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, 2012

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, 2012, 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 on U.S. Forest Service (USFS) land within the Project boundary during the reporting period. Because of this, United did not implement any activities under the arroyo toad plan. United did not have permission to access private land in lower Piru Creek during 2012. Activities conducted were in compliance with the "No Access Plan" of the Revised Monitoring Plan. Aquatic exotic species management activities were implemented in pools below the Santa Felicia spillway between April and July. The removal efforts were 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 will be refined based on experience gained during the 2012 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; and

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 Game (CDFG), 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; and
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, 2012.

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 2012. 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 2012, 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. United did not implement task 3 as the conservation release occurs in the main stem of Piru Creek and does not affect the spillway channel. Additional details of the methods implemented are contained in attachment A.

C. Reporting criteria.

    a. This report serves to satisfy the reporting requirements for 2012 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 April and July of 2012. The activities are described in a 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 71 adult or fully metamorphosed juvenile bullfrogs and 253 tadpoles were removed from the pools. Although the adult bullfrog population in the treatment area was reduced, the presence of substantial numbers of bullfrog tadpoles at the end of the treatment period suggests that bullfrogs successfully reproduced during 2012, and therefore, it is probable that a healthy population of bullfrogs will be present in 2013. Capture success for recent metamorphosed juveniles was lower than adult frogs. This is likely due to their small size.

Capture efficiencies for other target species were 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 produced results that are below the estimated amount required to reduce population sizes.

5.0 Assessment of Implementation and Effectiveness of the Revised Monitoring Plan

Eradication activities for targeted exotic aquatic species during 2012 produced results that are within an acceptable range. Lessons were learned through implementation efforts and methods will be refined in an iterative effort to improve the effectiveness of future eradication activities. For example, the data suggest that future bullfrog removal efforts should be concentrated in the early breeding season (i.e., March) to reduce the number of adults reproducing. In addition, United intends modify and increase the trapping effort for other invasives in 2013. This includes using several 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 is considering refining certain management actions in 2013 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

In 2012, United's General Manager had frequent contact with private property owners to discuss the access issue for lower Piru Creek. 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. In 2013, United intends to continue to be in contact with the landowners regarding this issue.

8.0 Updated Record of Consultation with Participating Agencies

United consulted with USFWS, CDFG, and NMFS on January 6, 2012. A discussion of this consultation is included in the Revised Monitoring Plan. The purpose of the consultation was to develop a strategy for implementing herpetological monitoring activities within the confines of limited access to lower Piru Creek. The Revised Monitoring Plan incorporates guidance provided by the participating resource agencies at the January meeting and was submitted to USFWS, CDFG, Los Padres National Forest (LPNF), and NMFS for review on June 6, 2012. Based on the consultation history in developing the Revised Monitoring Plan, no concerns were anticipated. United requested that the agencies respond with statements of concurrence or comments by July 6, 2012, and stated that if a response was not received by that time, concurrence would be assumed. Only one response was received. Anthony Spina of NMFS sent an email stating that no coordination with NMFS is required

for the Revised Monitoring Plan. United filed the Revised Monitoring Plan with FERC on June 6, 2012, and FERC issued an order approving the Revised Monitoring Plan on August 9, 2012.

United consulted with Dan Blankenship of CDFG while developing methods for implementing the aquatic exotic species eradication efforts. This consultation included telephone conversations and emails. Mr. Blankenship visited the eradication site to observe field activities on May 9, 2012.

9.0 Submittals to California Natural Diversity Database

On August 10, 2012 United submitted a native species field survey form to the California Natural Diversity database describing a sighting of a two striped garter snake (*Thamnophis hammondi*) in one of the spillway pools during exotic eradication activities. The completed form is included in attachment B.

Attachment A

2012 Exotic Species Eradication Management:
Methods and Results

2012 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 2012. The eradication management activities were in accordance with the "Revised Lower Piru Creek Herpetological Monitoring Plan" (May 2012) 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 removal activities were conducted in three pools within the Lake Piru spillway channel, located in Ventura County, California.

Initial Conditions

This initial exotic removal and monitoring effort will be considered a baseline with respect to exotic species densities and population dynamics within the survey treatment area. Subsequent surveys will be compared to this baseline to evaluate the effectiveness of the exotic removal activities as well as to gather information regarding removal technique efficiencies and modifications if required.

The three pools within the treatment area remain fairly static annually with water level fluctuations occurring seasonally based on atmospheric temperature. However, these pools and the species composition within the pools will most likely change dramatically following spills over Santa Felicia Dam they are located directly within the spillway channel. Also, these pools are not connected to Piru Creek except during spill events.

All of the pools surveyed were primarily inhabited with largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*) or bluegill (*Lepomis macrochirus*), bullfrogs (*Rana catesbeiana*) and red swamp crawfish (*Procambarus clarki*). African clawed frog larvae (*Xenopus laevis*) have been observed by United biologists in isolated pools in lower Piru Creek but none were observed in the survey pools. These pools are also inhabited with native southwestern pond turtles (*Emys marmorata pallida*) and most likely non-native turtles. Additional methods will be used in an attempt to capture non-native turtles starting in 2013.

Methods

Physical Habitat and Water Quality Parameters

Each pool was mapped using GPS unit. Total area was quantified for each pool surveyed using Google Earth. Water quality data were collected only in Pool P1 where the majority of the effort was focused during this initial sampling season. Water quality parameters were collected at three sites within P1 (near the dam, middle pond and shallow shelf). The water quality meter malfunctioned following the

April survey activities so only the April data is presented in this report. Dominant vegetation was also surveyed along each pool.

Bullfrogs

Bullfrogs were captured using direct methods: frog gigs and custom modified fishing pistol crossbow. Beginning 20 to40 minutes after sunset, two or three teams surveyed the treatment area using high powered headlamps (Nite Lite halogen 6V hunting lights). A two-person team in an inflatable boat traversed the shoreline of the large pond (identified as P1 in figure 1), while one to two biologists walked the shoreline that is inaccessible to the boat (P1D). Bullfrogs were sighted using eye-shine, approached as closely as possible to maximize capture probability while limiting detection by the frog, and then gigged or shot with a customized pistol crossbow with retrievable arrows. Captured frogs were euthanized in an anesthetic overdose of buffered MS-222 (3-5 g/L), measured and sexed, individually frozen, and submitted to the Los Angeles County Natural History Museum for its herpetology collection.

Exotic Turtles

Turtles were trapped using large, partially submerged hoop nets designed for turtles. Floats inside the trap ensured airspace to prevent drowning of non-target species. Traps were baited using canned sardines and deployed for approximately 48 hours per sampling period. Traps were checked once per day. Non-target species (e.g., native species such as southwestern pond turtles, two-striped garter snake) were released at the capture location and target species were euthanized by freezing and submitted to the Los Angeles County Natural History Museum for their herpetology collection. United added exotic turtles as a target species because they are known to occur in the treatment area and are known to have detrimental effects on native aquatic species.

Invasive Fish

Invasive Fish were captured using an experimental gill net (150 ft 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 hours and checked once per day. The gill net was deployed across the largest pond (P1). Hook and line fishing occurred when time was available and by technicians of varying skill, so fishing effort using this technique was not assessed.

Crayfish/Bullfrog Tadpoles

Crayfish and tadpoles were captured in minnow/crayfish traps baited with chicken liver and gizzards. Traps were deployed for durations of approximately 48 hours and checked once per day. Traps were placed in shallow water near the edge of the ponds (P1 and P2). Several models of trap were used: square wire “walk-in” traps, small cloth mesh collapsible minnow traps, and medium mesh collapsible crayfish traps.

Results

Physical Habitat and Water Quality Parameters

Water quality parameters were fairly good for most aquatic life during the survey period. However, water temperature most likely increases and dissolved oxygen most likely decreases in the summer. The

total surface area for each pool was 1775 m^2 for P1, 118 m^2 for P2 and 85 m^2 or P3. Water quality parameters from April are presented in Table 1.

Table 1. Physical habitat and water quality parameters.

Pool	Area (m^2)	Max Depth	Avg Depth	Max DO (mg/L)	Min DO (mg/L)	Avg DO (mg/L)	Max Temp (°C)	Min Temp (°C)	Avg Temp (°C)	Avg Cond (mS/cm)	Turb (ntu)
P1	1775	15	6.6	11.3	0.9	6.5	20.9	14.9	17.7	1.12	3.54
P2	118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P3	85	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Removal effort

Removal treatments were implemented in April (5 days), May (3 days), June (3 days), and July (3 days) of 2012. Three to five biologists participated in each removal treatment. Passive capture methods were deployed for a total of 187 hours (experimental gill net) and 2074 hours (crayfish/turtle traps). Active capture methods for bullfrog capture were employed for 18.5 hours (fishing crossbow) and 23.5 hours (frog gigs). The total hours of effort per treatment event and capture data are presented in Table 1.

Removal results

Bullfrogs/Tadpoles

Within the treatment area, 71 adult/fully metamorphosed juvenile bullfrogs (*Rana catasbeiana*) were captured and euthanized during 2012, as well as 253 bullfrog tadpoles. Average bullfrog size was 150 ± 38 mm snout-vent length (Figure 2), with females (132 ± 47 mm) typically smaller than males (170 ± 21 mm). The sex ratio was slightly skewed towards females (0.87:1 M:F; Figure 3). The number of adults captured was strongly reduced over the course of the removal (Figure 3), with high capture rates in April dropping consistently until July. Although the total number of bullfrogs captured in July was higher than the previous two months, this was due to the capture of recently metamorphosed juvenile frogs (Figure 4). Most bullfrogs were captured and observed in treatment area P1/P1D, which is the largest habitat in the study area. However, less effort was expended in the other treatment areas, which are logistically more difficult to implement the removal methods.

Exotic Turtles

No turtles were captured in turtle traps, but were captured using other passive capture methods. One large, very old (10+ years, Gregory Pauly, pers. comm.) red-eared slider (*Trachemys scripta*) was capture in the experimental gill net in May. Three Southwestern pond turtles (*Emys marmorata pallida*) were captured in a fully submerged large crayfish trap in treatment area P2. One of the pond turtles drowned in the trap, the other two were released alive into P2. The incidental mortality was reported to CDFG (D. Blankenship, pers. comm.) within 24 hours and both the red-eared slider and deceased pond turtle were submitted in the LA County Natural History Museum. Subsequent to the turtle bycatch, large crayfish traps were deployed partially submerged to avoid drowning of turtles.

Invasive Fish

Only eight fish (largemouth bass and bluegill sunfish) were captured in the experimental gill net. Thirty young-of-the-year largemouth bass and one bluegill sunfish were captured in the minnow/crayfish traps. Hook and line fishing was performed when time was available and resulted in the capture of five bluegill sunfish and two 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.

Crayfish

Twelve red swamp crayfish were captured in crayfish traps. Trapping was inefficient due to crayfish not entering the wire mesh "walk-in" traps, but instead eating the bait from outside the trap. Bait deployment will be modified in future trapping seasons. Large numbers of crayfish were observed in the study area.

Discussion

The 2012 exotic removal effort was effective at reducing the abundance of adult bullfrogs in the treatment area, but was less efficient with other taxa. Although the adult bullfrog population in the treatment area was reduced, the presence of substantial numbers of bullfrog tadpoles at the end of the treatment period suggests that bullfrogs successfully reproduced during 2012 and there will be a healthy population present in 2013. The data suggest that the primary removal effort should be concentrated in the early breeding season (February to March depending on temperature conditions) to reduce the numbers of reproducing adults. Capture success for recent metamorphosed juveniles was lower than adult frogs due to their small size.

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. In 2013, we will increase trapping effort, including using several additional styles of turtle and crayfish traps. For fish, we may attempt other capture techniques, including purse seines, trammel nets, trot lines, minnow traps, and gill nets.

Population dynamic changes will be assessed in future reports after additional data is collected and compared to these baseline data. Also, population estimates, annual estimates of reproductive output and relative frequency and density and distribution of all exotic species will be included in future reports once additional data is gathered. The effectiveness of the initial exotic removal effort showed a decrease in catches over time. Future efforts will be statistically evaluated to see if there is a significant decline in exotic species over time.

Annual report: Exotic species removal

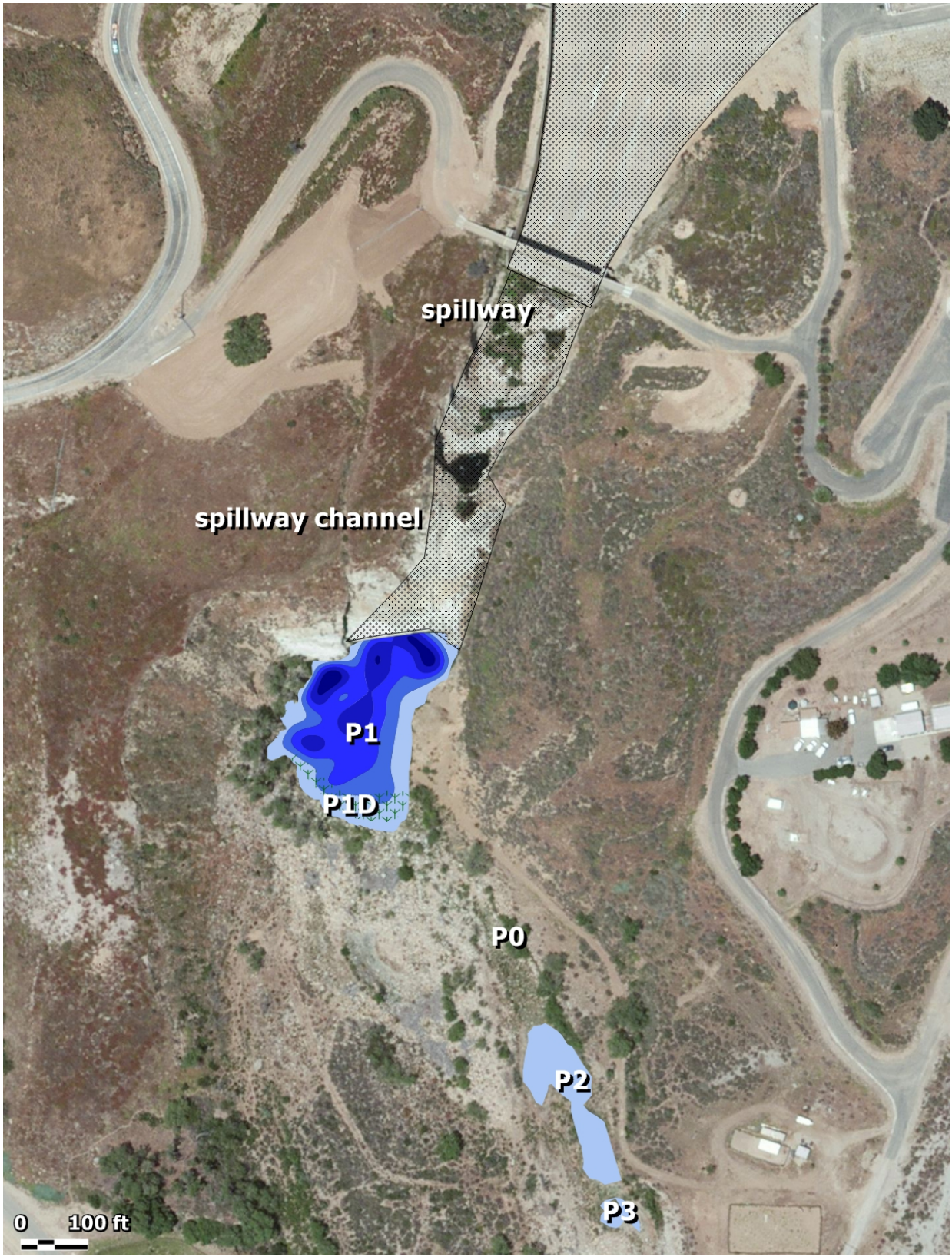
Taxa key			
Amphibian/ Reptile	Fish	Crustacean	Mammal

Table 1. Results of exotic removal, total hours of effort and treatment events.

				Exotic species								*Native species*			
Sampling period	**Method**	**Total Hours***	**# treatment events**	**Bullfrog**	**Bullfrog tadpole**	**Red-eared slider**	**Bluegill sunfish**	**Green sunfish**	**Largemouth bass**	**Prickly sculpin**	**Red swamp crayfish**	**Southwestern pond turtle**	**Two-striped garter snake**	**Pacific treefrog**	**Muskrat**
April	Crossbow	3.9	7	8											
April	Gig	6.8	6	29											
April	Net	46.9	2						1						
April	Trap	407.4	8												
May	Crossbow	4.2	5	7											
May	Gig	4.0	6	7										1	
May	Hook & line							1	1						
May	Net	46.8	2												
May	Trap	384.3	16			1									
June	Crossbow	4.9	5	5											
June	Gig	7.5	6	2											
June	Hook & line	n/a					5		1						
June	Net	46.6	2				1		1						
June	Trap	615.2	27		179				24	2	8	3			1
July	Crossbow	5.5	8	6											
July	Gig	5.2	4	7											
July	Net	47.5	2						5						
July	Trap	667.5	28		74		1		6		4		1		
			Total:	**71**	**253**	**1**	**7**	**1**	**39**	**2**	**12**	**3**	**1**	**1**	**1**

* Total hours is computed as person hours (i.e., hours per person gigging or shooting) for manual capture methods and total deployed hours for nets and traps

Figure 1 – Exotics removal treatment area



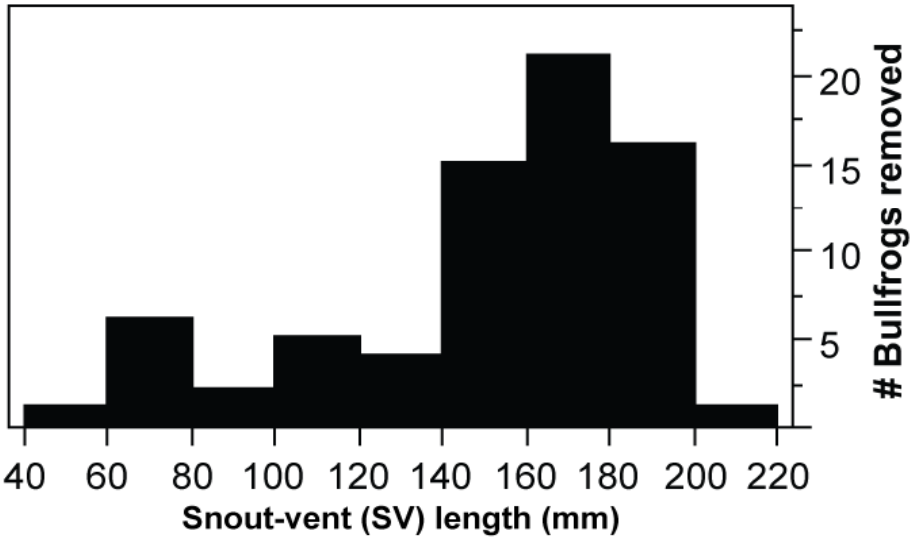


FIGURE 2. Size distribution of removed bullfrogs

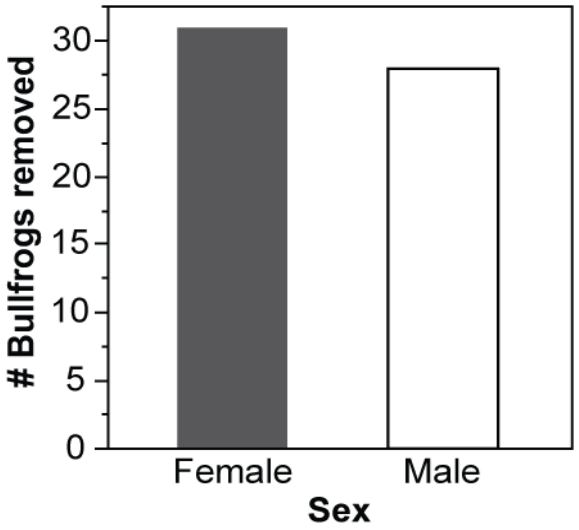


FIGURE 3. Sex of bullfrogs removed during 2012

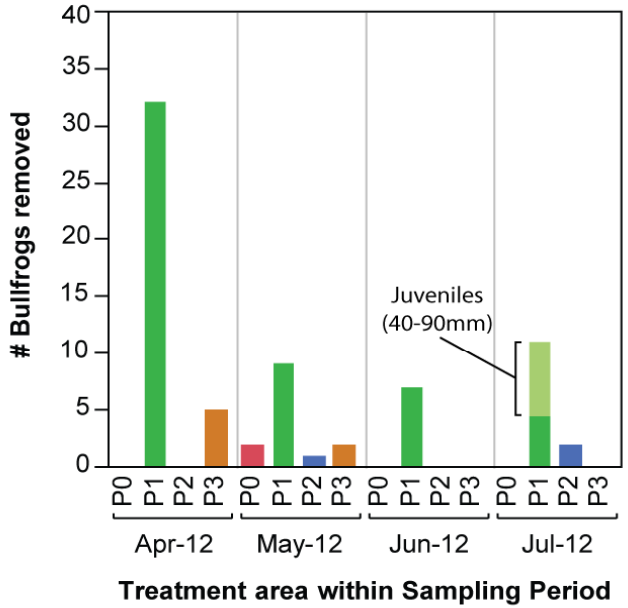


FIGURE 4. Number of bullfrogs per habitat during 2012

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): 07/19/2012

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: *Thanmnophis hammondii*

Common Name: Two-striped carter snake

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

1 # 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. Snake was captured in a partially submerged inverted-funnel style crayfish trap baited with chicken liver. Snake was released on the pond bank next to the pond.

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 ☐

-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