DOCKETED	
Docket Number:	26-OPT-01
Project Title:	Vaca Dixon Power Center Project
TN #:	270886
Document Title:	California Tiger Salamander Habitat Assessment
Description:	Memorandum describing methods and results of a California tiger salamander habitat assessment of the pond located north of the project gen-tie lines
Filer:	Adam Morrison
Organization:	Rincon Consultants, Inc.
Submitter Role:	Applicant Consultant
Submission Date:	6/19/2026 3:23:27 PM
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June 8, 2026
Rincon Project No: 25-17851

Renee Longman
California Energy Commission
715 P Street
Sacramento, California 95814

Subject: California Tiger Salamander Habitat Assessment for the Vaca Dixon Power Center Project in Solano County, California

Dear Renee Longman:

This memorandum describes the methods and results of a California tiger salamander (*Ambystoma californiense*, CTS) habitat assessment conducted by Rincon Consultants, Inc. (Rincon) to support the Vaca Dixon Power Center Project (project) in the City of Vacaville, California. Rincon is currently assisting Vaca Dixon BESS LLC/Arges BESS LLC (Applicants) with preparing a California Energy Commission (CEC) AB 205 Opt-In Application for the project, which will develop a battery energy storage system (BESS) with associated infrastructure and transmission intertie (gen-tie) lines.

On February 13, 2026, the Applicants received a Determination of Incomplete Application and Request for Information from the CEC for the Vaca Dixon Power Center Project (26-OPT-01) in response to the Applicant's application filed on January 14, 2026. Data Request BIO-13 requested a discussion of biological resources potentially occurring in the vicinity of the project gen-tie corridor, particularly the potential suitability of two nearby ponds to support CTS breeding. On April 15, 2026, the Applicant held a technical call with representatives from the CEC and the California Department of Fish and Wildlife (CDFW) to discuss the CEC Data Requests related to biological resources. On this call, the CEC Staff Biologist recommended the Applicant conduct dipnet surveys to determine if CTS larvae were present in the subject ponds.

Although no suitable aquatic breeding habitat is present in the project area, there is a pond located approximately 1,000 feet north of the project gen-tie lines and a pond located just west of the gen-tie lines. Since CTS can disperse up to 1.24 miles between aquatic habitats (CDFW 2018), Rincon conducted a habitat assessment of the pond to the north to determine if the pond (referred to as subject pond throughout this document) provides suitable aquatic breeding habitat for CTS. The applicant contacted the landowner of the pond to the west to confirm if the area could be accessed to perform dipnet surveys of the pond. The applicant was not granted access to assess the pond to the west; therefore, a discussion regarding the potential for that pond to support CTS is not included in this report.

After completing the habitat assessment, Rincon determined that the subject pond is unlikely to provide breeding habitat for CTS. The habitat assessment is described in more detail below.

Project Location

The BESS facilities are proposed to be installed on an approximately 10-acre site (Assessor's Parcel Number 0133-060-060; Attachment 1, Figure 1). The BESS site is situated just south of Interstate 80 (I-80) along Kilkenny Road. The gen-tie lines cross I-80 to the north to connect the BESS facilities to the existing Pacific Gas & Electric (PG&E) Vaca-Dixon Substation located on a PG&E-owned parcel (APN 0133-060-070) adjacent to Quinn Road (Attachment 1, Figure 2). Land uses surrounding the project area include agriculture surrounding the BESS facilities, undeveloped land northwest of the PG&E-owned parcel, and developed areas, including existing PG&E facilities associated with the PG&E Vaca-Dixon Substation and rural residential development to the west. The location of the subject pond to the north is depicted in Attachment 1, Figure 3.

California Tiger Salamander Life History

The CTS is a lowland species found primarily in grasslands and open foothill oak woodland habitats. During the non-breeding season (typically June-September), adults and juveniles occur in upland habitats and occupy California ground squirrel (*Otospermophilus beecheyi*) or other small mammal burrows. They also occur in wood piles and large soil cracks. They aestivate in these features throughout the summer and fall to avoid desiccation. This species is typically found where there is suitable aquatic breeding habitat within approximately 2,200 feet; however, CTS have been documented up to 1.24 miles from suitable aquatic habitat (Trenham and Shaffer 2005). Suitable aquatic breeding habitat includes long-lasting rain pools, seasonal ponds, vernal pools, and seasonal wetlands that have a hydroperiod of 8-12 weeks and are often turbid. They migrate nocturnally to aquatic sites to breed during winter and spring rains. After larvae develop into juveniles, the juveniles emigrate at night from the drying pools to upland refuge sites. Most salamanders continue to move to different burrow systems further from breeding ponds over the next one to four months.

Methodology

The habitat assessment was conducted by Rincon senior biologist Lisa Achter, who holds a U.S. Fish and Wildlife Service (USFWS) Endangered Species Act (ESA) Section 10(a)1(A) recovery permit (No. ES05665B) and CDFW Scientific Collecting Permit (No. SC-012693) for CTS.

The habitat assessment consisted of a desktop review and field survey in accordance with the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (referred to as Interim Guidance throughout the remainder of this document; USFWS and CDFG 2003) to determine if the subject pond provides suitable aquatic habitat for CTS, as well as suitable upland habitat in the vicinity of the subject pond. During the field survey, Rincon was prepared to conduct a dipnet survey to determine if CTS larvae were present in the subject pond, should suitable aquatic habitat be present. A notification was provided to CDFW and USFWS describing the proposed methods for the habitat assessment and potential dipnet survey on May 27, 2026 (Attachment 2).

Prior to the field portion of the assessment, Rincon reviewed aerial photographs of the project area, subject pond, and area within 1.24 miles of the subject pond to understand the ecological setting of the area (Google Earth 2026). In addition, and as directed in the Interim Guidance, Rincon reviewed the CDFW California Natural Diversity Database (CNDDB) to determine the locations of documented occurrences of CTS within 3.1 miles of the subject pond (CNDDB 2026). As directed in the Interim Guidance, a review of iNaturalist was also conducted to further inform the analysis (iNaturalist 2026); however, iNaturalist is a citizen science project, and data from this source is not always reliable. Commonly, the locations of occurrences in iNaturalist are concealed to protect sensitive species. As such, the review of iNaturalist occurrences was conducted to obtain a general understanding of the potential for CTS to occur in and near the project area, based on verifiable information available in iNaturalist, including occurrences with unambiguous photos, in areas where aquatic and upland habitat types are present.

The field survey was conducted on May 28, 2026, between 1100 and 1400. The weather was partly cloudy, with temperatures ranging between 67-70° Fahrenheit and windspeeds up to one mile per hour. During the assessment, Rincon walked through the area surrounding the subject pond and along the edges of the subject pond. Vegetation communities and general habitat characteristics were documented, as well as incidental wildlife detections.

Results of the Assessment

Desktop Review and Documented Occurrences

There are three distinct CTS population segments (DPS): the Santa Barbara County DPS, the Sonoma County DPS, and the Central California DPS. The project area overlaps the Central California DPS, which is federally- and state-listed as threatened under the ESA and the California Endangered Species Act (CESA). There are no CNDDB documented occurrences of CTS within 3.1 miles of the subject pond (CNDDB 2026). The nearest documented CNDDB occurrence is from 2022 and is located within a mitigation site approximately 6.4 miles south of the subject pond. A review of the iNaturalist database returned 13 occurrences of CTS within 3.1 miles of the subject pond (iNaturalist 2026). Of these, seven occurrences are located southeast of I-80 and six are located northwest of I-80; however, the exact locations of these occurrences are uncertain, due to concealed iNaturalist location data. For example, one occurrence includes a photo of a larvae at an educational event; however, there is no aquatic habitat at the documented occurrence location, which is a developed orchard.

The I-80 corridor likely serves as a barrier to dispersal for CTS, as traffic traveling at high speeds would prevent CTS from successfully crossing the Interstate. Although there may be under crossings where CTS could potentially access both sides of I-80, these under crossings are typically for roads and would pose a similar hazard. Of the six iNaturalist occurrences northwest of I-80, none are within the known 1.24-mile dispersal distance for CTS. The two nearest occurrences are 1.3 and 1.5 miles southwest of the subject pond (Figure 4). These appear to be verifiable occurrences from areas that contain suitable vernal pool habitat and surrounding annual grassland that serves as upland habitat for CTS.

Field Survey and Habitat Description

Upon arrival at the subject pond, access restrictions were encountered. Livestock fencing with three strands of barbed wire on top was present around the northern, eastern, and western portions of the subject pond. In addition, a concrete lined channel 8-10 feet in height/depth was present adjacent to the southern boundary of the subject pond, further limiting access. However, the pond could be viewed from outside of the fencing and channel (see representative site photographs in Attachment 3), but it was unclear whether the pond connected to the concrete channel due to dense vegetative growth.

The subject pond can be described as a permanent wetland that remains inundated year-round. This determination was made based on a review of aerial imagery within the last five years (Google Earth 2026), as well as the vegetative structure of the pond and the wildlife species detected during the survey. The pond is approximately six acres in size, heavily vegetated, and appears to be at least two to three feet deep in the middle and southern sections. Mature Chinese Pistache (*Pistacia chinensis*) and willow (*Salix* sp.) were observed on the edges of the northern section of the subject pond. Cattails (*Typha* sp.) in the subject pond were dense and present throughout most of the pond, except in the center where the water appeared to be deeper. The banks of the pond were vegetated with non-native annual grasses and weedy dicots.

The area surrounding the subject pond consisted of agricultural fields, specifically alfalfa (*Medicago* sp.). The alfalfa fields were mostly flooded, although it was unclear whether it was due to recent rains or overflow from the surrounding agricultural ditches, all of which were full (and overflowing in some cases). Because of this, no burrows or other areas of upland refuge for CTS were observed in the fields. At the time of the field survey, water was flowing from the alfalfa fields into the subject pond, and then from the pond into the concrete channel to the south.

A large agricultural ditch is located along a dirt road that runs parallel to the western side of the alfalfa field, approximately 135 feet west of the subject pond (Figure 3). This ditch had steep banks 8-10 feet in depth/height, where non-native grasses and weedy dicots were present. This ditch did not connect to the subject pond.

American bullfrogs (*Lithobates catesbeianus*) were detected in all portions of the subject pond, large agricultural ditch, and the concrete channel to the south, including tadpoles, juveniles, and adults. In addition, northern river otter (*Lontra canadensis*) scat was observed on the eastern, western, and southern sides of the pond (along the concrete channel to the south). A red-shouldered hawk (*Buteo lineatus*) was observed perched in one of the willows adjacent to the northern end of the subject pond. One northwestern pond turtle (*Actinemys marmorata*) was observed in the large agricultural ditch west of the subject pond. A list of wildlife species detected during the survey is included in Table 1 below.

Table 1 Wildlife Species Detected During the Survey

Scientific Name	Common Name	Status (Federal/State)	Native or Introduced
Amphibians			
Lithobates catesbeianus	American bullfrog	None	Introduced
Crustaceans			
Procambarus clarkii	Louisiana crayfish	None	Introduced
Reptiles			
Actinemys marmorata	northwestern pond turtle	Proposed Threatened/Species of Special Concern	Native
Birds			
Agelaius phoeniceus	red-winged blackbird (colony)	None	Native
Ardea alba	great egret	None	Native
Buteo lineatus	red-shouldered hawk	None	Native
Quiscalus mexicanus	great-tailed grackle	None	Native
Megaceryle alcyon	belted kingfisher	None	Native
Tyrannus verticalis	western kingbird	None	Native
Zenaida macroura	mourning dove	None	Native
Mammals			
Lontra canadensis	northern river otter (scat)	None	Native

Conclusions

Due to the presence of dense vegetation, bullfrogs, river otters, trees to support raptor hunting, and a lack of suitable uplands adjacent to the subject pond, the pond is unlikely to support CTS breeding. The presence of bullfrogs indicates the subject pond holds water permanently (bullfrogs require permanent water sources), and CTS have adapted to use seasonal vernal pools and wetlands that have a shorter hydroperiod to avoid the potential for predation. Although the presence of bullfrogs does not always preclude CTS from occurring, bullfrogs are known to predate on CTS larvae and adults. This coupled with the lack of suitable upland habitat adjacent to the subject pond (consisting of agriculture fields lacking suitable upland refugia for CTS), dense vegetation in the pond, and presence of other predators makes it very unlikely that CTS could survive in the pond. In addition, the highly managed nature of the agricultural fields surrounding the pond likely precludes CTS from occurring. Lastly, there is a lack of documented occurrences of CTS within 1.24 miles of the subject pond.

Other upland and aquatic habitat within 1.24 miles of the subject pond and project area that may be suitable for CTS consists of undeveloped land west of the large agricultural ditch along Gibson Canyon Creek and some areas east of I-80. These areas contain vernal pools, seasonal wetlands, and undeveloped annual grassland habitat that may support CTS. However, the presence of predators

(bullfrogs and river otters) in the large agricultural ditch likely prohibits CTS access from accessing the site from the west. In addition, and as discussed above, I-80 likely serves as a barrier to dispersal of CTS from the east.

Lastly, the concrete channel south of the subject pond is 8-10 feet in height/depth. This channel likely serves as a barrier that prevents amphibians and reptiles from being able to access the project area. The area between the concrete channel and the project gen-tie lines is highly managed and disturbed. Most of the area was devoid of vegetation due to the apparent use of herbicides, and the remainder of the area consisted of mowed, ruderal vegetation.

Rincon is committed to providing exceptional services for this project. Please contact us if you have any questions or need any additional information.

Sincerely,
Rincon Consultants, Inc.

Lisa Achter
Senior Biologist

Attachments

Attachment 1 Figures
Attachment 2 CDFW Notification
Attachment 3 Representative Site Photographs

References

California Department of Fish and Wildlife (CDFW). 2018. California Interagency Wildlife Task Group. (Last updated 2023). California Wildlife Habitat Relationships System, Version 9.0. Sacramento, CA. Accessed June 2, 2026.

California Natural Diversity Database (CNDDB). 2026. California Department of Fish and Wildlife (CDFW). Rarefind, Version 5.3.0. Accessed May 2026.

Google Earth Pro V 7.3.7.1155 (64-bit). 2026. Sacramento, California. 38°24'15.89" N and 121°55'26.40" W. Eye alt 3,422 feet. http://www.earth.google.com. Accessed May 2026.

Trenham, P.C. and Shaffer, H.B. (2005), Amphibian Upland Habitat Use and Its Consequences for Population Viability. Ecological Applications, 15: 1158-1168. https://doi.org/10.1890/04-1150

U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). 2003. Interim guidance on site assessment and field surveys for determining presence or a negative finding of the California tiger salamander.

Attachment 1

Figures

Figure 1 Regional Location

Basemap provided by Esri and its licensors © 2026.
Map created by Rincon Consultants, Inc., 2026.

25_17851 Bio
Fig 1 Regional Location

Project Location
115 kV Overhead Gen-tie
13.8 kV Overhead Gen-tie
BESS Project Area
N

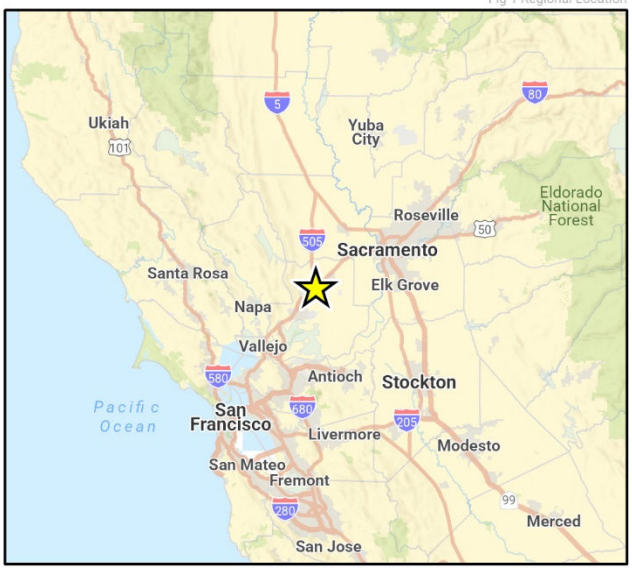
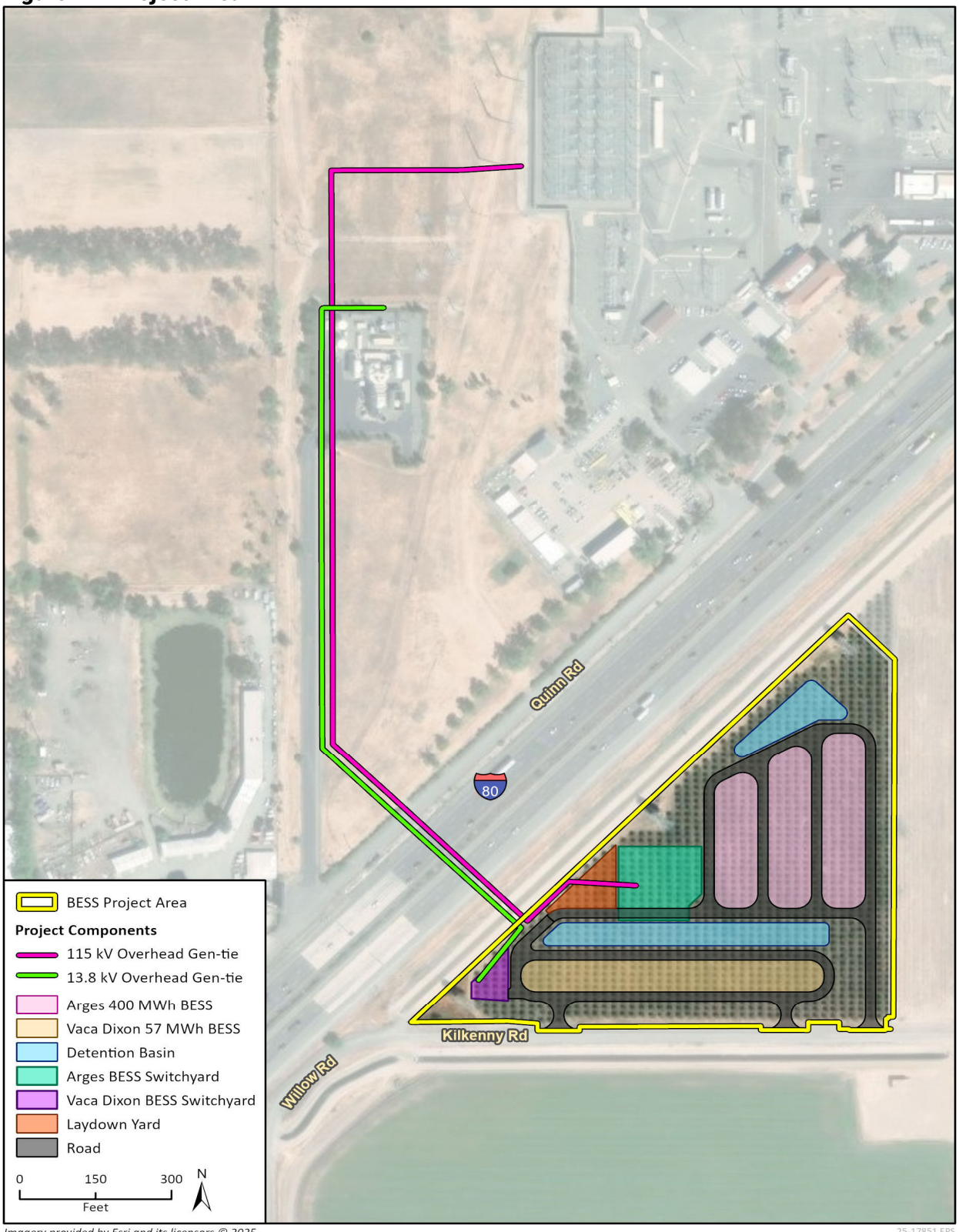


Figure 2 Project Area



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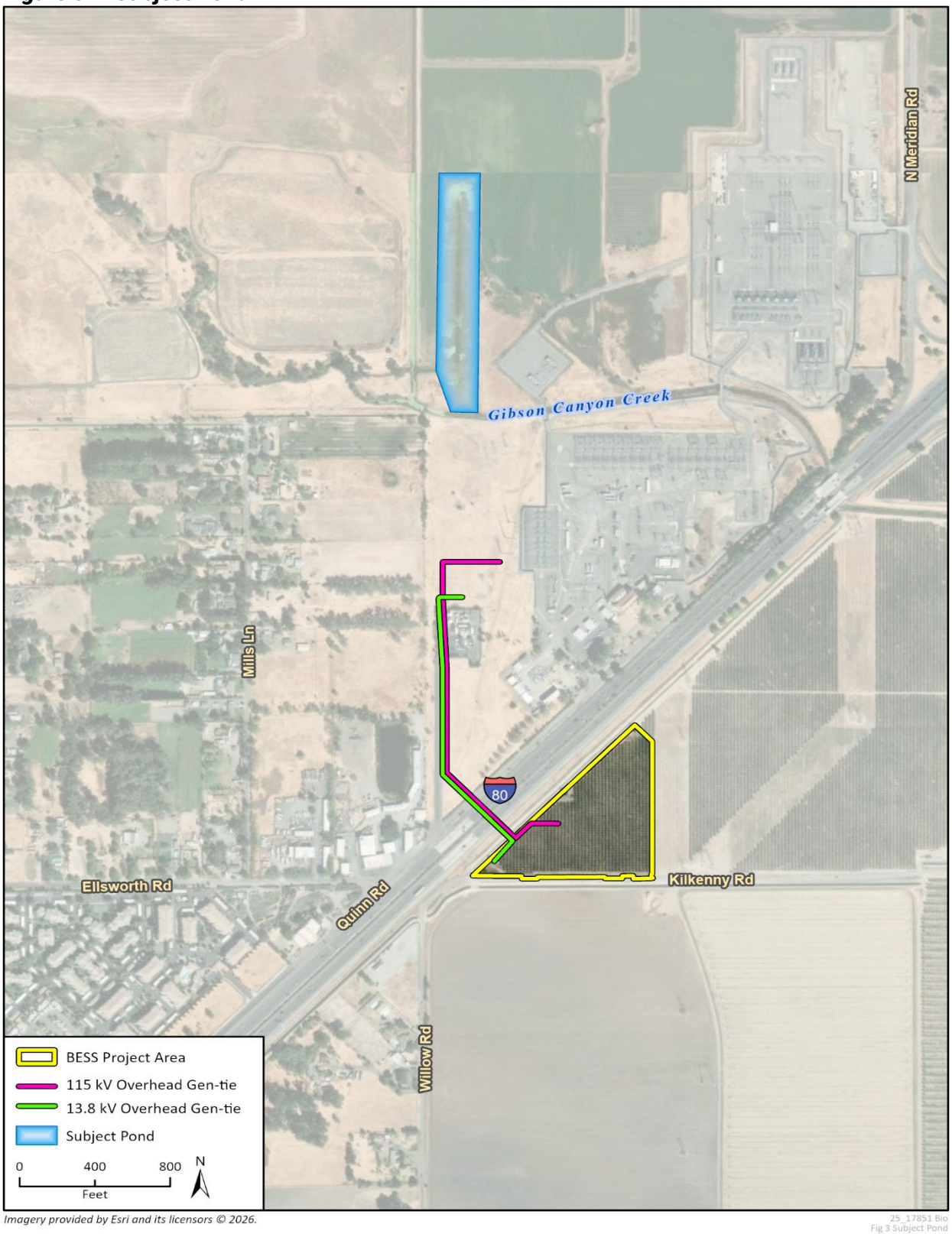
25-17851 EPS
Fig X Project Site and Components

Figure 3 Subject Pond



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25_17851 Bio
Fig 3 Subject Pond

Figure 4 California Tiger Salamander Occurrences

Imagery provided by Esri and its licensors © 2026.
Additional data provided by CDFW, 2026 and iNaturalist, 2026.

25_17851 Bio
Fig 4 California Tiger Salamander Occurrences

Attachment 2

CDFW Notification

From:	Lisa Achter
To:	'Greg.Martinelli@wildlife.ca.gov'; 'fw8_bdfwo_permits@fws.gov'; 'fw8_sfwo_permits@fws.gov';
Subject:	Notification of CTS sampling under Section10(a)1(A) Permit No. ES05665B and MOU SC-012693
Attachments:	Fig X Project Site - BSA.jpg;Project area and pond.jpg;
Sent:	5/27/2026 12:07:00 PM

Dear CESA and ESA Permit Coordinators,

This email is to notify you of my intention to conduct presence/absence dipnet sampling surveys for California tiger salamander (CTS) **tomorrow, 5/28/26**, for the Vaca-Dixon Power Center project in Vacaville, CA (location attached). Although my permit conditions stipulate that 15-day notice is required prior to conducting any surveys, a recent change in the project construction schedule has moved the project timeline forward. As such, I am providing notification as early as possible to be able to maximize the probability of detection of the species. The surveys will be conducted in accordance with the Section 10(a)1(A) recovery permit (No. ES05665B) and MOU/SCP (No. SC-012693) permit conditions issued to Lisa Achter.

The CEC and CDFW have provided comments regarding the potential presence of CTS in a pond north of the project area (attached; 38.404383, -121.923711) and have requested a detailed assessment of the pond be conducted to determine the potential presence of CTS. As such, this survey will consist of a habitat assessment, and if suitable habitat is present, dipnet sampling of the pond.

Should dipnet sampling be required under this task, it will be conducted in accordance with the approved *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* document. The survey will be conducted with nets that have a mesh size of 2-mm or less to safely catch larvae/juveniles without injuring them. Sweeps will target representative portions of the pond, focusing on near-shore, shallow areas. If CTS larvae/juveniles/adults are captured, they will be photographed, measured, and released, and sampling will cease and the pond will be considered occupied. Captured CTS larvae/juveniles/adults will remain in the net and handled with gloves for the least amount of time necessary, but no longer than 5 minutes, and wetted at least every 30 seconds. Disinfecting of clothing and sampling equipment will be conducted after completion of surveys according to the permit conditions and the *Declining Amphibian Population Task Force* guidance document. Please let me know if you have any questions or need any additional information.

RINCON

Lisa Achter
Senior Biologist, Project Manager
Lachter@rinconconsultants.com
530-217-8952 Mobile
Sacramento, California

Attachment 3

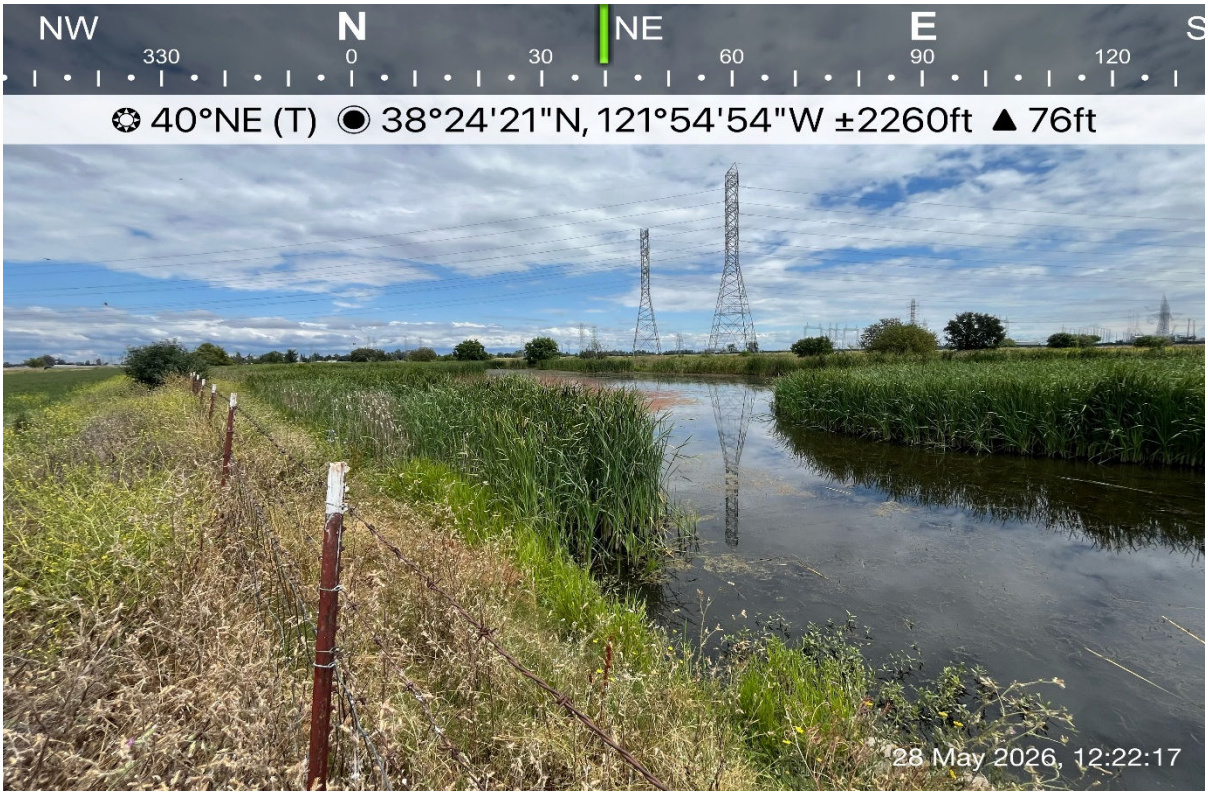
Site Photographs

Photograph 1. Looking southwest across subject pond from northeast corner. May 28, 2026.

Photograph 2. Looking west across subject pond from center-eastern fence line. May 28, 2026.

Photograph 3. Looking south along western fence line of subject pond with alfalfa field to the west. May 28, 2026.

Photograph 4. Looking southeast across subject pond from northwestern fence line. May 28, 2026.

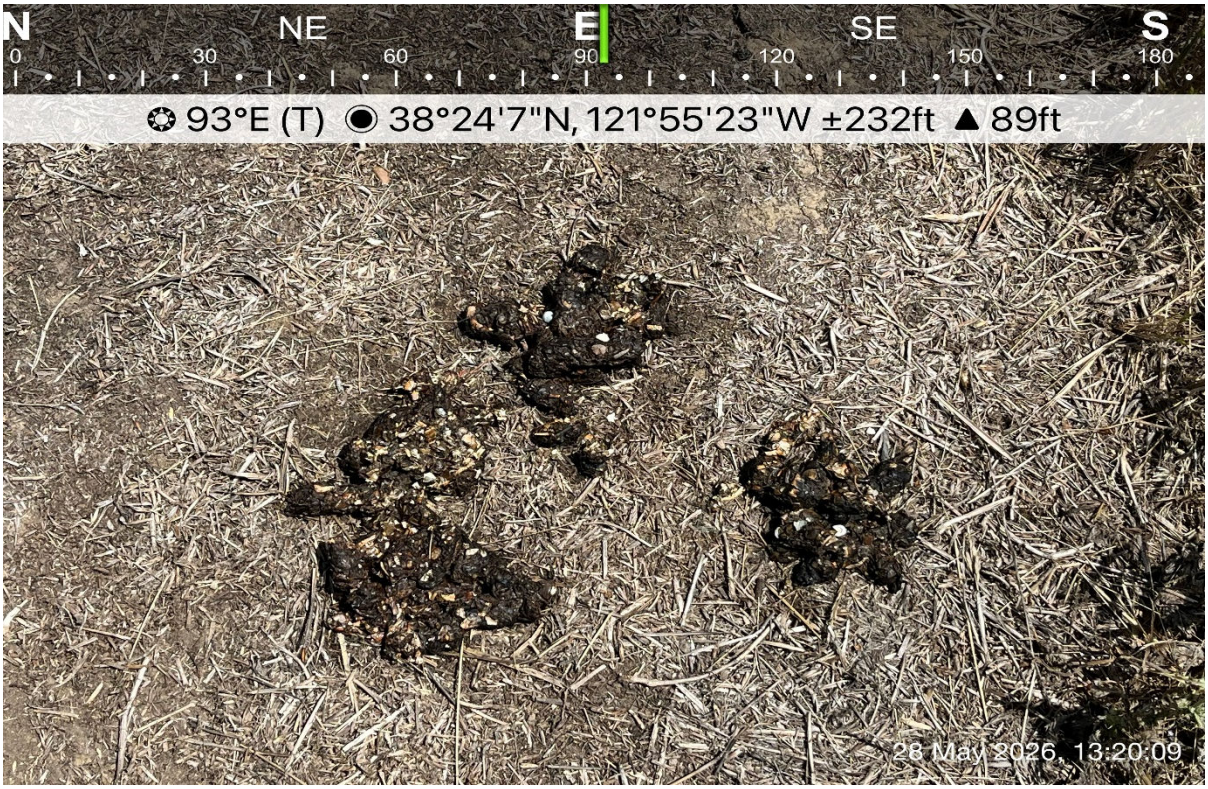


Photograph 5. Looking northeast across subject pond from southwestern fence line. May 28, 2026.

Photograph 6. Looking east across alfalfa fields surrounding subject pond. May 28, 2026.

Photograph 7. Concrete channel along southern boundary of subject pond. May 28, 2026.

Photograph 8. Looking north across concrete channel to subject pond. May 28, 2026.



Photograph 9. River otter scat adjacent to concrete channel. May 28, 2026.

Photograph 8. Bullfrog in concrete channel adjacent to subject pond. May 28, 2026.