



**El Dorado Hydroelectric Project
FERC Project No. 184**

Mountain Yellow-Legged Frog Monitoring Plan

EL DORADO IRRIGATION DISTRICT
2890 Mosquito Road
Placerville, CA 95667

December 2010
Version 2.0

This study plan has been developed to satisfy the amphibian monitoring requirements for Mountain Yellow-legged Frog (MYLF; now Sierra Nevada Yellow-legged Frog (*Rana sierrae*)¹) as required by the Federal Energy Regulatory Commission license for the El Dorado Hydroelectric Project No. 184 (Project 184).

1.0 License Requirements

The Project 184 Monitoring Program² defines the specific monitoring requirements for MYLF:

Amphibians (Habitat Evaluation & Determination of Species Presence/Distribution)

Mountain Yellow-legged Frog

Method: Protocol surveys for sensitive species using the procedures of CDFG (2001) in a subsample of appropriate habitat types to document species presence and distribution. Surveys would focus on presence of the larval stage at sites by periodically surveying reaches of known presence during spring/summer. If CDFG collects data associated with Lake Aloha and associated waters, that information can be used to satisfy this requirement FS, ERC, and SWRCB review and approval.

Mountain Yellow-legged Frog Monitoring Sites:

- Echo Lake – Camp Harvey Tributary and associated ponds (EID site 440 T/L)
- Silver Lake (EID site 750LB)
- Camp Silverado (EID site 753IT)
- Caples Lake
- Lake Aloha and associated downstream ponds and habitats

Frequency: For the sites listed above, years 5, 10, 15, 20, 25, 30.
For Lake Aloha ponds, year 1 and after any spill.

Rationale: Determination of presence and distribution of sensitive amphibian species is important in evaluating long-term population trends. Monitoring at the end of each 5-year period provides an index of changes in amphibian populations. Monitoring to ensure trout are not currently in the ponds below Lake Aloha from water flowing over saddle dams 6 and 7 in the past and preventing water from

¹ In 2008, the Society for the Study of Amphibians and Reptiles recognized two species, *Rana muscosa* - Southern Mountain Yellow-legged Frog (MYLF) and *Rana sierrae* - Sierra Nevada Yellow-legged Frog (SNYLF). SNYLF is the species that this Plan addresses; however, this Plan uses the nomenclature MYLF to be consistent with the terminology used in the Project 184 license documents.

² Section 7 of the El Dorado Relicensing Settlement Agreement, U.S. Forest Service 4(e) Condition No. 37, and California State Water Resources Control Board Section 401 Clean Water Act Water Quality Certification Condition No. 13

overtopping those saddle dams in the future would help in the recovery of the Mountain Yellow-legged Frog from Project effects.

2.0 Background

MYLF surveys were conducted during the Project 184 re-licensing process in 2002 and additional surveys were conducted in 2004 (ECORP, 2002; ECORP 2005). In 2002, MYLF were observed at 13 of 68 sites surveyed. During 2004 surveys, MYLF were observed at 3 of 6 sites surveyed. Refined site descriptions for future survey efforts were recommended based on the results of these efforts (ECORP 2005).

MYLF surveys were conducted in 2007 in conjunction with trout removal efforts following a spill over the auxiliary dams at Lake Aloha in 2006 (GANDA 2008). Trout removal and MYLF surveys were also conducted in 2010, following a spill during snowmelt (GANDA 2010; currently in draft).

3.0 Study Plan Objective

The objective of this monitoring effort is to document the presence and general distribution of MYLF populations in selected areas to evaluate long-term population trends.

4.0 Survey Locations

The Project 184 Monitoring Program specifies five locations for conducting MYLF monitoring:

- Echo Lake – Camp Harvey Tributary and associated ponds (EID site 440 T/L)
- Silver Lake (EID site 750LB)
- Camp Silverado (EID site 753IT)
- Caples Lake
- Lake Aloha and associated downstream ponds and habitats

These site descriptions were refined and additional sites added during discussions at the August 23, 2005, Ecological Resources Committee (ERC) meeting as described in Table 1 and illustrated in Figures 1-4.

Surveys of the ponds and habitats downstream of Lake Aloha will encompass areas previously surveyed in 2007 and 2010. A detail of these locations are depicted in Figure 5.

Table 1. MYLF refined site descriptions for past and future monitoring efforts.

Mountain Yellow-legged Frog Sampling Summary					
	2002	Settlement Agreement	2004	Future	Refined Site Description
Echo Lake – Camp Harvey and assoc. ponds (440 T/L)	Y	Y	Y	Y	Up to 0.5 mile from confluence depending on suitable habitat
Silver Lake (750LP)	Y	Y	Y	Y	Southern and eastern shorelines
Camp Silverado (753IT)	Y	Y	Y	Y	Up to 0.5 mile from confluence depending on suitable habitat
Unnamed Silver Lake Tributary (752IT)				Y	Up to 0.5 mile from confluence depending on suitable habitat
Caples Lake (895LP)	Y	Y	Y	Y	Southern shoreline
Lake Aloha and assoc. downstream ponds (550LP)	Y	Y	Y	Y	Southern shoreline; add tributary along western shoreline; coordinate ponds with CDFG
Upper Echo Lake (455LP)	Y		Y	Y	Vicinity of Camp Harvey Tributary
Emigrant Creek (897IT)	Y			Y	Up to 1.0 mile from confluence depending on suitable habitat

Source: August 23, 2005 ERC meeting notes available online at http://www.project184.org/doc_lib/documents/2006/ERC/ERC_Minutes20050823.pdf

5.0 Schedule

Previous surveys (ECORP, 2002; ECORP 2005) were conducted from July through September. The District anticipates conducting surveys during this same time period to be consistent with the previous surveys. Surveys of the ponds and habitats downstream of Lake Aloha are required following a spill event and will be conducted in the same year that the spill occurs. If feasible, MYLF surveys will be conducted in conjunction with efforts to remove trout from the ponds and habitats downstream of the auxiliary dams at Lake Aloha.³

6.0 Methods / Data Collection

The Project 184 license specifies “protocol surveys for sensitive species using the procedures of CDFG (2001) in a subsample of appropriate habitat types to document species presence and distribution.” Surveys conducted under this plan will utilize updated visual encounter survey (VES) protocols following the methodology described in the California Department of Fish & Game Sierra Nevada Fish and Amphibian Survey Protocols (CDFG 2009) using the form of datasheet provided in Appendix A. All appropriate habitat types will be surveyed at each site to document species presence and distribution.

³ Trout removal activities described in Project 184 Lake Aloha Downstream Ponds Trout Removal Plan (EID, 2007)

Additionally, the Project 184 specifies that “surveys would focus on presence of the larval stage at sites by periodically surveying reaches of known presence during spring/summer.” Surveys conducted under this plan will utilize VES protocols to detect all amphibian life stages. All observed MYLF and other herpetofauna will be identified to species and life stage where possible. The activity, GPS location, substrate, and habitat type for each observation will also be described. This data is intended to be consistent with previous monitoring efforts. To prevent the potential spread of disease, MYLF will not be handled during surveys.

6.1 Decontamination Procedures

In an effort to minimize the spread of pathogens that may be transferred as result of survey activities, field crews will follow a decontamination procedure for disinfecting equipment and clothing after entering a pond and before entering a new pond, unless the wetlands are hydrologically connected to one another. The guidance outlined in Appendix B - Recommended Equipment Decontamination Procedures from the U.S. Fish and Wildlife’s Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (USFWS, 2005), or subsequent improved protocol, will be utilized by survey crews conducting monitoring under this Plan. The decontamination procedure is included in this Plan as Appendix B.

7.0 Reporting

The data collected under this plan will be compiled into a report and distributed to the FS, ERC, and SWRCB for review and consideration at least two weeks prior to the annual ERC meeting. The report will include discussion appropriate to results and supportive of analyses and conclusions will be provided. All reports will be prepared in a format so that they can easily be reviewed by the ERC and filed with the FERC after approval.

A summary of the findings of the monitoring effort and an electronic copy of the report will be included in the Project 184 annual monitoring report, which the District is required to file with FERC by June 30 of each year. The District will distribute the draft annual monitoring report to the FS, ERC, and SWRCB to review at least 30 days prior to filing with FERC.

8.0 Literature Cited

CDFG 2001. Fish and Amphibian Inventory Data Sheet Instructions. California Department of Fish & Game Fish/Amphibian Survey Protocols - Version 1.1, July 17, 2001.

CDFG 2009. Sierra Nevada Fish and Amphibian Inventory Data Sheet Instructions. California Department of Fish & Game Fish/Amphibian Survey Protocols - Version 2.4, April 10, 2009.

ECORP 2002. Special Status Amphibian Surveys for El Dorado Irrigation District Project 184. December 6, 2002. Available online at:

http://www.project184.org/doc_lib/documents/2010/2002_AmphibianMonitoringReport.pdf

ECORP 2005. Results of the 2004 (Year 1) Amphibian Monitoring Program for Foothill Yellow-legged Frog and Mountain Yellow-legged Frog, El Dorado Hydroelectric Project (FERC Project No. 184). June 22, 2005. Available online at:

http://www.project184.org/doc_lib/documents/2008/2004AmphibianMonitoringProgram.pdf

EID 2007. El Dorado Irrigation District Project 184 Lake Aloha Downstream Ponds Trout Removal Plan. September 7, 2007. Available online at:

http://www.project184.org/doc_lib/documents/2008/C33LakeAlohaDownstreamPondsTroutRemovalPlan.pdf

GANDA 2008. Final Report 2007 Lake Aloha Mountain Yellow-legged Frog Surveys El Dorado Hydroelectric Project (FERC No.184). February 2008. Available online at:

http://www.project184.org/doc_lib/documents/2008/2007LakeAlohaMountainYellow-LeggedFrogSurveys.pdf

GANDA 2010. Final Report 2010 Lake Aloha Mountain Yellow-legged Frog Surveys El Dorado Hydroelectric Project (FERC No.184). December 2010 (currently in draft).

USFWS 2005. U.S. Fish and Wildlife Service, Appendix B – Recommended Equipment Decontamination Procedures from Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog, August 2005. Available online at:

http://www.fws.gov/sacramento/es/documents/crf_survey_appendix_B_decontamination.pdf

FIGURES

Figure 1. MYLF survey sites near Echo Lake

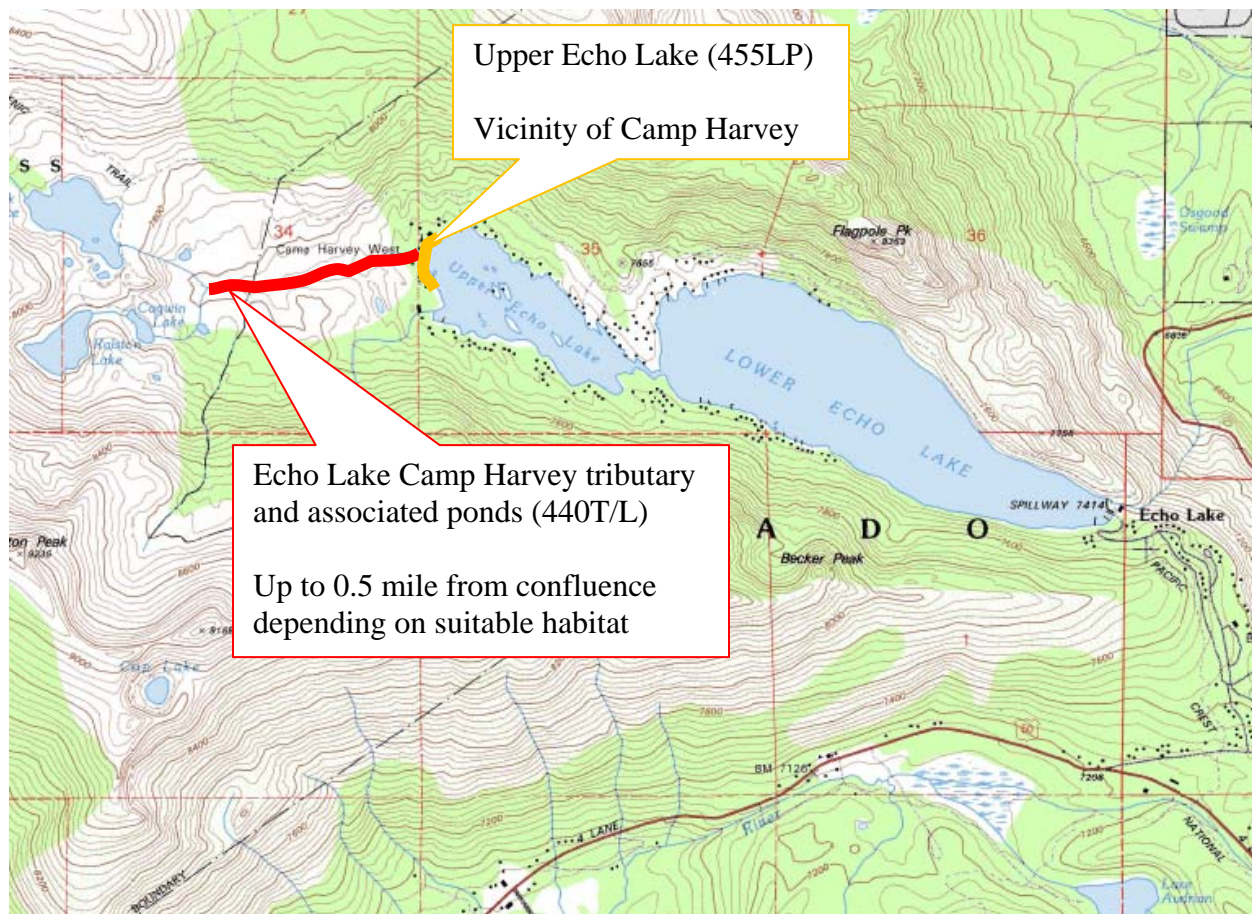


Figure 2. MYLF survey sites near Silver Lake

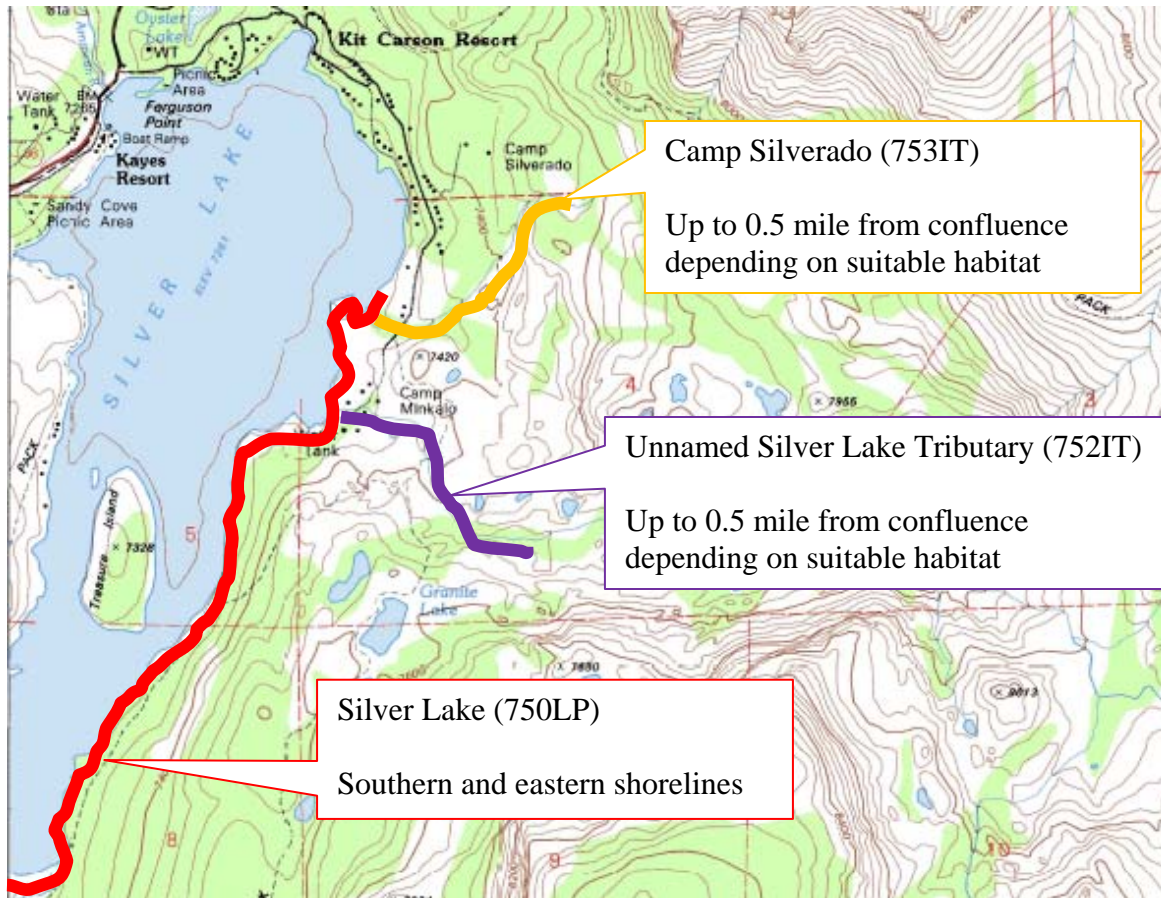


Figure 3. MYLF survey sites near Caples Lake

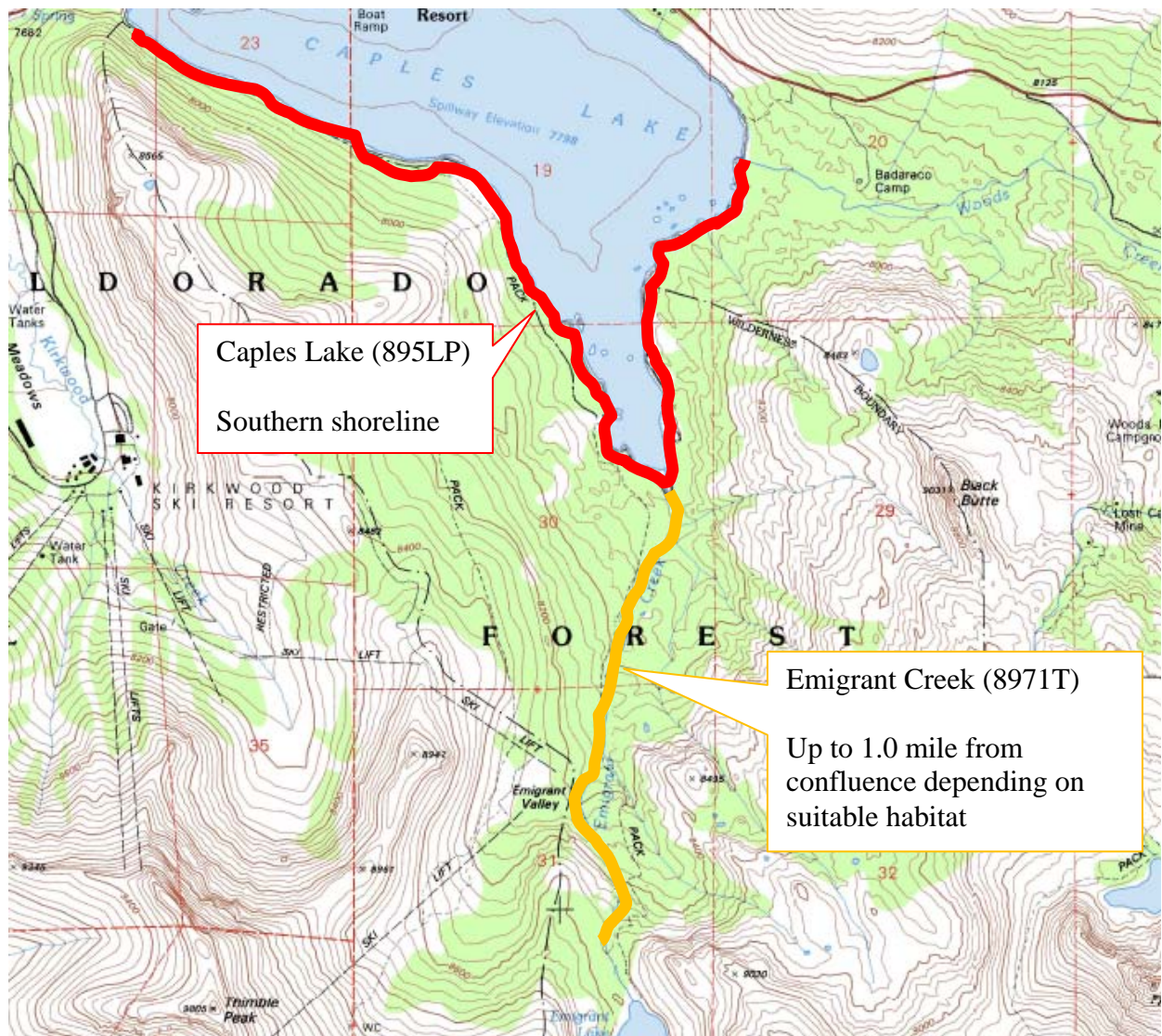


Figure 4. MYLF survey sites near Lake Aloha

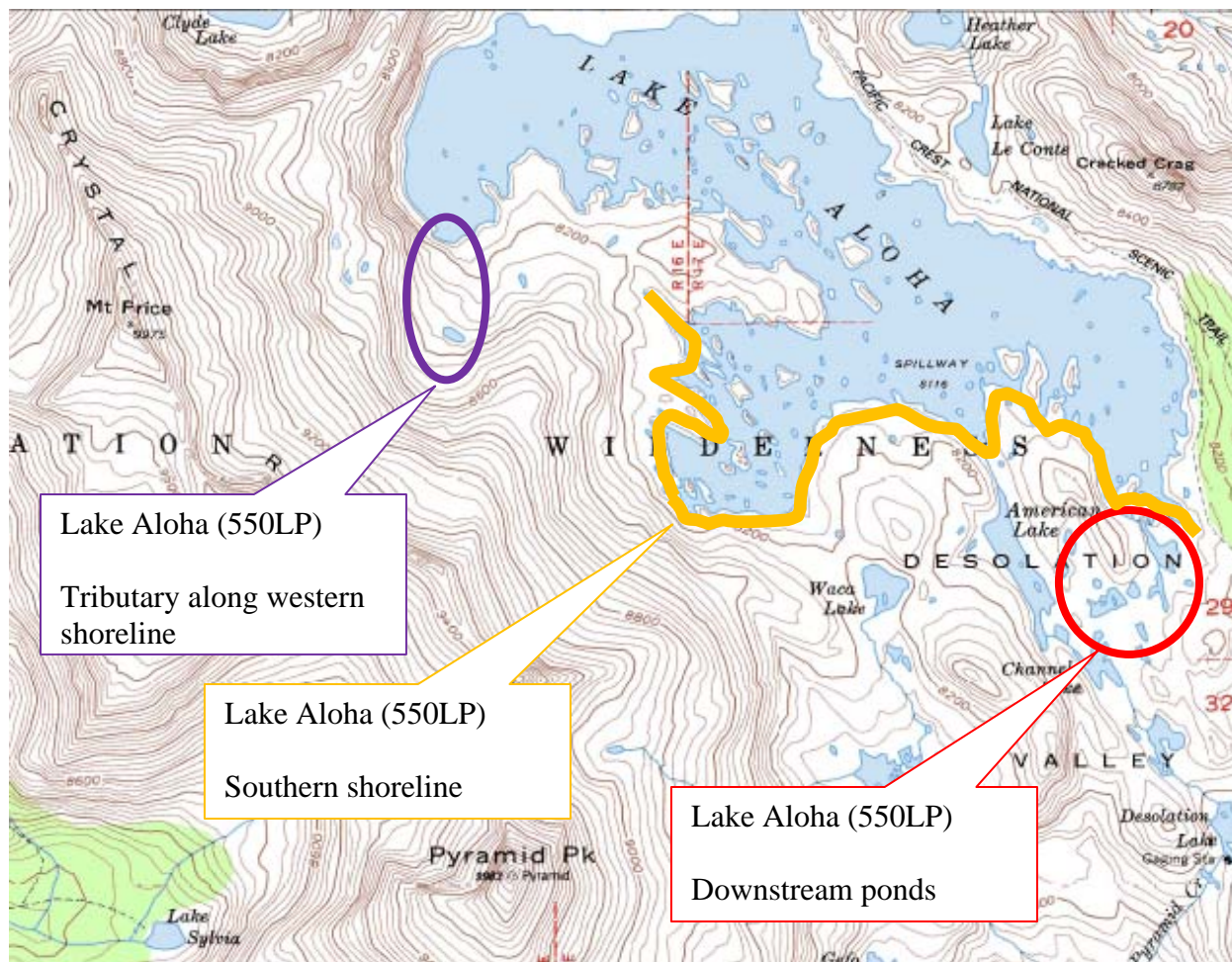


Figure 5. Detail map of survey locations downstream of Lake Aloha Auxiliary Dams

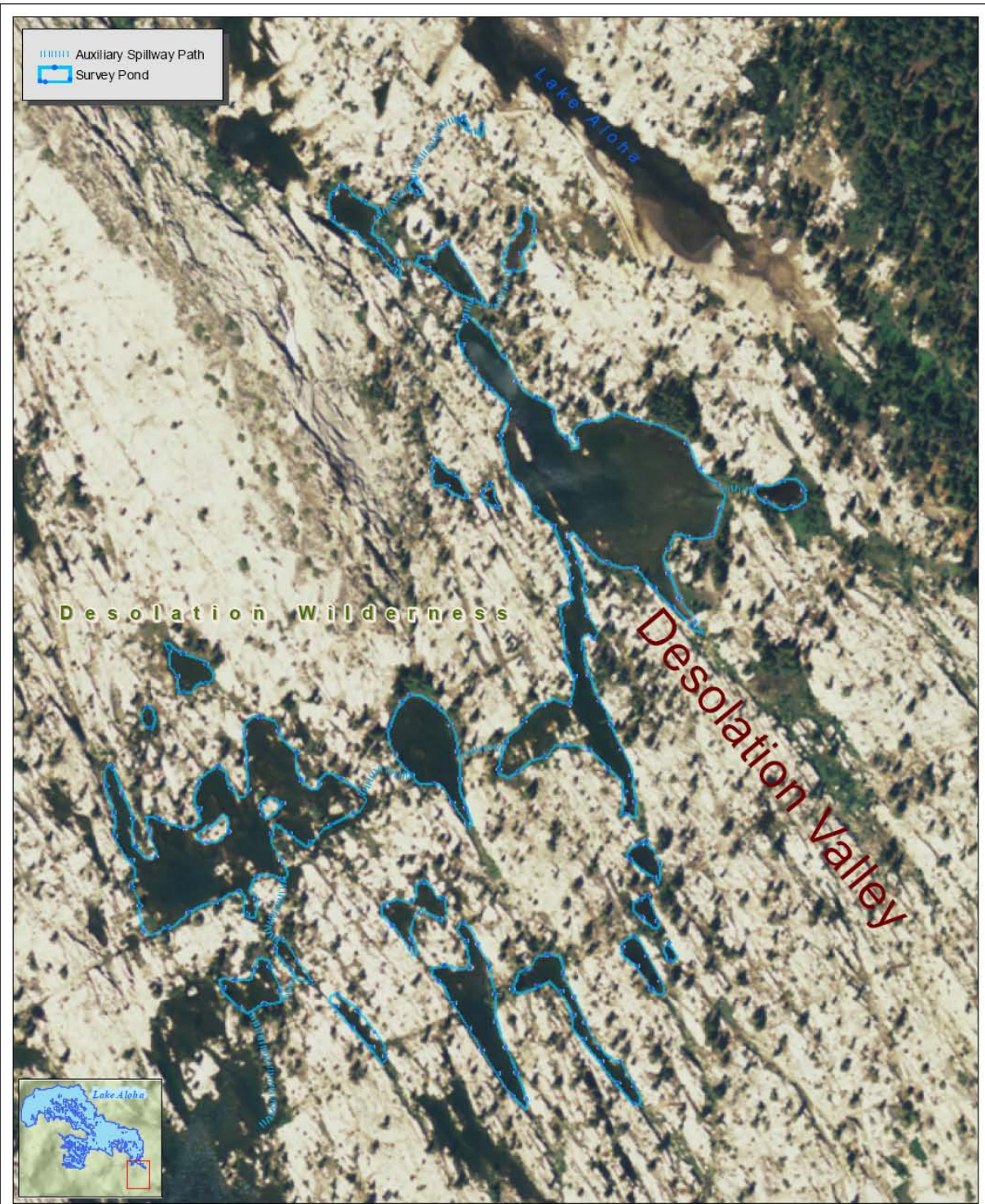
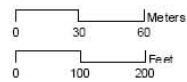


Figure 5. Sampling Locations below Lake Aloha Auxiliary Dams

El Dorado County, California



Appendix A:

CDFG Sierra Nevada Amphibian Survey Datasheet

SNYLF Amphibian Data Sheet - 2009

Site ID:	Date: (mmm-dd-yy)	Water type: Lake Unmapped pond Stream Marsh Spring seep				Perennial Ephemeral	
		If not sampled, reason: stream widening frozen, dry, or not found part of another water body					
Lake Name: (from map)		Planning Watershed: (from "Lakes Checklist")		Location (use common language)			
County:	Elevation: m ft	East UTM:			North UTM: (only for lakes w/o a site ID; obtain from GPS unit)		
Topographic Map (7.5):	Weather: Clear Overcast Rain Snow	Wind: Calm Light Strong	pH: source:	Max. lake depth (m):	Team members:		
Amphibian observer(s):		Survey start time: End time (hhmm):		Total survey duration: (min)		Weather: Clear Overcast Rain Snow	
		Wind: Calm Light Strong					
<i>Stream only:</i>		Start East UTM	Start North UTM	End East UTM	End North UTM	Stream order:	Color: Clear Stained
							Turbidity: Clear Cloudy
Amphibian/reptile species		# adults	# subadults	# larvae	# egg masses	Comments	Survey Method
Calling? Y N Voucher? Y N #____							Visual Trapped Aural Hand Collected Dip Net/Seine
Calling? Y N Voucher? Y N #____							Visual Trapped Aural Hand Collected Dip Net/Seine
Calling? Y N Voucher? Y N #____							Visual Trapped Aural Hand Collected Dip Net/Seine
Calling? Y N Voucher? Y N #____							Visual Trapped Aural Hand Collected Dip Net/Seine
Calling? Y N Voucher? Y N #____							Visual Trapped Aural Hand Collected Dip Net/Seine
Water Temp. (.5m from shore, 10cm deep):		@	C or F		Air Temp. (1m above water):		@ C or F

amphibians: Sierra Nevada yellow-legged frog (RASI), Sierran treefrog (PSSI), CA newt (TATO), bullfrog (LICA), long-toed salamander (AMMA)

reptiles: W. aquatic garter snake (THCO) W. terrestrial garter snake (THEL) common garter snake (THSI) W. pond turtle (CLMA)

fish: rainbow trout (RT), golden trout (GT), cutthroat trout (CT), brown trout (BN), brook trout (BK), hybrids (GT x RT, CT x RT)

Drawing of lake perimeter, inlets, outlets, in-lake spawning areas, fairy shrimp locations, and areas of special interest: Reference areas of special interest with photo numbers and provide comments describing photo features.	Photo Numbers
If lake is not shown on topo map, give approximate dimensions (m): _____	

Description of inlets, including barriers, spawning areas, and other features of interest: Reference areas of special interest with photo numbers and provide comments describing photo features.	Photo Numbers

Description of outlets, including barriers, spawning areas, and other features of interest: Reference areas of special interest with photo numbers and provide comments describing photo features.	Photo Numbers

Fish survey:	Visual	Nets	Justification (if visual):
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PLEASE Return to: Curtis Milliron, Ca. Dept. of Fish and Game (760) 872-1125; 407 W. Line Street Bishop, CA 93514
 May, 2001 Version 1.0 J:YOSEdatasheet00a

Field review _____ Copied _____ Entered _____ Proofed _____

Appendix B: Recommended Equipment Decontamination Procedures

In an effort to minimize the spread of pathogens that may be transferred as result of activities, surveyors should follow the guidance outlined below for disinfecting equipment and clothing after entering a pond and before entering a new pond, unless the wetlands are hydrologically connected to one another:

- i. All organic matter should be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water or potentially contaminated sediments. Cleaned items should be rinsed with clean water before leaving each study site.
- ii. Boots, nets, traps, hands, etc. should be scrubbed with either a 75% ethanol solution, a bleach solution (0.5 to 1.0 cup per 1.0 gallon of water), Quat-128™ (1:60), or a 6% sodium hypochlorite 3 solution. Equipment should be rinsed clean with water between study sites. Cleaning equipment in the immediate vicinity of a pond or wetland should be avoided (e.g., clean in an area at least 100 feet from aquatic features). Care should be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.
- iii. Used cleaning materials (liquids, etc.) should be disposed of safely, and if necessary, taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.
- iv. Additionally, the surveyors shall implement the following when working at sites with known or suspected disease problems: disposable gloves should be worn and changed between handling each animal. Gloves should be wetted with water from the site or distilled water prior to handling any amphibians. Gloves should be removed by turning inside out to minimize cross-contamination.

134 FERC ¶ 62,079
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

El Dorado Irrigation District

Project No. 184-129

ORDER MODIFYING AND APPROVING MOUNTAIN YELLOW-LEGGED
FROG MONITORING PLAN UNDER ARTICLE 401, 4(e) CONDITION NO. 37, AND
WATER QUALITY CERTIFICATE CONDITION NO. 13

(Issued January 27, 2011)

1. On January 10, 2011, El Dorado Irrigation District (licensee) filed a Mountain Yellow-Legged Frog Monitoring Plan (Plan) to fulfill its requirement under article 401, the U.S. Forest Service (FS) Section 4(e) Condition No. 37, and the Water Quality Certificate Condition No. 13 of the license for the El Dorado Hydroelectric Project, FERC No. 184.¹ The project is located on the South Fork of the American River and its tributaries in El Dorado, Alpine, and Amador Counties, California, and occupies federal lands administered by the U.S. Forest Service (FS).

BACKGROUND AND REQUIREMENTS

2. Ordering paragraph (D) of the project license specifies that the license is subject to the applicable conditions submitted by Department of the Agriculture (DOA) under Section 4(e) of the Federal Power Act. DOA's Condition No. 37, as set forth in appendix A of the license, discusses a FS-approved final monitoring plan for mountain yellow-legged frog using the procedures of the California Department of Fish and Game (CDFG) protocol surveys for sensitive species at four areas every five years and in one area in the first year and after any Lake Aloha spills for the rest of the term of the license.

3. Ordering paragraph (E) of the project license specifies that the license is subject to the applicable conditions of the water quality certification (WQC) issued by the California State Water Resources Control Board (SWRCB) under section 401(a) of the Clean Water Act. The WQC Condition No. 13, as set forth in appendix B of the license, discusses a Division of Water Rights, SWRCB-approved final monitoring plan for mountain yellow-legged frog as described in Paragraph No. 2 above.

4. Lastly, license article 401 requires that the monitoring plan be filed with the Federal Energy Regulatory Commission (Commission) for approval, that the filing include documentation of consultation with agencies, comments, and recommendations, a

¹ See 117 FERC ¶ 62,044, Order Issuing New License (issued October 18, 2006).

Project No. 184-129

- 2 -

description of how the comments and recommendations are accommodated, and once approved that the licensee implement the plan.

LICENSEE'S PLAN

5. The licensee's proposed Plan specifies survey sites at eight areas, including the five areas listed in license requirements. The added survey site areas are an unnamed tributary of Silver Lake, Upper Echo Lake, and Emigrant Creek.
6. The licensee's Plan proposes to use the updated visual encounter survey protocols to detect all amphibian life stages at all appropriate habitat types at each survey site using the CDFG Sierra Nevada Fish and Amphibian Survey Protocols during July through September, in addition to surveys below Lake Aloha after any spill events.
7. The proposed Plan includes procedures to prevent the potential spread of disease, including no handling of mountain yellow-legged frogs and decontamination procedures before entering new ponds, and annual reporting of the results and analysis of monitoring by June 30th.

RESOURCE AGENCY COMMENTS

8. The licensee's filing includes approval of the Plan from the Ecological Resources Committee, the U.S. Forest Service, and the California State Water Resources Control Board by correspondence dated December 8, 2010, January 3, 2011, and December 21, 2010, respectively.

DISCUSSION

9. The licensee's Plan proposes annual reporting of mountain yellow-legged frog monitoring, including surveys conducted after any spills from Lake Aloha, to be filed with the Commission by June 30th. This may result in delays of up to one year for any spills that occur after June 30th, as occurred in 2010 with a spill event from Lake Aloha from June 25 to July 3, 2010. The results of special surveys after spill events at Lake Aloha should be reported within 60 days of the event rather than by June 30th each year. With this modification, the Plan will provide for the required monitoring of mountain yellow-legged frogs and the timely filing of monitoring results. The licensee's Plan, as modified, should be approved.

Project No. 184-129

- 3 -

The Director Orders:

(A) El Dorado Irrigation District's (licensee) Mountain Yellow-Legged Frog Monitoring Plan, filed January 10, 2011, under license article 401, U.S. Forest Service 4(e) condition No. 37 of license appendix A, and water quality certificate condition No. 13 of license appendix B for the El Dorado Hydroelectric Project, as modified in Paragraph (B), is approved.

(B) The licensee shall file with the Federal Energy Regulatory Commission reports of any mountain yellow-legged surveys below Lake Aloha within 60 days after a Lake Aloha spill event.

(C) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 8251 (2006), and the Commission's regulations at 18 C.F.R. § 385.713 (2010). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Thomas J. Lovullo
Acting Chief, Aquatic Resources Branch
Division of Hydropower Administration
and Compliance

Document Content(s)

P-184-129.DOC.....1-3