

Appendix 3.4-4

2023 California Tiger Salamander Habitat Assessment,

Las Camas Solar

Memorandum

To:	Patrick Cousineau, EDP Renewables North America LLC
From:	Sean O'Brien, Biologist, ICF
Date:	May 26, 2023
Re:	Aquatic Surveys for Larval California Tiger Salamander at the Las Camas Solar Development Project in Merced County, California (USFWS # RP-Las Camas Solar-2023-0301)

Introduction

ICF was contracted to conduct aquatic surveys for federally and state listed California tiger salamander (CTS, *Ambystoma californiense*) larvae at the Las Camas Solar Development Project (project) in Merced County (Attachments A and B) (USFWS # RP-Las Camas Solar-2023-0301). The project proponent, EDPR CA Solar Park III LLC a wholly owned subsidiary of EDPR CA Solar Park III LLC, North America LLC., is proposing a solar development on the approximately 1,751-acre site. The project is located on the San Luis Dam and Volta U.S. Geological Survey 7.5-minute quadrangles (Approximate center of project: Universal Transverse Mercator [UTM] Easting: 679142.51, UTM Northing: 4101436.37, UTM Zone: 10S).

The purpose of the surveys is to determine if California tiger salamander is present in the vicinity of the project to inform environmental documents and avoidance and minimization measures. The remainder of this report discusses the methods and results of aquatic surveys for CTS larvae at the project.

Methods

Aquatic surveys for CTS larvae were conducted and authorized by U.S Fish and Wildlife Service (USFWS) under ICF Jones & Stokes permit # TE-795934-13.2 and Ms. Jennifer Hale's (formerly Haire) Memorandum of Understanding (MOU) and scientific collecting permit (#005452/SC-200960001-21267-001), on which Mr. O'Brien is listed as an independent researcher (Attachment C) (USFWS # RP-Las Camas Solar-2023-0301). Surveys followed the methodology in USFWS and CDFW's (2003) *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of California Tiger Salamander*.

Mr. Sean O'Brien conducted three rounds of aquatic surveys for CTS larvae during 2023: round 1 (March 24), round 2 (April 21), and round 3 (May 12). Mr. O'Brien was assisted by Mr. Seth Taylor of ICF during rounds 1 and 2, Ms. Rita Wilson of ICF during round 2, and Mr. Matthew Klauer of ICF during round 3.

Potential breeding habitat for California tiger salamander within 1.24-miles of the proposed project area was previously identified in the *Biological Resources Evaluation for the Las Camas Solar Development*

Project (ICF 2023). Potential breeding habitat for CTS is considered ‘pools that contain standing water continuously for at least 10 weeks, extending into April’ [USFWS and CDFW 2003]]. In addition, due to the above average rainfall year, ICF evaluated and surveyed any other potential breeding habitats observed within the 1.24-mile buffer surrounding the proposed project that may not have previously been identifiable during drought years.

Aquatic surveys were conducted in a total of ten habitats determined to provide potential CTS breeding habitat (Attachment B). Habitats were all artificial in-nature and consisted of stock ponds formed by placing berms within ephemeral drainages and topographic lows adjacent to or within roads. Most, if not all, of these habitats do not inundate during below average or even average rainfall years and were only inundated due to the above average 2022/2023 rainfall year. Targeted habitats were sampled during all three rounds of surveys.

CTS larvae sampling was conducted with either seines or dipnets depending on CTS life cycle and the sampled habitat’s hydroperiod (inundation depth and duration). Dipnets were used in habitats which did not pond enough water to apply to seine method or when vegetation was over abundant. Seines used measured 10 x 4 feet with 1/8-inch diameter mesh and were fitted with floats at the top and weights at the bottom (net bottom contacting the sediments and the net top at the water surface), which assists in keeping the net open. Habitats were sufficiently dipnetted and/or seined to detect CTS larvae presence while minimizing disturbance to the habitat and the risk of injuring larvae while sampling. After each seining and/or dipnetting event, the net was quickly viewed for organisms. Presence and abundance data were recorded for all observed amphibians and aquatic invertebrates captured while sampling. All captured organisms were quickly returned to the habitat from which they were collected after identification and enumeration.

Water depths (maximum and average [in inches]), water temperature (degrees Fahrenheit; °F), water turbidity (clear, tea colored, milky), and sampling method (seine or dipnet) of each habitat were recorded on standardized field data forms. Water depths were measured using net handles marked with one-inch increments and water temperature was measured using a digital thermometer. The approximate percent of the habitat sampled (by volume) using either seines or dipnets was also recorded. Information from the standardized field data forms was entered into Microsoft Excel spreadsheets (Attachment D). Additionally, representative photographs were taken of the monitored habitats and the species observed (Attachment E).

Results

Two species of amphibian larvae were observed during aquatic surveys, both non-special status species (Sierran treefrog [*Pseudacris sierra*] and California toad [*Anaxyrus boreas halophilus*]). No CTS larvae were observed. Aquatic survey data per round is provided in Attachment D. Representative photographs of the habitats sampled and species observed are provided in Attachment E.

Discussion

The 2022/2023 wet-season was an overall above average rainfall year for the project vicinity (National Oceanic and Atmospheric Administration [NOAA] 2023), approximately 166% of average rainfall (15.19

inches of rainfall during the 2022/2023 wet-season versus 9.15 inches of rainfall during average wet-seasons). Thus, the 2023 aquatic surveys for larval CTS met the minimum of 70% of average wet-season rainfall requirement from the CDFW and USFWS (2003) guidance. Sufficient precipitation occurred within the project to allow for the successful detection of CTS larvae if present. The absence of CTS larvae during this sampling year indicates that the project does not support CTS even during above average rainfall years.

Only six of the habitats surveyed (Aq. 1, 2, 3, 4, 6a, and 8) remained inundated during all three survey rounds. The habitats surveyed that did not remain inundated during all three survey rounds (Aq. 5, 6b, 7, 9 and 10) may not inundate for sufficient durations to support CTS breeding (i.e., 10 weeks of continuous inundation), especially on average or below average rainfall years.

For comparison to a reference site, CTS larvae were detected at the nearby proposed Westervelt Ecological Services (WES) Piedra Azul Conservation Bank (approximate center coordinates [WGS84] of CTS detection: 36.890245°, -120.936739°) located approximately 10 miles to the south of the Project on April 28, 2023 (WES, personal communication, May 26, 2023). This finding supports the idea that CTS larvae would have been detectable at the Project if they were present.

REFERENCES

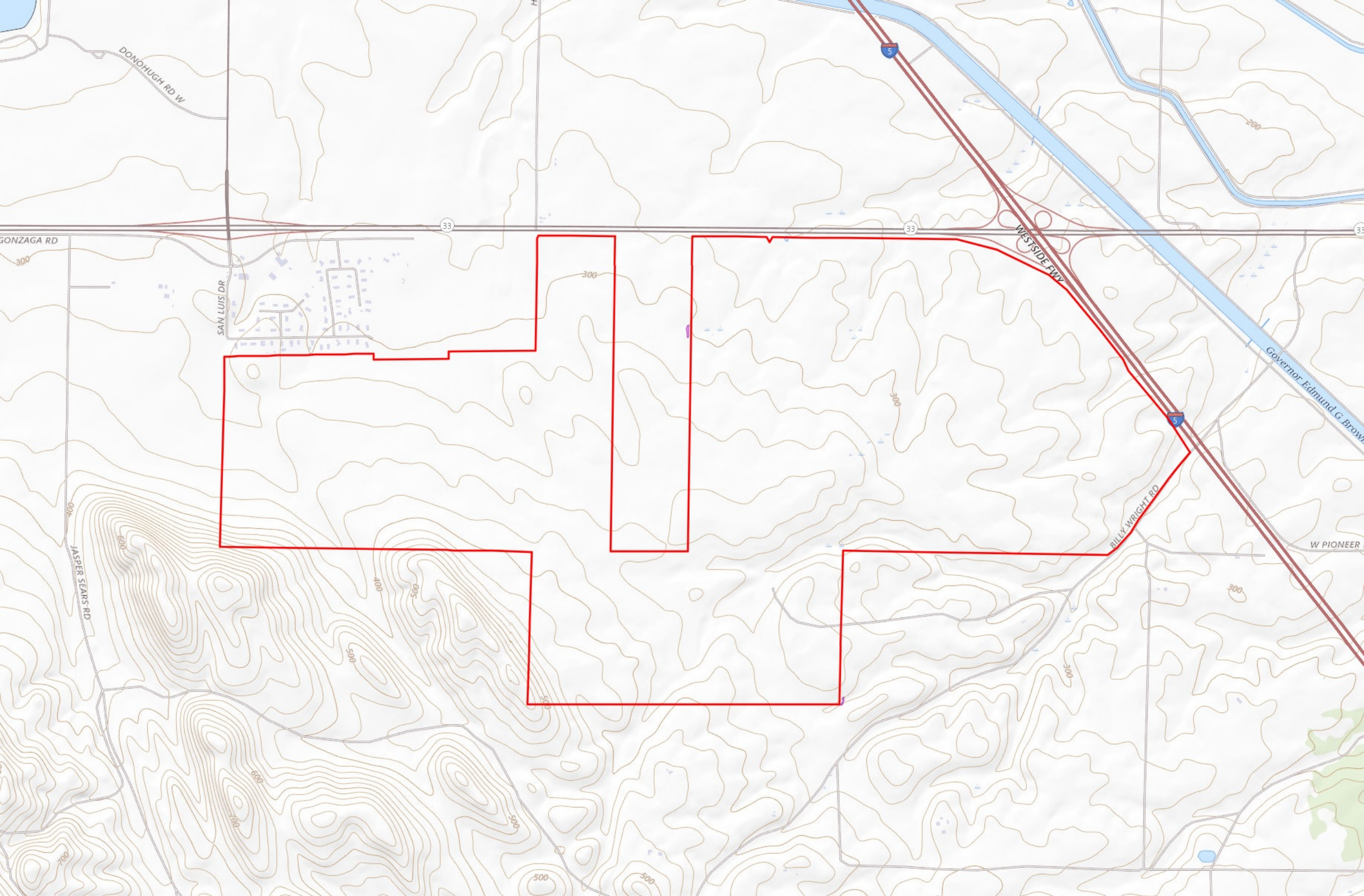
California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife (USFWS). 2003.

Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of California Tiger Salamander. 11pp. Dated: October 2003.

ICF. 2023. *Biological Resources Evaluation for the Las Camas Solar Development Project*. Prepared for: EDPR CA Solar Park III LLC. Prepared by: ICF. Dated: February 2023.

National Oceanic and Atmospheric Administration (NOAA). 2023. California Nevada River Forecast Center. Monthly Precipitation Summary Water Year 2023. Data from Los Banos Weather Station. Available online: https://www.cnrfc.noaa.gov/monthly_precip.php

**Attachment A: Las Camas Solar Development Project
Location on USGS Topographic Map (Project Boundary
shown in Red)**



Attachment B: California Tiger Salamander Potential Aquatic Breeding Habitat within 1.24-Miles of the Project

IPDCCITRDSGIS\1\Projects\IEDPR_Solan\02279_19_Las_Camas\Figures\Misc\CTS_Survey_2023\018.aprx User: 58303, Date: 5/22/2023

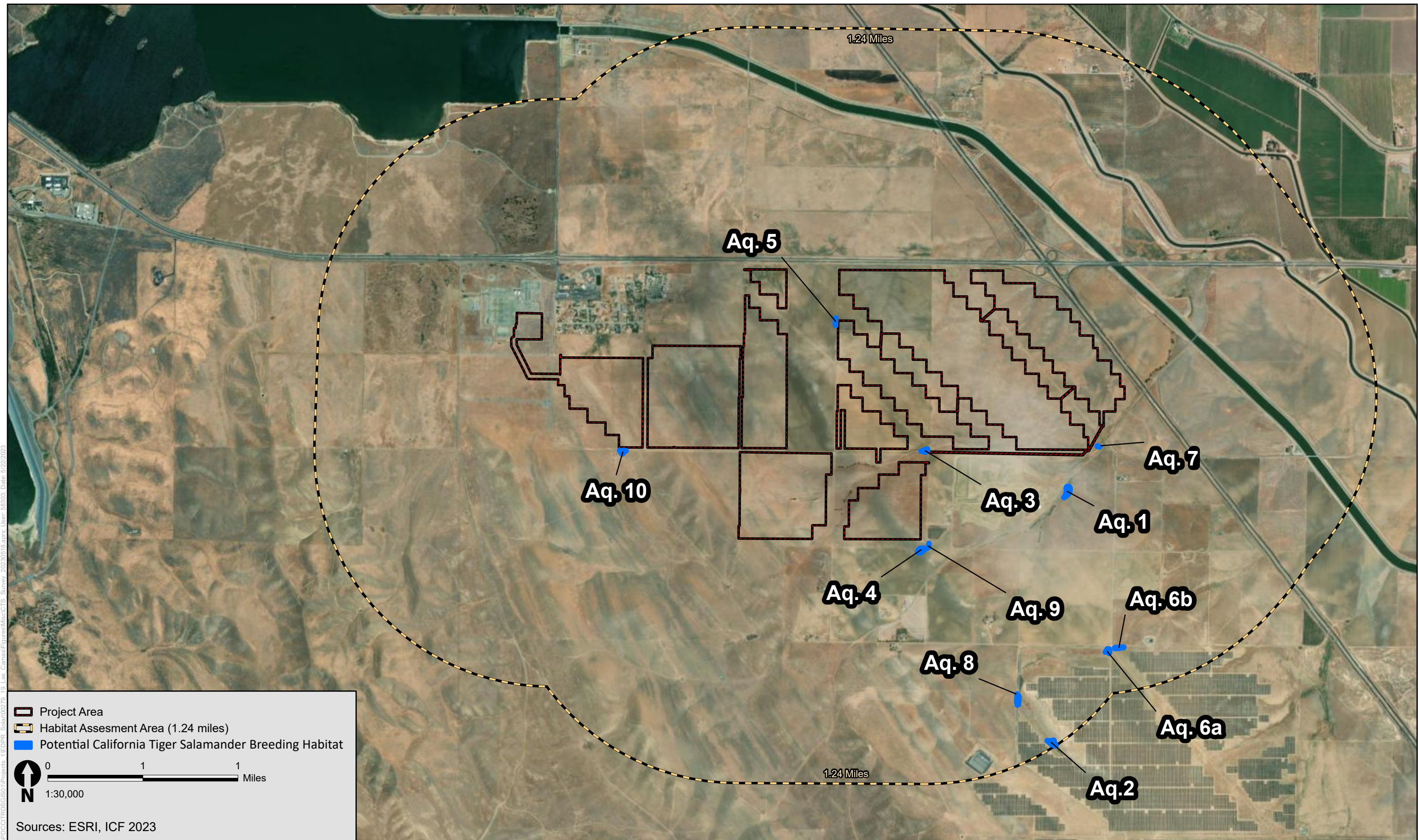


Figure 3-6
California Tiger Salamander Occurrence Records and Potential Aquatic Breeding Habitat Within 3.1 Miles of the Permit Area

Attachment C: USFWS Authorization

Survey Notification Approval, RP-Las Camas Solar-2023-0301 , Wet CTS

SP

Kong, Lauren M <lauren_kong@fws.gov> on behalf of SFWO Permits, FW8 <FW8_SFWO_Permits@fws.gov>

To

O'Brien, Sean

Cc

Cole, Patricia;

Kong, Lauren M

External Sender - Caution: This message originated from outside of ICF. Be careful when responding to or taking actions based on this message. If there are problems with how this message is displayed, click here to view it in a web browser.

Reply

Reply All

Forward

Wed 3/1/2023 11:25 AM

Sean O'Brien,

By this email message, you are authorized to conduct aquatic California tiger salamander surveys as specified in your February 16, 2023 email request, per the conditions of your recovery permit (TE-795934-13.2). Surveys will be conducted at the Las Camas Solar Development Project in Merced County, CA. Please remember to carry a copy of your permit while doing the work and to follow the terms and conditions therein. This authorization does not include access to the property which must be arranged with the landowner or manager. Please let us know if the activities are not performed as authorized, or if they are done by a different permittee under a separate authorization.

Please send survey reports with the reference # RP-Las Camas Solar-2023-0301 to FW8_SFWO_Permits@fws.gov and the San Joaquin Valley Division Supervisor, Patricia Cole (patricia_cole@fws.gov). Reports for vernal pool branchiopod surveys are due in 90 days. Reports for all other species are due in 45 days. Reports should include, at minimum:

1. The reference number to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization,
2. A copy of this authorization letter,
3. The names of all persons involved in each activity and their recovery permit numbers, if applicable,
4. A U.S. Geological Survey topographic map (1:24,000 scale) depicting the location of the project site, survey area, and location(s) of species in as precise a manner as possible.
5. All other information required in the 45/90 Day Survey Report section of your permit.

Thank you,

Lauren

--
10(a)(1)(A) Recovery Permitting
Sacramento Fish and Wildlife Office | USFWS
[Pacific Southwest Recovery Permitting](#)
[Survey Protocols](#) | [Minimum Qualifications](#)

The SFWO is using this consolidated mailbox for all communications regarding 10(a)(1)(A) recovery permits in our jurisdiction. Please send survey notifications, reports, and permit inquiries to this email address: FW8_SFWO_Permits@fws.gov.

Attachment D: CTS Aquatic Survey Data Forms

Attachment D: 2023 Las Camas Aquatic Surveys for CTS Larvae (Round 1)

Date: 03/24/2023

Weather: Cloud Cover: 5%, Air Temperature: 58°F

Surveyors: Sean O'Brien, Seth Taylor

Habitat No.	Habitat Measurements						Species Relative Abundances ²						
	Water Turbidity ¹	Water Temperature (°F)	Maximum Depth (in)	Average Depth (in)	S=Seine, D=Dipnet	Percent of Habitat Sampled	California toad larvae	Sierra treefrog larvae	Backswimmers	Midge larvae	Predaceous diving beetle	Versatile fairy shrimp	Water boatmen
Aq. 1	TC	57	40	30	S/D	100		NC	C	NC			C
Aq. 2	M	59	36	24	S/D	100		NC	NC	R	R		NC
Aq. 3	M	61	30	16	S/D	100			R				R
Aq. 4	M	60	36	24	S/D	100			C				R
Aq. 5	M	60	40	20	S/D	100			NC	NC			NC
Aq. 6a	TC	56	36	24	S/D	100		C	C	R			C
Aq. 6b	M	56	24	12	S/D	100		R		R			R
Aq. 7	C	55	28	16	S/D	100				NC			
Aq. 8	M	59	24	12	S/D	100			NC	R	R	NC	NC
Aq. 9	C	65	4	1	D	100							
Aq. 10	M	60	28	16	S/D	100				R			R

¹C = Clear, TC = Tea Colored, M = Milky

²R = rare (≤2 individuals), NC = not common (3-10 individuals), C = common (11-50 individuals), VC = very common (51 -100 individuals), A = abundant (100+ individuals)

"-" = Dry or less than 0.5 inches of ponding water at the time of sampling

Attachment D: 2023 Las Camas Aquatic Surveys for CTS Larvae (Round 2)

Date: 04/21/2023

Weather: Cloud Cover: 0%, Air Temperature: 68°F

Surveyors: Sean O'Brien, Seth Taylor, Rita Wilson

Habitat No.	Habitat Measurements						Species Relative Abundances ²						
	Water Turbidity ¹	Water Temperature (°F)	Maximum Depth (in)	Average Depth (in)	S=Seine, D=Dipnet	Percent of Habitat Sampled	California toad larvae	Sierra treefrog larvae	Backswimmers	Midge larvae	Predaceous diving beetle	Water boatmen	Water fleas
Aq. 1	TC	62	40	28	S/D	100	C	VC	C	NC	NC	C	C
Aq. 2	M	63	36	22	S/D	100		C	C	R	R	C	C
Aq. 3	M	64	30	16	S/D	100	A	VC	C	NC	NC	C	NC
Aq. 4	M	64	36	16	S/D	100		R	NC	R	R	NC	
Aq. 5	-	-	-	-	-	-							
Aq. 6a	M	63	30	16	S/D	100		C	C	R	R	C	NC
Aq. 6b	-	-	-	-	-	-							
Aq. 7	-	-	-	-	-	-							
Aq. 8	M	63	24	12	S/D	100		NC	VC	NC	NC	C	C
Aq. 9	-	-	-	-	-	-							
Aq. 10	M	64	16	10	D	100			NC	R	R	NC	

¹C = Clear, TC = Tea Colored, M = Milky

²R = rare (≤ 2 individuals), NC = not common (3-10 individuals), C = common (11-50 individuals), VC = very common (51 -100 individuals), A = abundant (100+ individuals)

"-" = Dry or less than 0.5 inches of ponding water at the time of sampling

Attachment D: 2023 Las Camas Aquatic Surveys for CTS Larvae (Round 3)

Date: 05/12/2023

Weather: Cloud Cover: 5%, Air Temperature: 64°F

Surveyors: Sean O'Brien, Matthew Klauer

Habitat No.	Habitat Measurements						Species Relative Abundances ²				
	Water Turbidity ¹	Water Temperature (°F)	Maximum Depth (in)	Average Depth (in)	S=Seine, D=Dipnet	Percent of Habitat Sampled	California toad larvae	Sierra treefrog larvae	Backswimmers	Predaceous diving beetle	Water boatmen
Aq. 1	M	63	40	16	S/D	100	C	VC	A	NC	A
Aq. 2	M	66	36	22	S/D	100		C	A	R	A
Aq. 3	TC	66	18	10	S/D	100		NC	A		A
Aq. 4	M	65	36	16	S/D	100		R	A		A
Aq. 5	-	-	-	-	-	-					
Aq. 6a	M	64	24	14	S/D	100		C	A	NC	A
Aq. 6b	-	-	-	-	-	-					
Aq. 7	-	-	-	-	-	-					
Aq. 8	TC	65	18	10	D	100		R	A	NC	A
Aq. 9	-	-	-	-	-	-					
Aq. 10	-	-	-	-	-	-					

¹C = Clear, TC = Tea Colored, M = Milky

²R = rare (≤2 individuals), NC = not common (3-10 individuals), C = common (11-50 individuals), VC = very common (51 -100 individuals), A = abundant (100+ individuals)

"-" = Dry or less than 0.5 inches of ponding water at the time of sampling

Attachment E: Representative Photographs



Photograph of Aq. 1 taken facing southwest on March 24, 2023.



Photograph of Aq. 2 taken facing southwest on March 24, 2023.



Photograph of Aq. 3 taken facing south on March 24, 2023.



Photograph of Aq. 4 taken facing west on March 24, 2023.



Photograph of Aq. 5 taken facing north on March 24, 2023.



Photograph of Aq. 6 taken facing southwest on March 24, 2023.



Photograph of Aq. 8 taken facing south on March 24, 2023.



Photograph of versatile fairy shrimp observed within Aq. 8 on March 24, 2023.



Photograph of Aq. 9 taken facing northwest on March 24, 2023.



Photograph of Aq. 10 taken facing southwest on March 24, 2023.



Photograph of Aq. 1 taken facing south on April 21, 2023.



Photograph of Aq. 2 taken facing southwest on April 21, 2023.



Photograph of Aq. 3 taken facing west on April 21, 2023.



Photograph of California toad observed within Aq. 3 on April 21, 2023.



Photograph of Aq. 6 taken facing southwest on April 21, 2023.



Photograph of Sierran treefrog observed within Aq. 6 on April 21, 2023.



Photograph of Aq. 1 taken facing south on May 12, 2023.



Photograph of Sierran treefrog larvae observed within Aq. 1 on May 12, 2023.



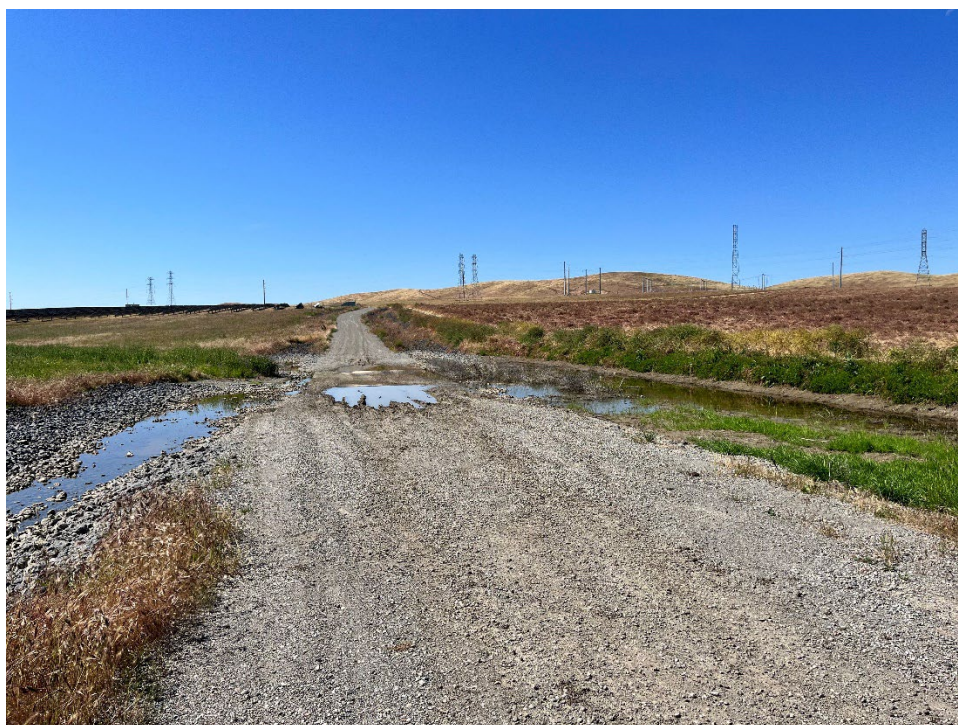
Photograph of Aq. 3 taken facing south on May 12, 2023.



Photograph of Aq. 4 taken facing west on May 12, 2023.



Photograph of Aq. 6 taken facing southwest on May 12, 2023.



Photograph of Aq. 8 taken facing south on May 12, 2023.