Combined Annual Report

Revised Lower Piru Creek Herpetological Monitoring Plan
and
Arroyo Toad Protection Plan

Santa Felicia Project FERC P-2153

Reporting Period: January 1 through December 31, 2013

Prepared by:

UNITED WATER CONSERVATION DISTRICT

Environmental Planning and Conservation Department

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Executive Summary
This annual report documents activities conducted between January 1 and December 31, 2013, in accordance with the "Arroyo Toad Protection Plan" and the "Revised Lower Piru Creek Herpetological Monitoring Plan" (Revised Monitoring Plan). United Water Conservation District (United) did not conduct any activities under the arroyo toad plan because United did not undertake any activities on U.S. Forest Service (USFS) land within the Santa Felicia Project boundary during the reporting period. United did not have permission to access private land in lower Piru Creek during 2013, and therefore implemented the "No Access Plan" section of the Revised Monitoring Plan. Aquatic exotic species management activities were implemented in pools below the Santa Felicia spillway between March and September. The removal efforts continue to be most effective at reducing the abundance of bullfrogs in the treatment area. Capture efficiencies for other target species were low. Capture counts for each species are included in the methods and results report presented in Attachment A. Future eradication efforts may be refined based on experience gained during the 2012 and 2013 activities.

1.0 Background

United Water Conservation District (United) owns and operates the Santa Felicia Project (Project) on Piru Creek in Ventura County, California. The Federal Energy Regulatory Commission (FERC) issued a new license (License) to United for the operations of the Project on September 12, 2008 (FERC Project No. 2153-012). Articles 401 and 404 of the License required United to file an *arroyo toad protection plan* and *herpetological monitoring Plan* (respectively) for lower Piru Creek. The following background information pertains to each plan.

1.1 Arroyo Toad Protection Plan

In compliance with Article 401 of the License, United filed with FERC the "Arroyo Toad Protection Plan" on October 8, 2009. FERC issued an order approving the plan on January 5, 2011. The plan describes procedures to minimize and mitigate for effects to arroyo toads and arroyo toad critical habitat resulting from any project United undertakes on U.S. Forest Service (USFS) land located within the Project boundary. As required in article 404 of the License, the content of the arroyo toad plan was incorporated into the herpetological monitoring plan (discussed below), and therefore, the annual reporting requirements are being addressed in combination with annual reporting requirements for the herpetological monitoring plan.

The arroyo toad plan requires United to produce an annual report that discusses the following:

1. Any activities conducted by United during the reporting period that had the potential to impact arroyo toads or arroyo toad critical habitat on USFS land located within the Project boundary

2. Any proposed activities proposed to occur in the upcoming year that have the potential to impact arroyo toads or arroyo toad critical habitat on USFS land located within the Project boundary

3. Assessment of implementation and effectiveness of the plan

4. Recommendations for changes to the plan

5. Updated record of consultation with participating agencies

6. Submittal of documented information for all sensitive species observed during implementation of the plan to the California Natural Diversity Database

The arroyo toad plan requires United to provide a copy of the annual report to U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), USFS, and FERC. No deadline for completing the annual report was established in the plan or in FERC's order approving the plan. Given the integration of the arroyo toad plan with the herpetological monitoring plan, United intends to complete all required monitoring for both plans by the same date, December 31.

1.2 Herpetological Monitoring Plan

In compliance with article 404 of the License, United filed with FERC a "Lower Piru Creek Herpetological Monitoring Plan" on October 8, 2009. FERC issued an order approving the plan on January 19, 2011. The October 2009 plan outlined activities that required access to private property. In December of 2011, and supplemented in May of 2012, United was denied access to private property comprising the majority of lower Piru Creek. In a meeting on January 6, 2012 United consulted with the USFWS, CDFG, and National Marine Fisheries Service (NMFS) to develop a strategy for addressing the access issue. The "Revised Lower Piru Creek Herpetological Monitoring Plan" (Revised Monitoring Plan) dated May of 2012 incorporates the approach developed in consultation with the resource agencies. United filed the Revised Plan on June 6, 2012, and FERC issued an order approving the Revised Monitoring Plan on August 9, 2012.

For the reporting period covered in this annual report, United did not have permission to access private property and so implemented the "No Access" portion of the Revised Monitoring Plan. The Revised Monitoring Plan under this no access situation requires that the annual report discusses the following:

1. Effectiveness of aquatic exotic species eradication management efforts
2. Assessment of implementation and effectiveness of the Revised Plan
3. Recommendations for changes to the Revised Plan
4. Update status of access to private property
5. Updated record of consultation with participating agencies
6. Submittal of documented information for all sensitive species observed during implementation of the Revised Monitoring Plan to the California Natural Diversity Database

The Revised Monitoring Plan requires United to complete an annual report by December 31 of each year and provide a copy of it to USFWS, CDFG, U.S. Forest Service (USFS), NMFS, and FERC.

2.0 Reporting Period

This document serves as the annual report for activities conducted for the arroyo toad plan and Revised Monitoring Plan between January 1 and December 31, 2013.

3.0 Activities Conducted during this Reporting Period

3.1 Arroyo Toad Plan

United did not conduct any activities on USFS land within the Project boundary during 2013. Because of this, United did not implement any activities under the arroyo toad plan. Therefore, no additional information is included in this report associated with the arroyo toad protection plan.

3.2 Revised Monitoring Plan

During 2013, United did not have access to private property on lower Piru Creek. Therefore, the "No Access Plan" described in section 3.0 of the Revised Monitoring Plan was implemented. The "No Access Plan" requires that United implement the following activities:

A. Provisions for mitigation and minimization measures for protecting arroyo toads and arroyo toad critical habitat to be implemented in the event that United conducts operations on USFS land within the Project boundary

    a. This requirement was incorporated from the arroyo toad plan. As described in section 1.1, United did not undertake any activities under the arroyo toad protection plan. Therefore, United did not implement any provisions for arroyo toad protection under the Revised Monitoring Plan.

B. Aquatic exotic species management; and,

    a. United undertook the required management activities for aquatic exotic species. As required under the "No Access Plan," these activities took place in the four pools below the Santa Felicia spillway (treatment area). United implemented tasks 1 and 2 as described in the Revised Monitoring Plan. Task 3 is focused on addressing the effects of United's fall conservation release. Due to dry conditions, a conservation release did not occur during 2013. Additional details of the methods implemented are contained in attachment A.

C. Reporting criteria.

    a. This report serves to satisfy the reporting requirements for 2013 activities associated with the herpetological monitoring plan and the arroyo toad protection plan. Copies of the report will be provided to USFWS, CDFG, USFS, NMFS, and FERC. As required, within three months following submittal of this annual report, United will host a meeting to discuss the effectiveness of the aquatic exotic species management program and any operational mitigation or minimization measures performed during the year. All consulting federal and state agencies will be invited to attend.

4.0 Effectiveness of Aquatic Exotic Species Eradication Management Efforts

The Revised Monitoring Plan identifies the American bullfrog (*Rana catesbeiana),* African clawed frog (*Xenopus laevis),* red swamp crayfish (*Procambarus clarkii*), and invasive fishes as targets for management actions. In addition to focusing on these targets, United also implemented removal activities for exotic turtles. Exotic turtles are known to occur in the treatment area and, similar to the other target species, can have detrimental effects on native species. Eradication activities were implemented between March and September of 2013. The activities are described in the methods and results report presented in Attachment A.

In summary, the exotic removal effort was most effective at reducing the abundance of bullfrogs in the treatment area. A total of 131 adult or fully metamorphosed juvenile bullfrogs and 82 tadpoles were removed from the pools. Very few adult bullfrogs were observed during the eradication activities. Most captures were recently metamorphosed juvenile bullfrogs presumably resulting from the substantial numbers of bullfrog tadpoles present in the treatment area at the end of the 2012 eradication activities. Change in capture technique (from gigging to primarily hand capture) for recent metamorphosed juveniles resulted in improved catch rates for small frogs as compared to 2012 activities. Therefore, it is likely that a reduced population of bullfrogs will be present in 2014. Capture efficiencies for other target species remain low, and the reason for this is unclear. Capture counts for each species are included in the methods and results report. Trapping, netting, and manual capture methods implemented in both 2012 and 2013 activities produced results that are below the estimated amount required to reduce population sizes for the target species other than bullfrogs.

5.0 Assessment of Implementation and Effectiveness of the Revised Monitoring Plan

Eradication activities for targeted exotic aquatic species during 2013 produced results that are within an acceptable range. The activities were most effective at removing bullfrogs. Lessons were learned through implementation efforts and methods may continue to be refined in an iterative effort to improve the effectiveness of future eradication activities. For example, the data collected during 2012 activities suggested that bullfrog removal efforts should be concentrated in the early breeding season (i.e., March) to reduce the number of adults reproducing. Implementation of capture efforts early in the breeding season during this reporting period resulted in limiting bullfrog reproduction. United intends to modify and increase the trapping effort for other invasives in 2014. This may include using additional styles of turtle and crayfish traps and other capture techniques such as purse seines, trammel nets, trot lines, minnow traps, and gill nets.

6.0 Recommendations for Changes to the Revised Monitoring Plan

United may refine monitoring techniques in 2014 for control of targeted exotic aquatic species but has not identified any elements of the Revised Monitoring Plan that should be changed at this time.

7.0 Update Status of Access to Private Property

As of this filing date, United has not received permission to access private property located on lower Piru Creek and the access situation remains the same.

8.0 Updated Record of Consultation with Participating Agencies

The last annual report “Combined Annual Report for the Revised Lower Piru Creek Herpetological Monitoring Plan and Arroyo Toad Protection Plan 2012” (2012 Annual Report) was filed with FERC on December 31, 2012. Most of the consultation activities that occurred during 2013 were associated with the 2012 Annual Report. United consulted with representatives of the Los Padres National Forest (LPNF) on February 6, 2013. During the consultation United presented a status report for implementation activities associated with conditions of section 4(e) of the License, which included discussion of activities addressed in the 2012 Annual Report. On April 2, 2012, United submitted the 2012 Annual Report to all consulting federal and state agencies (LPNF, Angeles National Forest (ANF), USFWS, NMFS, and CDFW). All agencies were invited to participate in a conference call held on April 30, 2013, to discuss the effectiveness of the aquatic exotic species management program and operational mitigation or minimization measures performed during 2012. Dan Blankenship of CDFW

and Peter Johnston of ANF participated in the conference call. Mr. Blankenship requested that DNA samples be retrieved from any captured pond turtles in the future prior to release. United intends to comply with this request and will also report any future pond turtle sightings to the California Natural Diversity Database.

9.0 Submittals to California Natural Diversity Database

United submitted a native species field survey form to the California Natural Diversity database describing two incidents of western pond turtles being captured in partially submerged inverted-funnel style crayfish traps during aquatic exotic species eradication activities. The first capture occurred on March 13, 2013 and the second on April 17, 2013. Both turtles were released on the bank of the pool where they were captured. The completed form is included in Attachment B.

Attachment A

2013 Exotic Species Eradication Management:
Methods and Results

2013 Aquatic Exotic Species Eradication Management; Methods and Results

Introduction

This report details aquatic exotic species eradication management activities performed by United Water Conservation District (United) during the year 2013. The eradication management activities conducted were in accordance with the "Revised Lower Piru Creek Herpetological Monitoring Plan" (May 2012) (Revised Monitoring Plan) which was developed to satisfy requirements of article 404 of the license issued to United by the Federal Energy Regulatory Commission (FERC) for operations of the Santa Felicia Project (FERC Project No. 2153-012). The Revised Monitoring Plan describes alternative activities to be implemented based on United's ability to access private property located downstream of the Santa Felicia Dam. During 2013, United did not have permission to access private property below the dam, and therefore, eradication management activities were conducted following protocols outlined in the revised plan for the "no access" condition.

The eradication management activities were conducted in three pools located in the Santa Felicia Dam spillway channel, in Ventura County, California. The pools are not hydrologically connected to Lake Piru or lower Piru Creek except under spill conditions. Theoretically, this means that no aquatic exotic species enter or leave the pools except when a spill occurs. Removing exotic species from the pools will have a biological benefit until the next spill occurs. The pools have the potential to provide suitable habitat for the California red-legged frog, among other important native species. Removing the exotics that predate upon or compete with these natives may create an opportunity for them to move into and use the pools.

The conditions documented during the initial aquatic exotic species removal and monitoring effort in 2012 are considered representative of baseline conditions with respect to exotic species densities and population dynamics within the eradication management treatment area. Observations made during this reporting period (2013) and subsequent periods will be compared to baseline conditions to evaluate the effectiveness of the exotic removal techniques and activities. Methods will be refined, as appropriate, in an iterative effort to improve the effectiveness of future eradication management activities.

2013 Conditions

Water surface elevations in the three spillway channel pools within the eradication management treatment area fluctuated seasonally during the reporting period based on atmospheric temperature and rainfall patterns. 2013 was a dry year, and minimum measured water surface elevations were more than two feet lower that those measured in 2012. This decrease in water surface elevation resulted in a reduction of available habitat for target species as compared to baseline conditions.

All of the pools surveyed were primarily inhabited with largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), bullfrogs (*Rana catesbeiana*) and red swamp crawfish (*Procambarus clarki*). Adult largemouth bass were present in two of the pools (P1 and P2D, Figure 1), and juvenile largemouth bass were present in all pools. African clawed frog (*Xenopus laevis*) adults and larvae were only observed in a pool where adult largemouth bass were not observed (P2U, Figure 1). Native western pond turtles (*Emys marmorata*) and non-native turtles were also observed in the treatment area.

Methods

Physical Habitat and Water Quality Parameters

Each pool was mapped using a GPS unit in 2012 (Figure 1). Total area was quantified for each pool using Manifold GIS (v8.0.28). Water quality data were only collected in the largest pool (P1, Figure 1) where the removal effort was focused due to greater habitat area. Water quality parameters were collected at three sites within P1 (furthest upstream, middle pool and shallow shelf). The water quality meter's dissolved oxygen (DO) and turbidity sensors malfunctioned intermittently during the survey period and data are only presented from periods when the instrument was functional.

Bullfrogs

Bullfrogs (*Rana catasbeiana*) were captured using direct methods: frog gigs, a custom modified fishing pistol crossbow, and hand/dipnet. Beginning 20 to 40 minutes after sunset, 2 or 3 teams surveyed the treatment area using high powered headlamps (Nite Lite halogen 6V and/or Black Diamond Icon 200 lumen). A two-person team in an inflatable boat traversed the shoreline of the largest pool (P1), while one or two biologists walked the area of shoreline that was inaccessible to the boat (P1D). One to three biologists walked the shorelines of P2U, P2D, and P3. Bullfrogs were sighted using eye-shine, approached as closely as possible to maximize capture probability while limiting detection by the frog, and then gigged, shot with a customized pistol crossbow with retrievable arrows, or captured by hand/dipnet. Captured frogs were euthanized in an anesthetic overdose of buffered MS-222 (3-5 g/L), measured and sexed (over 100 mm SV), individually frozen, and submitted to the herpetology collection at the Los Angeles County Natural History Museum.

Exotic Turtles

Capture strategies for turtles included use of large, partially submerged hoop nets, and floating basking traps specifically designed for capturing turtles. Floats inside the hoop nets ensured airspace to prevent drowning of non-target species. Hoop nets were baited using canned sardines and basking traps were not baited. Both types of traps were deployed for approximately 48 to 72 hours per sampling period. Traps were checked once per day. Non-target species (e.g., native species such as western pond turtle and two-striped garter snake) were released at the capture location. Target species were euthanized by freezing and submitted to the herpetology collection at the Los Angeles County Natural History Museum.

Invasive Fish

Non-native fish were captured using an experimental gill net (150 feet long, with six panels of different mesh size), hook and line, or minnow traps. The gill net and minnow traps were deployed for durations of approximately 48 to 72 hours and checked once per day. The gill net was deployed across the largest pond (P1). Hook and line fishing and dipnetting occurred when time was available and by technicians of varying skill; therefore, fishing effort using this technique was not assessed or quantified.

Crayfish/Bullfrog Tadpoles

Crayfish and bullfrog tadpoles were captured in minnow/crayfish traps baited with chicken liver and gizzards. Traps were deployed for durations of approximately 48 to 72 hours and checked once per day. Traps were placed in shallow water near the edge of pools P1 and P2. Several models of traps were used: square wire "walk-in" traps, fine mesh collapsible minnow traps (funnel style), and medium mesh collapsible crayfish traps (funnel style).

Removal effort

Removal treatments were implemented in March (4 days), April (3 days), May (4 days), June (3 days), July (3 days), and September (1 day) of 2013. Three to six biologists participated in each removal treatment. Passive capture methods were deployed for a total of 199 hours (experimental gill net) and 5,020 hours (crayfish/turtle traps). Active capture methods for bullfrog capture were employed for 5.75 hours (fishing crossbow), 65 hours (frog gigs), 15 hours (hand/dipnet). Seining and electro-fishing were performed in P2 only (seining for 6.1 hours and electro-fishing for 0.75 hrs). The total hours of effort per treatment event and capture data are presented in Table 2.

Results

Physical Habitat and Water Quality Parameters

Water quality parameters were within acceptable levels for aquatic life during the survey period. Surface water temperature increased, dissolved oxygen decreased, and P1 became stratified in May and June of 2013. Several algal blooms occurred in P1 over the course of the summer. The total surface area for each pool in March was approximately 3,148 m^2 for P1, 854 m^2 for P2 and 108 m^2 for P3. By the end of the sampling season, P1 had decreased by approximately 30 percent (2200 m^2), P2U was dry, P2D had decreased by approximately 30 percent, and P3 was dry. Water quality parameters measured in P1 during this reporting period are presented in Table 1.

Removal results

Bullfrogs/Tadpoles

Within the treatment area, 133 adult/fully metamorphosed juvenile bullfrogs were captured and euthanized, as well as 82 bullfrog tadpoles. Only 13 bullfrogs were larger than 100 mm snout-vent (SV) length. Average bullfrog size was 64 ± 33 mm snout-vent length (Figure 2), with females (157 ± 46 mm) slightly larger than males (140 ± 37 mm). The sex ratio was skewed towards females (0.44:1 M:F), but we could only identify sex of 13 frogs (juvenile frogs cannot be reliably sexed). Capture rates for adults were consistently low throughout the season compared to baseline conditions, and the number of adults captured was reduced over the course of the removal efforts (Figure 3). Similar to 2012, we

observed a spike in captures in June and July due to the emergence of recently metamorphosed juvenile frogs (Figure 4). Most bullfrogs were observed and captured in treatment area P1/P1D (45.9 hrs; 89 frogs), which has the largest amount of available habitat in the study area. The combined effort in P2/P3 was slightly less than P1, and the catch rate was approximately 50 percent (39.4 hrs; 44 frogs). Although eradication efforts were logistically more difficult to implement in the smaller pools (P2/P3) than in the larger pool (P2), the difference in catch rates is much greater than would be expected if it were only due to logistical differences in sampling activities. The substantially greater catch rate in P1 suggests that the population size in the lower pools was smaller than the population size in the larger pool.

Exotic Turtles

No turtles were captured in turtle traps. Two native western pond turtles (*Emys marmorata*) were captured in a large crayfish trap in treatment area P2. The first capture occurred on March 13, 2013 and the second on April 17, 2013. Both turtles were released on the bank of the pool where they were captured. It is possible that the same turtle was captured twice. In future efforts United will mark captured turtles following U.S. Geological Survey (USGS) protocols. A native species field survey form was submitted to the California Natural Diversity database describing the two incidents. Although at least one exotic turtle was observed in P2 (multiple observations were made), no exotic turtles were captured.

Invasive Fish

Only seven fish (largemouth bass and green sunfish) were captured in the experimental gill net. The minnow/crayfish traps captured 241 young-of-the-year (YOY) largemouth bass, 67 prickly sculpin (*Cottus asper*), and one green sunfish. Hook and line fishing was performed when time was available and resulted in the capture of one largemouth bass. All treatment methods for capturing exotic fish species appeared to be inefficient, given the low capture rates and large number of fish observed in the study area. Largemouth bass of at least one life stage (P2U only had young bass) were observed in all pools and the presence of YOY bass indicates that they successfully reproduced during 2013.

Crayfish

A total of 73 red swamp crayfish (*Procambarus clarkia*) were captured in crayfish traps. Trapping was more efficient than 2012 because bait was placed in heavy mesh bags to prevent crayfish from eating the bait without entering the trap. Relatively few crayfish entered the wire mesh “walk-in” traps compared to the cloth minnow traps. Large numbers of crayfish were observed in the study area.

Discussion

The 2013 aquatic exotic species eradication effort was effective at reducing the abundance of adult bullfrogs in the treatment area, but was less efficient with other taxa. Although substantially more frogs were captured in 2013 than 2012, the number of adult frogs was greatly reduced and most frogs captured were recent emergers from reproductive bouts in recent years. The adult bullfrog population in the treatment area was greatly reduced compared to 2012, and we did not observe any signs of successful reproduction (i.e., eggs or young tadpoles). Only one bullfrog was heard calling during the removal effort and that frog was successfully captured. Given that bullfrogs can remain as tadpoles for two years before emergence, there will likely be a small population of adult frogs and newly emerging

juveniles present in 2014. The data suggest that concentrating the primary removal effort in the early breeding season successfully reduced or eliminated reproduction during 2013. We will continue our early season efforts in 2014. Modified techniques for capture of recently metamorphosed juveniles (i.e., hand or dipnet rather than gig) were successful at increasing capture rates as compared to the initial effort in 2012.

It was not clear why capture efficiencies for other taxa were low. Despite high abundances of most exotic taxa, trapping, netting, and manual capture remained below the amount required to reduce population sizes. Funnel style traps captured a larger variety of taxa and were more effective than walk-in traps. In 2014, we will increase or modify trapping efforts, potentially using additional styles of turtle and crayfish traps. For fish, we may increase the level of effort or attempt other capture techniques, including purse seines, trammel nets, trot lines, minnow traps, and gill nets.

Population trends for bullfrogs will be assessed in future reports after three years of data are collected. Population estimates, estimates of reproductive output, and relative frequency, density, and distribution of all exotic species will be included in future reports for taxa for which sufficient data are gathered. Overall, during this reporting period, the exotic removal effort showed a decrease in catches over time, with only two frogs captured in the final sampling event of the season, and within each month of sampling, subsequent evenings often resulted in lower catch rates.

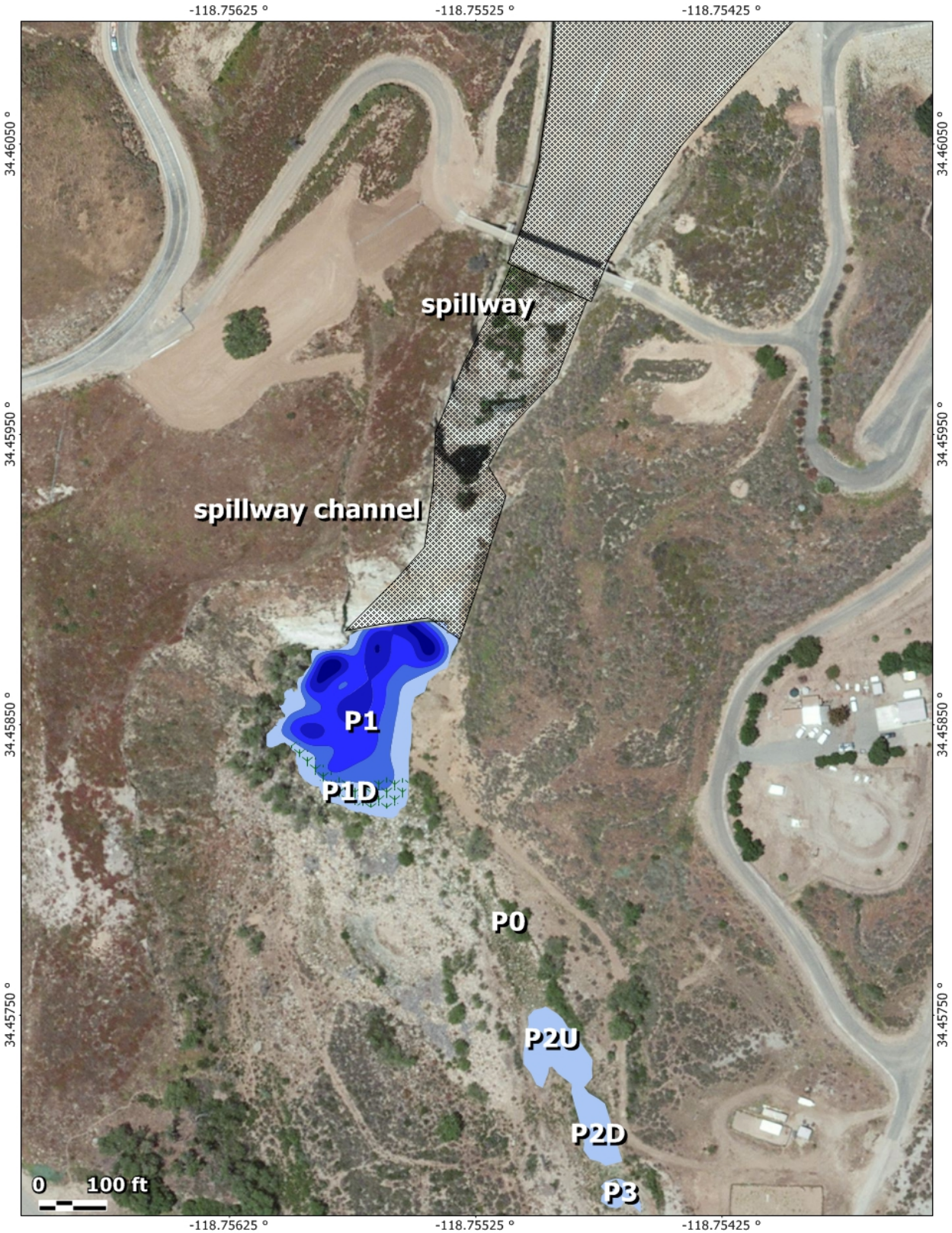

Figure 1 - Aquatic exotic eradication management treatment area

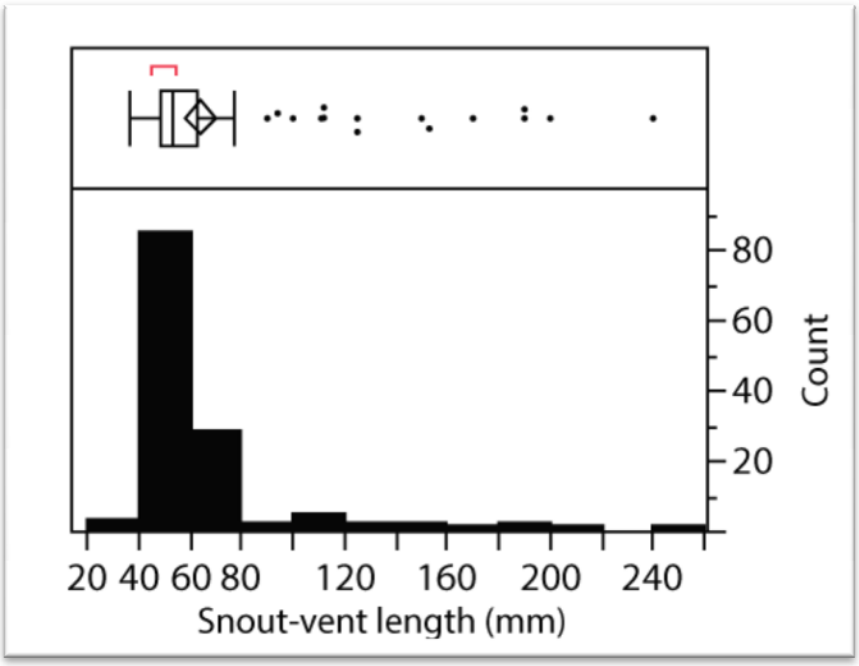

Figure 2 - Size distribution of captured bullfrogs

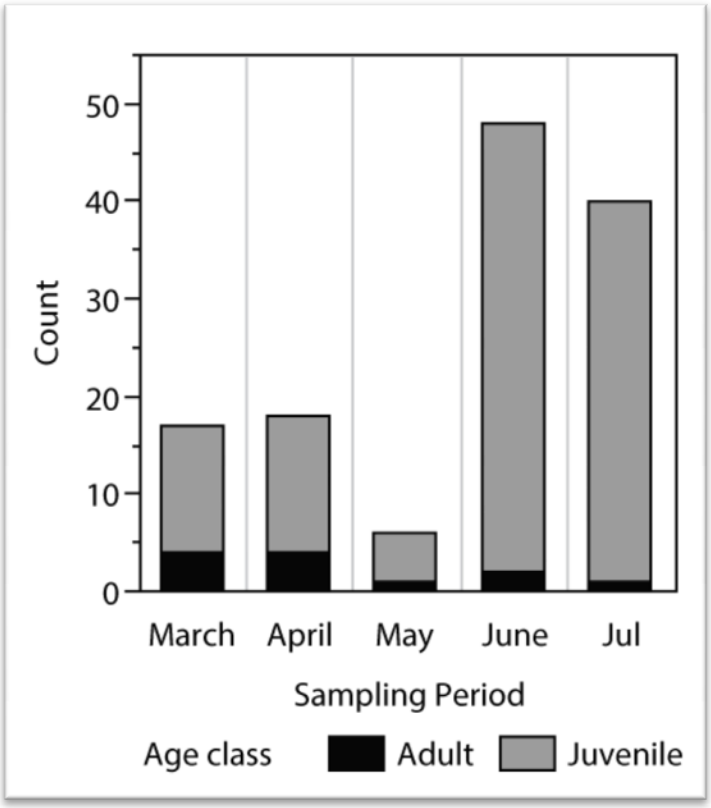

Figure 3 - Age class of captured bullfrogs

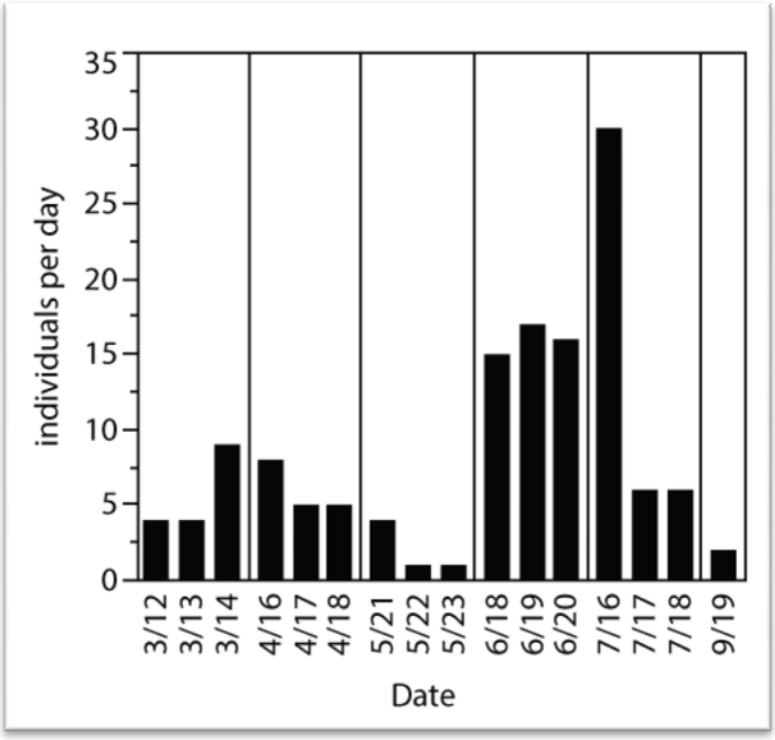

Figure 4 - Number of bullfrogs captured on each eradication treatment event day

Table 1 - Physical characteristics and water quality parameters for P1. Unpopulated cells indicate sensor malfunction.

Sampling Period	Depth (ft)		Temp (°C)		DO (mg/L)		pH		Conductivity (mS/cm)		Turbidity (ntu)	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
March	1	15	15.9	18.7			6.9	7.1	1.1	1.1		
April	1	17	16.2	16.5			7.1	7.1	1.2	1.2		
May	1	13	15.7	24.6	9.9	12.2	8.4	9.6	1.4	1.5		
June	1	10	16.9	26.2	3.8	11.2	8.4	9.7	1.4	1.6	1.4	37.8
July	1	10	25.5	25.8	7.4	8.5	8.9	8.9	1.6	2.0		

Table 2 - Exotics removal effort and catch

Sampling period	Method	Total Hours*	Exotic species										Native species				
			African clawed frog	African clawed frog tadpole	Bullfrog	Bullfrog tadpole	Bluegill sunfish	Green sunfish	Largemouth bass	Prickly sculpin	Red swamp crayfish	Red-eared slider	Tree frog	Tree frog tadpole	Southwestern pond turtle	Two-striped garter snake	Muskrat
March 13	Gig	13.5			10	1					3						
March 13	Hand	1.8			5	50			6		40						
March 13	Hook	1.5															
March 13	Net	65.5															
March 13	seine	0.8															
March 13	Trap	830.0													1		
March 13	Crossbow	1.5			2												
April 13	Gig	16.2			18	2					3						
April 13	Hand	1.3															
April 13	Trap	1,040.0				12			2	39	10			1	1		
May 13	Trap	1,295.1				4			210	17	41			1			
May 13	Crossbow	3.2			3	1											
May 13	Electroshock	0.8															

Taxa key			
Amphibian/ Reptile	Fish	Crustacean	Mammal

Sampling period	Method	Total Hours*	Exotic species									Native species				
			African clawed frog	African clawed frog tadpole	Bullfrog	Bullfrog tadpole	Bluegill sunfish	Green sunfish	Largemouth bass	Prickly sculpin	Red swamp crayfish	Red-eared slider	Tree frog	Tree frog tadpole	Southwestern pond turtle	Two-striped garter snake	Muskrat
May 13	Gig	17.4			3												
May 13	Seine	1.3		96		1			112	4	59						
May 13	Net	39.5					1		1								
June 13	Crossbow	1.0			1												
June 13	Gig	4.2			20	1					4						
June 13	Hand	4.6			27												
June 13	Net	47.0							2								
June 13	seine	2.7		218		8			21		52						
June 13	Trap	957.9	4			2		1	2	5	18						
July 13	Gig	8.8			16												
July 13	Hand	7.9			26				8								
July 13	Net	47.4							3								
July 13	Seine	0.7	15						147	1	7						
July 13	Trap	897.1							27	6	4						

Taxa key			
Amphibian/ Reptile	Fish	Crustacean	Mammal

Sampling period	Method	Total Hours*	Exotic species										Native species				
			African clawed frog	African clawed frog tadpole	Bullfrog	Bullfrog tadpole	Bluegill sunfish	Green sunfish	Largemouth bass	Prickly sculpin	Red swamp crayfish	Red-eared slider	Tree frog	Tree frog tadpole	Southwestern pond turtle	Two-striped garter snake	Muskrat
September 13	Seine	0.6							63								
September 13	Gig	5.3			2												
	Totals	5,314.58	19	314	133	82	1	1	604	72	241			2	2		

Taxa key			
Amphibian/ Reptile	Fish	Crustacean	Mammal

Attachment B

Completed California Native Species Field Survey Form

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 03/13/2013

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Emys marmorata*

Common Name: Western Pond turtle

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals _____ Subsequent Visit? ☐ yes ☐ no

Is this an existing NDDB occurrence? _____ ☐ no ☐ unk.
Yes, Occ. #

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Michael Booth
Address: UWCD 106 N 8th St, Santa Paula, Ca 93060
E-mail Address: mikeb@unitedwater.org
Phone: (805) 317-8988

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

2 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ wintering ☐ breeding ☐ nesting ☐ rookery ☐ burrow site ☑ other

***Location Description* (please attach map AND/OR fill out your choice of coordinates, below)**

Small pond below Piru Lake spillway, indicated with a star on the attached map.

County: Ventura Landowner / Mgr.: United Water Conservation District
Quad Name: Piru Elevation: _____
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): _____
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ GPS Make & Model Trimble GeoExplorer XP
DATUM: **NAD27** ☑ **NAD83** ☐ **WGS84** ☐ Horizontal Accuracy 3 m meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ ***OR*** Geographic (Latitude & Longitude) ☑
Coordinates: 118 45.237 W 34 27.426 N

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*
Shallow (1-2 m deep) pool surrounded by bullrush and small willows. Turtles were captured in a partially submerged inverted-funnel style crayfish trap baited with chicken liver. Turtles were released on the pond bank next to the pond. One turtles was captured on 3/13/13 and one on 4/17/13.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☑ Excellent ☐ Good ☐ Fair ☐ Poor
Immediate AND surrounding land use: relatively undisturbed overflow channel, no current human use.
Visible disturbances:
Threats: Numerous largemouth bass present
Comments:

Determination: *(check one or more, and fill in blanks)*
☑ Keyed (cite reference): Stebbins. Western Reptiles and Amphibians 3rd edition
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☐ Other: _____

Photographs: *(check one or more)* Slide Print Digital
Plant / animal ☐ ☐ ☐
Habitat ☐ ☐ ☐
Diagnostic feature ☐ ☐ ☐
May we obtain duplicates at our expense? yes ☐ no ☐

DFG/BDB/1747 Rev. 6/16/09

-118.75625 °
-118.75525 °
-118.75425 °
34.46050 °
34.45950 °
34.45850 °
34.45750 °

spillway
spillway channel
P1
P1D
P0
P2
P3
0 100 ft