, 4D Cell

Were binoculars used for the surveys (circle one)**:** (YES) NO

Brand, model, and power of binoculars: Steiner, 8x42

AMPHIBIAN OBERVATIONS

Species	# of Indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Lithobates catesbeianus	100s	O	larvae		100%
Lithobates catesbeianus	24	O	metamorph		100%
Lithobates catesbeianus	1	O	subadult		100%
Lithobates catesbeianus	19	O	adult		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Green heron (*Butorides virescens*) (2) flushed from willows.

Other notes, observations, comments, etc.:

Mallard (*Anas platyrhynchos*) hen nesting along shore.

Necessary Attachments:

1. All field notes and other supporting documents.
2. Site photographs.
3. Maps with important habitat features and species locations.

APPENDIX D

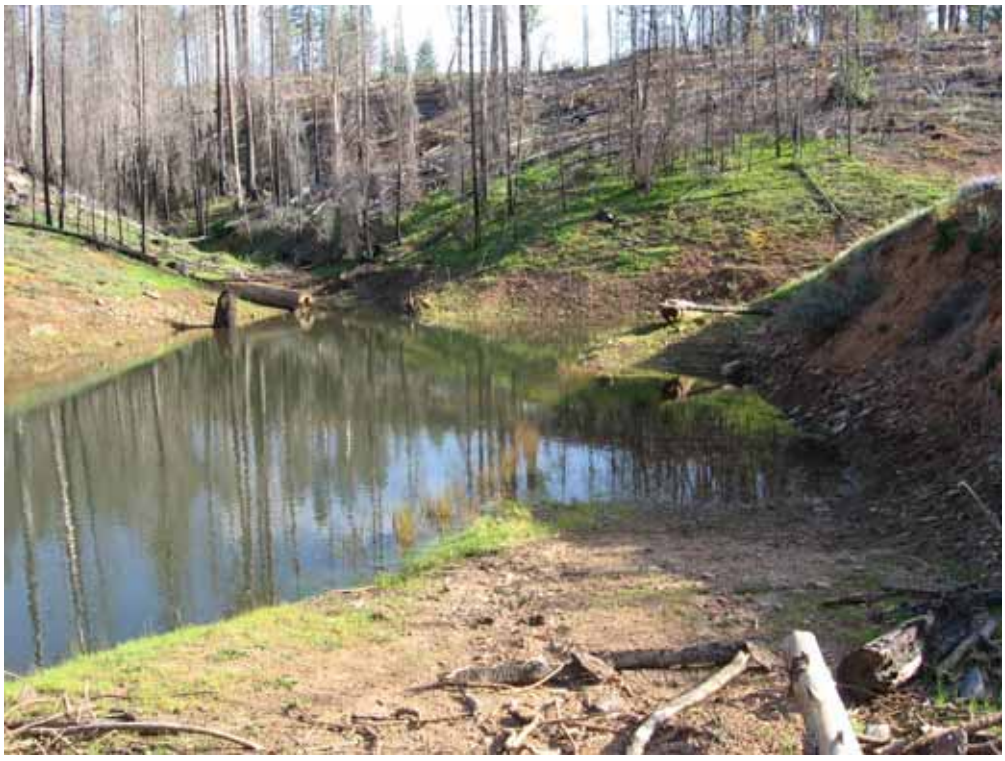
California Red-legged Frog Survey Photographs

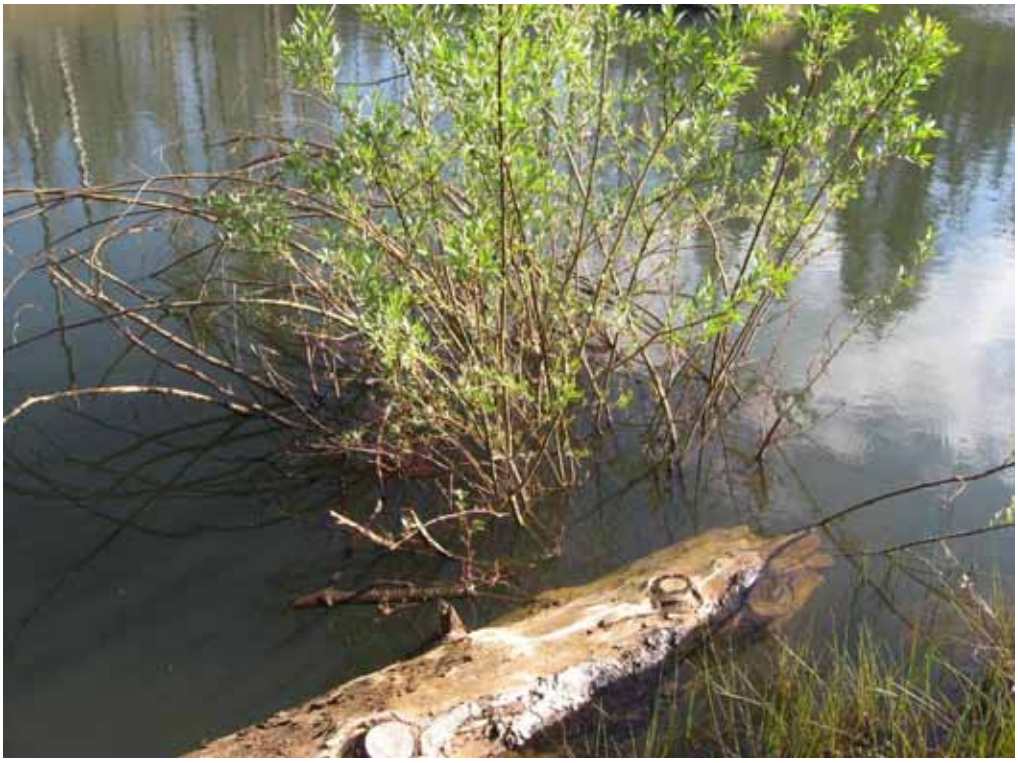
TABLE OF CONTENTS

Page

Representative Habitat Photographs at CRLF Survey Ponds

Ralston Ridge Pond



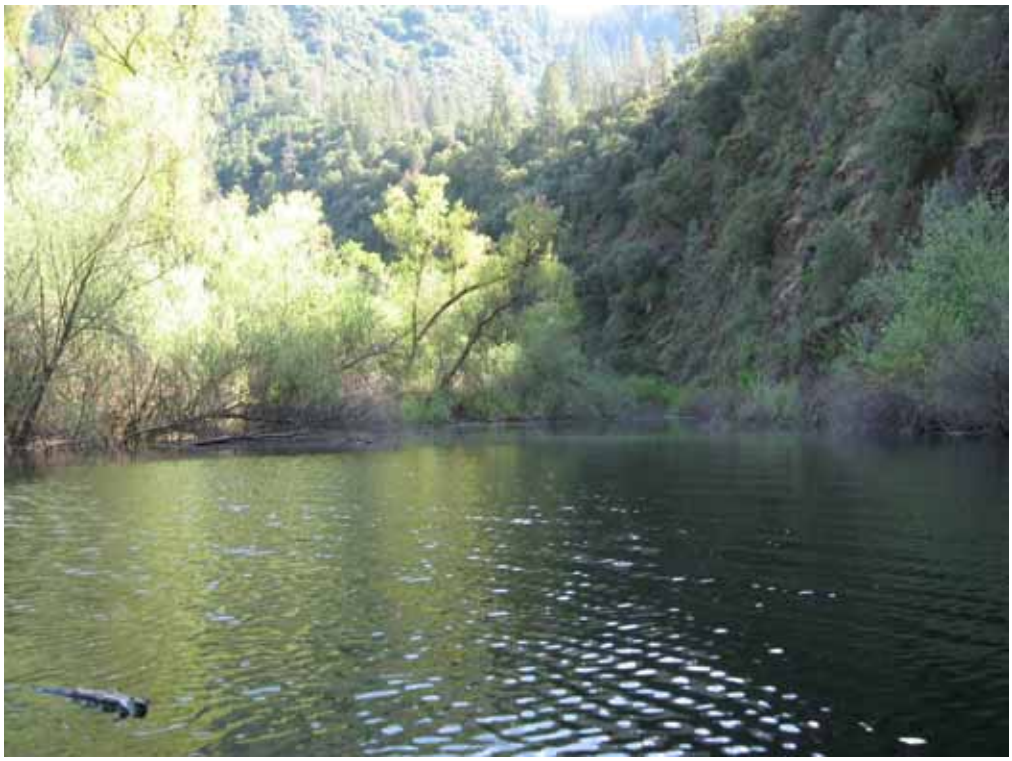


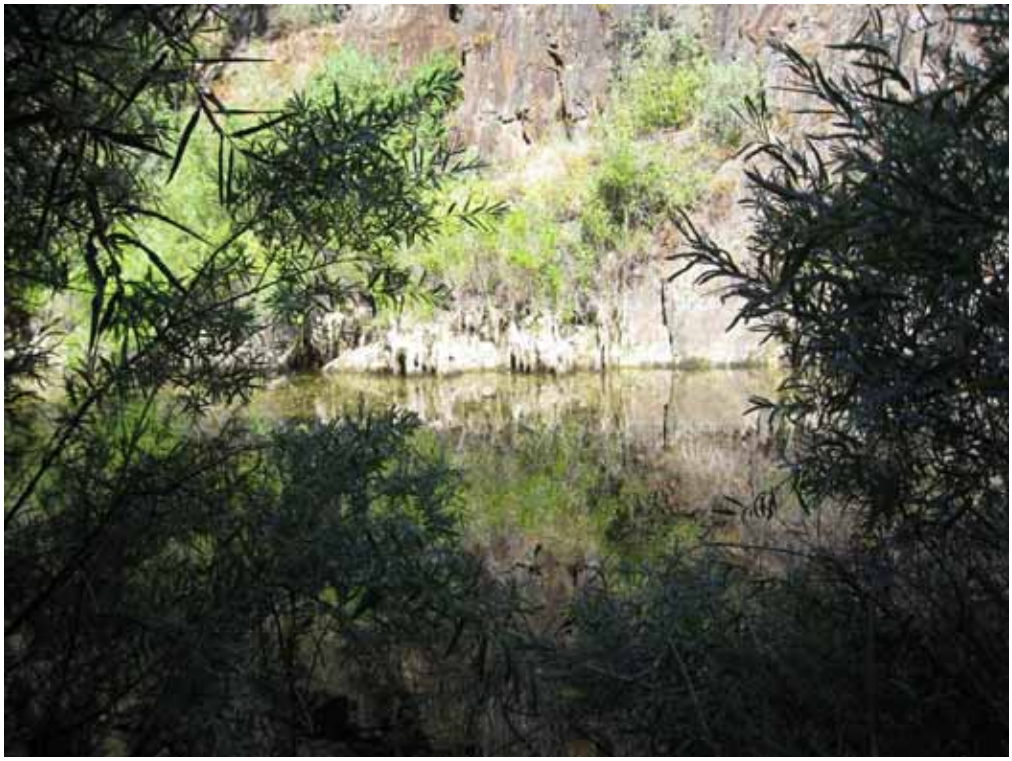
Representative Habitat Photographs at CRLF Survey Ponds

Ralston Ridge Pond

Representative Habitat Photographs at CRLF Survey Ponds

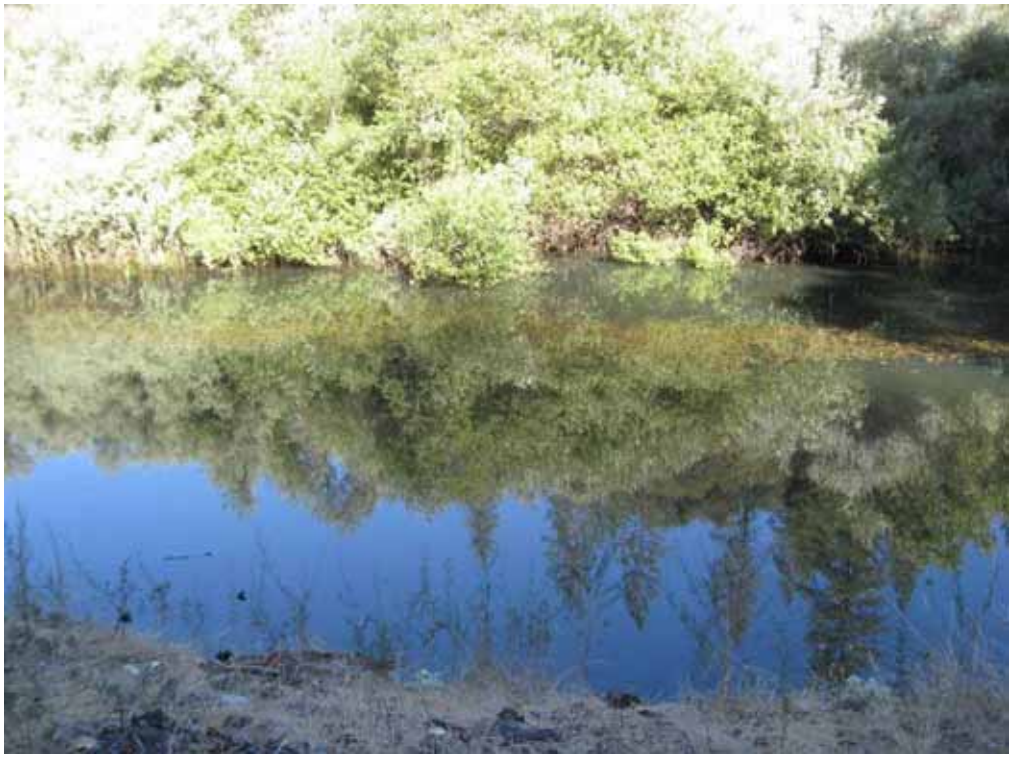
Horseshoe Bar Pond C





Representative Habitat Photographs at CRLF Survey Ponds

Horseshoe Bar Pond E



Representative Habitat Photographs at CRLF Survey Ponds

Horseshoe Bar Pond F